WEBSITE CREATION FOR SMARTXPOSE TECHNOLOGIES

SUBMITTED BY

SNEHA R (21PCC011)

M.Com (COMPUTER APPLICATION)

Under the Guidance of

Dr. S Sangamithra M. Com, Ph.D.,NET.,

Assistant Professor

Department of Commerce, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.

In partial fulfilment of the requirements for the award of the Degree of

Master of Commerce with Computer Application

DEPARTMENT OF COMMERCE

AVINASHILINGAM INSTITUTE FOR HOME SCIENCE

AND HIGHER EDUCATION FOR WOMEN, COIMBATORE-641043

April 2023

CERTIFICATE

CERTIFICATE

This is to certify that the project entitled on **"WEBSITE CREATION FOR SMARTXPOSE TECHNOLOGIES"** submitted to Department of Commerce, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, in partial fulfilment of the requirements for the award of the **DEGREE OF MASTER OF COMMERCE WITH COMPUTER APPLICATION**, is the record of the original project work done by **SNEHA.R** (Reg.No:21PCC011) during the period of her study, under my supervision and guidance.

S. Sangamithra 10/5/2023

Signature of Supervisor

10/5/23

Signature of the Head of Department

Submitted for the viva voce examination held on 15.5.2023

15/5/2023

Internal examiner

15/5/23

External examiner

Smartxpose

No254,Venkatasamy Road ,new layout, vadivelagandhur,Coimbatore,Tuppur. Email: smartxpose@gmail.com +91-9976864887

Date: 09/05/2023

This is to certify that Ms. SNEHA R (Regno: 21PCC011), a Final year MCOM (CA) in AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, Coimbatore has successfully completed her project work entitled "WEBSITE CREATION" in our company during the time period of December 2022 to April 2023.During this period her performance and character were found to be good. We wish all success in her future endeavors.

For

(Gopinath G)

Smartxpose Technogies

DECLARATION

DECLARATION

I hereby declare that this project work entitled **"Website Creation for Smartxpose Technologies"** submitted to Department of Commerce, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, in partial fulfilment of the requirements for the award of the **DEGREE OF MASTER OF COMMERCE WITH COMPUTER APPLICATION** is the record of the original project work done by **SNEHA.R** during the period of study, under the supervision and guidance of Assistant Professor, **Dr.S.Sangamithra M.com, Ph.D, NET.,** Department of Commerce, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.

Place: Coimbatore

Date: 10.5.2023

R. Sneha

Signature of the Candidate

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CONTENT

TABLE OF CONTENTS

ABSTRACT

ABSTRACT

Solar water heaters are a sustainable and cost-effective solution for heating water in households and commercial buildings. They harness the power of the sun to generate hot water, reducing the dependence on non-renewable energy sources and lowering energy bills. In this website, you will find a comprehensive guide to solar water heaters, including their types, working principles, benefits, installation, and maintenance. With our informative content and expert advice, you can make an informed decision on choosing the right solar water heater for your needs and budget. Experience the convenience and eco-friendliness of solar water heaters. The "Website Creation for Smartxpose Technologies" is a newly proposed website that was created using HTML and CSS as the front end. It provides information, an HTML website may also aim to engage users, encourage them to interact with the site, and provide them with a positive user experience. This can be achieved through the use of appealing design, intuitive navigation and clear calls-to-action (CTAs) that prompt users to take specific actions, such as filling out a contact form or making a purchase. CSS works by targeting HTML elements and applying styles to them, which are defined in a separate CSS file or in-line within the HTML code itself. This separation of content and presentation allows web developers to create flexible and responsive websites that can adapt to different screen sizes and devices.

Users can view the different types of products available and the price of each product. For maintenance, adding and changing the code to the system is beneficial for restoration. The suggested solution has been created with a good amount of flexibility without sacrificing response speed in order to address the system's current issues. The systematised job increases accuracy, minimises the majority of clerical labour, and makes it quick to produce reports that are clear and legible. Therefore, by creating a website that is user-friendly, many users can utilise it with little to no computer experience or training. The project has been created, and its goals have been accomplished. Depending on the needs of the user, it might be improved in the future. The front end of this project was created using HTML and CSS. It uses security provider software, which we can access from anywhere, to provide superior security facilities.

CHAPTER I

INTRODUCTION

Solar Water Heating (**SWH**) is heating water by sunlight, using a solar thermal collector. A variety of configurations are available at varying cost to provide solutions in different climate latitudes. SWHs are widely used for residential and some industrial applications. A sun-facing collector heats a working fluid that passes into a storage system for later use. SWH are active (pumped) and passive (convection-driven). They use water only, or both water and a working fluid. They are heated directly or via light-concentrating mirrors. They operate independently or as hybrids with electric or gas heaters. In large-scale installations, mirrors may concentrate sunlight into a smaller collector.

STRUCTURE AND WORKING

Simple designs include a simple glass-topped insulated box with a flat solar absorber made of dark-coloured sheet metal, attached to copper heat exchanger pipes, or a set of metal tubes surrounded by an evacuated (near vacuum) glass cylinder. In industrial cases a parabolic mirror can concentrate sunlight on the tube. Heat is stored in a hot water storage tank. The volume of this tank needs to be larger with solar heating systems to compensate for bad weather and because the optimum final temperature for the solar collector is lower than a typical immersion or combustion heater. The heat transfer fluid (HTF) for the absorber may be water, but more commonly (at least in active systems) is a separate loop of fluid containing anti-freeze and a corrosion inhibitor delivers heat to the tank through a heat exchanger (commonly a coil of copper heat exchanger tubing within the tank). Copper is an important component in solar thermal heating and cooling systems because of its high heat conductivity, atmospheric and water corrosion resistance, sealing and joining by soldering and mechanical strength. Copper is used both in receivers and primary circuits (pipes and heat exchangers for water tanks).

Another lower-maintenance concept is the 'drain-back'. No anti-freeze is required; instead, all the piping is sloped to cause water to drain back to the tank. The tank is not pressurized and operates at atmospheric pressure. As soon as the pump shuts off, flow reverses and the pipes empty before freezing can occur.

Residential solar thermal installations fall into two groups: passive (sometimes called "compact") and active (sometimes called "pumped") systems. Both typically include an auxiliary energy source (electric heating element or connection to a gas or fuel oil central heating system) that is activated when

the water in the tank falls below a minimum temperature setting, ensuring that hot water is always available. The combination of solar water heating and back-up heat from a wood stove chimney can enable a hot water system to work all year round in cooler climates, without the supplemental heat requirement of a solar water heating system being met with fossil fuels or electricity.

When a solar water heating and hot-water central heating system are used together, solar heat will either be concentrated in a pre-heating tank that feeds into the tank heated by the central heating, orthe solar heat exchanger will replace the lower heating element and the upper element will remain to provide for supplemental heat. However, the primary need for central heating is at night and in winter when solar gain is lower. Therefore, solar water heating for washing and bathing is often a better application than central heating because supply and demand are better matched. In many climates, a solarhot water system can provide up to 85% of domestic hot water energy. This can include domestic non- electric concentrating solar thermal systems. In many northern European countries, combined hot waterand space heating systems (solar combi systems) are used to provide 15 to 25% of home heating energy.When combined with storage, large scale solar heating can provide 50-97% of annual heat consumptionfor district heating.

Solar water heating systems include storage tanks and solar collectors. There are two types of solar water heating systems: active, which have circulating pumps and controls, and passive, which don't.

Active Solar Water Heating Systems

There are two types of active solar water heating systems:

- **Direct circulation systems:** Pumps circulate household water through the collectors and into the home. They work well in climates where it rarely freezes.
- **Indirect circulation systems:** Pumps circulate a non-freezing, **heat-transfer fluid** through the collectors and a **heat exchanger**. This heats the water that then flows into the home. They are popular in climates prone to freezing temperatures.

Passive Solar Water Heating Systems

Passive solar water heating systems are typically less expensive than active systems, but they're usually not as efficient. However, passive systems can be more reliable and may last longer. There are two basic types of passive systems:

- **Integral collector-storage passive systems:** These consist of a storage tank covered with a transparent material to allow the sun to heat the water. Water from the tank then flows into the plumbing system. These work best in areas where temperatures rarely fall below freezing. They also work well in households with significant daytime and evening hot-water needs.
- **Thermosyphon system:** Water is heated in a collector on the roof and then flows through the plumbing system when a hot water faucet is opened. The majority of these systems have a 40 gallon capacity.

STORAGE TANKS AND SOLAR COLLECTORS

Most solar water heaters require a well-insulated storage tank. Solar storage tanks have an additional outlet and inlet connected to and from the collector. In two-tank systems, the solar water heater preheats water before it enters the conventional water heater. In one-tank systems, the back-up heater is combined with the solar storage in one tank.

Three types of solar collectors are used for residential applications:

- **Flat- plate collector:** Glazed flat-plate collectors are insulated, weatherproofed boxes that contain a dark absorber plate under one or more glass or plastic (polymer) covers. Unglazed flat-plate collectors -- typically used for **solar pool heating** -- have a dark absorber plate, made of metal or polymer, without a cover or enclosure.
- **Integral collector-storage systems:** Also known as ICS or *batch* systems, they feature one or more black tanks or tubes in an insulated, glazed box. Cold water first passes through the solar collector, which preheats the water. The water then continues on to the conventional backup water heater, providing a reliable source of hot water. They should be installed only in mild-freeze climates because the outdoor pipes could freeze in severe, cold weather.

  Evacuated solar collectors: They feature parallel rows of transparent glass tubes. Each tube contains a glass outer tube and metal absorber tube attached to a fin. The fin's coating absorbs solar energy but inhibits radiative heat loss. These collectors are used more frequently for U.S. commercial applications.

Solar water heating systems almost always require a backup system for cloudy days and times of increased demand. Conventional storage water heaters usually provide backup and may already be part of the solar system package. A backup system may also be part of the solar collector, such as rooftop tanks with thermosyphon systems. Since an integral-collector storage system already stores hot water in

addition to collecting solar heat, it may be packaged with a tankless or demand-type water heater for backup.

OBJECTIVES:

1. Website could provide customer support and guidance, answering common questions and helping customers troubleshoot any issues they may encounter with their solar heaters.
2. A solar heater website could also provide technical information about solar heaters, such as how they work, how to install them, and how to maintain them. This information can help customers make informed decisions about whether a solar heater is right for them and how to use it effectively.

COMPANY PROFILE

Smartxpose the Group which was established in 2014. We are proud of our reputation for excellence: A reputation based on our commitment to the highest ethical standards. Our home page is a reflection of our commitment to provide you quick access to pertinent information. Our client is Our Strength. We are providing 365 days assistance Our service includes Web application development, Website designing. Corporate profiles and presentations, Software Testing, E-commerce solutions, Mobile Application development, maintenance, and re-designing, Web hosting solution, Search Engine Optimization and Flash Development.

We are innovation driven customer centric organization, our love for design makes application best as always and keep ahead our customers from competition in the market. We are a design agency and an internet marketing company based in Coimbatore. We have been in the business for 4+ years and have deployed numerous projects for clients in India, US, Australia, Middle East and Much More.

COMPANY PROFILE

Company Name	**:**	**SMATXPOSE**
Year of Establishment	**:**	**2014**
Address	**:**	**Gandhipuram Road, Sithaputhur, Coimbatore.**
Manager Name	**:**	**Gopinath**
Phone No	**:**	**9976864887**
E-Mail	**:**	**smartxpose@gmail.com**

CHAPTER II
SYSTEM SPECIFICATION

HARDWARE SPECIFICATION

Personal computer with following specifications:

Processor	:	Dual Core/13
Speed	:	Above 2.30 GHz
RAM capacity	:	4 - 8 GB
Hard disk drive	:	500 GB
Key Broad	:	Samsung 108 keys
Mouse	:	Logitech Optical Mouse
Printer	:	DeskJet HP.
Motherboard	:	Intel
Cabinet	:	ATX
Monitor	:	17” Samsung

Software requirements:

Operating System	:	Microsoft Windows 10
Coding Tool	:	Microsoft Visual Studio Code
Front End	:	HTML, CSS
Web Browser	:	Google Chrome

SYSTEM DESCRIPTION

Windows 10 operating system

Microsoft Windows 10 makes its user experience and functionality more consistent between different classes of device, and addresses most of the shortcomings in the user interface that were introduced in Windows 8. Windows 10 Mobile, the successor to Windows Phone 8.1, shared some user interface elements and apps with its PC counterpart. Windows 10 supports universal apps, an expansion of the Metro-style first introduced in Windows 8. Universal apps can be designed to run across multiple Microsoft product families with nearly identical code including PCs, tablets, smartphones, embedded systems, Xbox One, Surface Hub and Mixed Reality. The Windows user interface was revised to handle transitions between a mouse-oriented interface and a touchscreen-optimized interface based on available input devices particularly on 2-in-1 PCs. Both interfaces include an updated Start menu which incorporates elements of Windows 7's traditional Start menu with the tiles of Windows 8. Windows 10 also introduced the Microsoft Edge web browser, a virtual desktop system, a window and desktop management feature called Task View, support for fingerprint and face recognition login, new security features for enterprise environments, and DirectX 12.

The Windows Runtime app ecosystem was revised into the Universal Windows Platform (UWP). These universal apps are made to run across multiple platforms and device classes, including smartphones, tablets, Xbox One consoles, and other devices compatible with Windows 10. Windows apps share code across platforms, have responsive designs that ad Google Chrome apt to the needs of the device and available inputs, can synchronize data between Windows 10 devices (including notifications, credentials, and allowing cross-platform multiplayer for games), and are distributed through the Microsoft Store (rebranded from Windows Store since September 2017). Developers can allow "cross-buys", where purchased licenses for an app apply to all of the user's compatible devices, rather than only the one they purchased on (e.g., a user purchasing an app on PC is also entitled to use the smartphone version at no extra cost).

HTML

The dictionary isa paper example of a hypertext system. So are product catalogues, contact details, technical documentation and many other product details. Information is obtained by searching through some kind of index – the product details is arranged in alphabetical order, and each word is its own index. Readers are then pointed to the page of any other related information. They can read

the information they are interested in without having to read the document sequentially from beginning to end. Hypertext systems allow for non-sequential or non-linear reading. This is the underlying idea of a hypertext system. The result is a multidimensional document that can be read by following different paths through it. In this section we will look into the application of hypertext in computer systems, mainly the World Wide Web hypertext system. The main use of hypertext is in information retrieval applications. The ease of linking different pieces (fragments) of information is the important aspect of hypertext information retrieval. The information can be of various media: it may be fragments of textual documents, structured data from databases, or list of terms and their definitions. Any of these, or a mixture thereof, can make up the contents of a hypertext document.

Therefore, in a hypertext system it is possible to:

- Link with a term that represents aspects of the content of a document;
- Connect two related documents;
- Relate a term to a fragment containing its definition and use; and
- Link two related terms.

Such a hypertext system can store a large collection of textual and multimedia documents. Such a hypertext system gives the end-user access to a large repository of knowledge for searching, browsing and retrieving.

The Hypertext Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It is often assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for its appearance.

Hypertext markup language (HTML) is a Hypertext markup language, the standard markup language for documents designed to displayed and viewed on the online during a browser also helps to create the structure of the web page. because it is a markup language, it consists of many tags. There are tags to display text, tables, ordered lists and unordered lists, etc. There are two main sections on the HTML page: head and body section. The data that describes the page also termed as metadata is inside the head section while the body section includes all the tags that are necessary to represent the visible content of the web page HTML is a platform-independent language so that can be made in use in any platform like Windows, Linux, Macintosh, etc.

There are various HTML versions. The newest version is HTML 5. it's more advanced features like Geo-location, native audio, and video support, Canvas, web socket, etc. Usually, HTML is a simple language to find out and use. A programmer can create an HTML file employing a simple text editor and execute it employing a browser.

This language provides the format for specifying simple logical structure and links in a hypertext document. As a markup language, special formatting commands are placed in the text describing how the final version should appear. These formatted documents are interpreted by a Web browser which uses the HTML code to format the page being displayed. Although most professionals use special authoring tools to write HTML documents and to manage sites, developers of e-commerce sites and applications need to know the nitty-gritty detail of HTML, and this is what you will study. HTML has had several versions over the years. "HTML 2.0" was the first standard HTML specification which was published in 1995. HTML 4.01 was a major version of HTML and itwas published in late 1999. Though HTML 4.01 version is widely used but currently we are having HTML 5 version which is an extension to HTML 4.01, and this version was published in 2012 . Thiscourse will take you through website creation using HTML5.

HTML Markup

HTML pages are created by tagging textual information with HTML markup. HTML markup consists of tags, which appear inside angled brackets < and >. An example of an HTML tag is , which causes text to appear in bold. only notes where text should begin to appear in bold, while the tag marks the end of the emboldening. Most HTML tags have a corresponding end tag, which is specified by the name of the tag preceded by the / character.

Nesting HTML Tags

Text may be both bold and italicized. This is done by using both the and tags. When doing so, it is important to remember not to overlap HTML tags Overlapping tags is a common mistake. Although Web browsers are usually smart enough to work out what is meant, it can lead toproblems. Furthermore, for an HTML page to be considered valid HTML, it must contain no overlapping tags.

Creating HTML Text using Notepad++

This section covers the creation of an HTML page. You will need a Web browser and a text editor. Use HTML: Basics 3 any text editor you wish to, but the following Activity descriptions will

use Notepad++. Notepad++ is a free Windows editor that also supports several programming languages. For example, you will notice that HTML keywords are highlighted in different colors.

1. Open your Web browser. This sections' goal is to create a Web document that can be opened with your browser.

2. Open Notepad++. It can be found by selecting Start, then All Programs, then Notepad++.

Type the following text into Notepad++: your name and the module number (CSC5003).Save this file as start.txt.

- Now load start.txt into the browser by dragging start.txt onto your browser.
- The browser should now display the text contained in start.txt. (If it does not, make surethat you have saved start.txt and that this is the file you are opening).
- Once you have displayed start.txt, return to Notepad. Add the text "Internet Commerce",and save the file again.
- Return to the Web browser and reload the document (by using either by using the Refreshor Reload toolbar buttons, or by selecting File/Open once again).
- If you are able to see the new piece of text, you have successfully used Notepad to createyour first Web page.

HTML ATTRIBUTES

We have seen few HTML tags and their usage like heading tags paragraph tag and other tags. We used them so far in their simplest form, but most of the HTML tags can also have attributes, which are extra bits of information. An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts: a name and a value:

• The name is the property you want to set. For example, the paragraph element in the example carries an attribute whose name is align, which you can use to indicate the alignment of paragraph on the page.

• The value is what you want the value of the property to be set and always put within quotations. The below example shows three possible values of align attribute: left, centre and right. Attribute names and attribute values are case-insensitive. However, the World Wide Web Consortium (W3C) recommends lowercase attributes/attribute values in their HTML 4 recommendation.

HTML – META TAGS

HTML lets you specify metadata - additional important information about a document in a variety of ways. The META elements can be used to include name/value pairs describing properties of the HTML document, such as author, expiry date, a list of keywords, document author etc. The tag is used to provide such additional information. This tag is an empty element and so does not have a closing tag but it carries information within its attributes. You can include one or more meta tags in your document based on what information you want to keep in your document but in general, meta tags do not impact physical appearance of the document so from appearance point of view, it does not matter if you include them or not.

Processing Forms

Although forms could simply be used to display information, HTML provides them in order to supply a way for the user to interact with a Web server. The most widely used method to process the data submitted through a form is to send it to server-side software typically written in a scripting language, although any programming language can be used. The figure below outlines the kind of processing that takes place.

1. The user retrieves a document containing a form from a Web server.
2. The user reads the Web page and interacts with the form it contains.
3. Submitting the form sends the form data to the server for processing.
4. The Web server passes the data to a CGI programmed.
5. The CGI software may use database information or store data in a server-side database. HTML Forms
6. The CGI software may generate a new Web page for the server to return to the user.
7. The user reads the new Web document and may interact with it.

List of HTML codes used:

- Basic HTML
- Formatting
- Forms and Input

- Frames
- Images
- Audio / Video
- Links
- Lists
- Tables
- Styles and Semantics
- Meta Info

Advantages of HTML

- HTML helps to build structure of a website and is a widely used Markup language.
- It is easy to learn. Every browser supports HTML Language.
- HTML is light weighted and fast to load.
- Storage of big files are allowed because of the application cache feature.
- Do not get to purchase any extra software because it's by default in every window.
- Loose syntax (although, being too flexible won't suit standards).
- HTML is simple to edit as being a plain text.
- It integrates easily with other languages such as JavaScript, CSS etc.
- HTML is that it is easy to code even for novice programmers.
- HTML also allows the utilization of templates, which makes designing a webpage easy.
- It is fast to download as the text is compressible.
- Very useful for beginners in the web designing field.
- HTML can be supported to each and every browser, if not supported to all the browsers.
- HTML is built on almost every website, if not all websites.
- HTML is increasingly used for data storage as like XML syntax.
- HTML has many tags and attributes which can short your line of code.

HTML FONTS

Fonts play a very important role in making a website more user friendly and increasing content readability. Font face and colour depends entirely on the computer and browser that is being used to view

your page but you can use HTML tag to add style, size, and colour to the text on your website. You can use a tag to set all of your text to the same size, face, and colour. The font tag is having three attributes called size, colour, and face to customize your fonts. To change any of the font attributes at any time within your webpage, simply use the tag. The text that follows will remain changed until you close with the tag. You can change one or all of the font attributes within one tag. Note: The font and base font tags are deprecated and it is supposed to be removed in a future version of HTML. So they should not be used rather, it's suggested to use CSS styles to manipulate your fonts. But still for learning purpose, this chapter will explain font and base font tags in detail.

HTML FORMS

HTML Forms are required, when you want to collect some data from the site visitor. For example, during user registration you would like to collect information such as name, email address, credit card, etc. A form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc. The back-end application will perform required processing on the passed data based on defined business logic inside the application. There are various form elements available like text fields, text area fields, drop-down menus, radio buttons, checkboxes, etc.

HTML FORM CONTROLS

Here are different types of form controls that you can use to collect data using HTML form:

- Text Input Controls
- Checkboxes Controls
- Radio Box Controls
- Select Box Controls
- File Select boxes
- Hidden Controls
- Clickable Buttons
- Submit and Reset Button

INTERNET AND WEB

In today's world, it is the rare person who has not had some exposure to the Internet and the World-Wide Web. According to recent research, as of the year 2004 there were only about 20% of American homes without a computer while 50% of homes had some form of high-speed internet connection1. Many of us have not only used the Internet but have also created web content in some form or other. The purpose of this chapter is to provide you with a brief introduction to and history of the Internet and the World-Wide Web as well as computer monitor technology and to give you a basic understanding of how they work.

While a thorough and technical history is beyond the scope of this work, having some idea of the history and development of the Internet and the web is helpful in understanding the design constraints imposed by the technology. For example, you may need to know why the text formatting of a web page is limited to a few sizes, basic fonts and type styles, why the resolution of a web photo is so low, why exact placement of content is difficult and why images are linked to rather than embedded in HTML documents.

As you study web design, you will come to understand and appreciate why there are so many constraints and how we can work around them receiving end, the clicks and spaces could be "decoded" by a trained operator into an intelligible message.

When computers were first introduced, it soon became apparent that the ability to share information between them was a valuable and desirable capability. Initially, if someone wanted to share data from one computer with another, the information from the first computer had to be printed out in some manner and manually entered into the second computer. With the advent of paper punch cards, and later, magnetic and optical storage devices, the process of data transfer became easier and fewer errors occurred than when done manually.

But if data could be exchanged directly between computers tremendous increases in the transfer time and operator efficiency could be realized. To facilitate this information exchange, simple computer networks, sometimes called "peer-to-peer" networks were developed.Each workstation can allow or restrict the sharing of specific files, folders and devices such as printers with other workstations.

Where more than two computers are connected in this way, the use of a device called a "hub or switch" facilitates the connections among the various workstations. The computers do not need to be in the same room or even the same city, they can be connected remotely.It must be said at the outset that

the history of the Internet and the web is not exactly cut and dried. There are many versions of the history and many different people who are given credit for the development and continuation of these technologies. The information presented here is a compilation of many of these stories gleaned from various sources.

NETWORKS

A network in its simplest form is just a series of interconnected people, operations, broadcast stations or computers. One example of a network is the old telegraph system that you may remember seeing in a western movie The telegraph enabled communication between two or more remote locations by using simple binary code (Morse code). A message was first converted from spoken or written language onto a series of clicks with short or long spaces between them (encoding). For example S-O-S, the familiar distress signal is encoded as One disadvantage to this type of network is that when a file or other resource is being shared, it tends to slow down the host computer because it may be trying to accomplish other tasks including execution of its own programs at the same time. It also takes up storage space that might be better used for other purposes.

Over time, these simple networks gave way to more sophisticated ones which included network printers and file servers. These "client/server" networks can be found in homes, business and educational institutions throughout the world. Rather than all computers being able to access data from all the others on the network, in the client/server topology, a "file server" houses the data files and the individual "client" computers can access the data (documents, images, databases, etc.) from the server as needed. This frees the client machines from having to house shared data and allows them to run programs and processes the data much more quickly.

INTERNET

These networks connect to each other through various means including fibre optic cable, satellite, telephone cable and microwave. The Internet has revolutionized the computer and communication world. Its predecessors, radio, television, telegraph, telephone and computers helped set the stage for the integration of capabilities that has become the Internet. The first recorded description of interactions that could be accomplished through networking was a series of memos written by J.C.R. Lickliter then working at MIT.

In 1962 he envisioned a global interconnection of computers through which data and programs could be quickly accessed from any site. Lickliter was the first head of the computer program at the

Advanced Research Projects Agency (ARPA)2 . While there he convinced his success Computer PC Computer Unix Computer Network Printer File Server Mail Server Web Server Switch Figure 1.3 Client-Server Network Intro to the Internet 5 and Web Page Design sores of the importance of his networking concept and they eventually worked to help develop the Internet.

Basic HTML Tags and Description

Tag	Description
<!DOCTYPE>	Defines the document type
<html>	Defines an HTML document
<head>	Defines information about the document
<title>	Defines a title for the document
<body>	Defines the document's body
<h1> to <h6>	Defines HTML headings
<p>	Defines a paragraph
** **	Inserts a single line break
<hr>	Defines a thematic change in the content
<!--...-->	Defines a comment
<abbr>	Defines an abbreviation or an acronym
<address>	Defines contact information for the author/owner of a document/article
<b>	Defines bold text
<bdi>	Isolates a part of text that might be formatted in a different direction from other text outside it
<bdo>	Overrides the current text direction
<big>	Not supported in HTML5. Use CSS instead. Defines big text
<blockquote>	Defines a section that is quoted from another source
** **	Not supported in HTML5. Use CSS instead. Defines centered text
<cite>	Defines the title of a work
<code>	Defines a piece of computer code

<del>	Defines text that has been deleted from a Document
<dfn>	Represents the defining instance of a term
****	Defines emphasized text
<font>	Not supported in HTML5. Use CSS instead. Defines font, color, and size for text
<i>	Defines a part of text in an alternate voice or mood
<ins>	Defines a text that has been inserted into a document
<kbd>	Defines keyboard input
<mark>	Defines marked/highlighted text
<meter>	Defines a scalar measurement within a known range (a gauge)
<pre>	Defines preformatted text
<progress>	Represents the progress of a task
<q>	Defines a short quotation
<rp>	Defines what to show in browsers that do not support ruby annotations
<rt>	Defines an explanation/pronunciation of characters (for East Asian typography)
<ruby>	Defines a ruby annotation (for East Asian typography)
<s>	Defines text that is no longer correct
<samp>	Defines sample output from a computer program
<small>	Defines smaller text
<strike>	Not supported in HTML5. Use <del> or <s> instead. Defines strikethrough text
****	Defines important text
<sub>	Defines subscripted text
<sup>	Defines superscripted text
<template>	Defines a template

<time>	Defines a date/time
<tt>	Not supported in HTML5. Use CSS instead. Defines teletype text
<u>	Defines text that should be stylistically different from normal text
<var>	Defines a variable
<wbr>	Defines a possible line-break
<form>	Defines an HTML form for user input
<input>	Defines an input control
<textarea>	Defines a multiline input control (text area)
<button>	Defines a clickable button
<select>	Defines a drop-down list
<optgroup>	Defines a group of related options in a drop-downList
<option>	Defines an option in a drop-down list
<label>	Defines a label for an <input> element
<fieldset>	Groups related elements in a form
<legend>	Defines a caption for a <fieldset> element
<datalist>	Specifies a list of pre-defined options for input Controls
<output>	Defines the result of a calculation
Frames	
<frame>	Not supported in HTML5. Defines a window (a frame) in a frameset
<frameset>	Not supported in HTML5.

	Defines a set of frames
<noframes>	Not supported in HTML5. Defines an alternate content for users that do not support frames
<iframe>	Defines an inline frame
Images	

<img>	Defines an image
<map>	Defines a client-side image-map
<area>	Defines an area inside an image-map
<canvas>	Used to draw graphics, on the fly, via scripting(usually JavaScript)
<figcaption>	Defines a caption for a <figure> element
<figure>	Specifies self-contained content
<picture>	Defines a container for multiple image resources
<svg>	Defines a container for SVG graphics
Audio/Video	
<audio>	Defines sound content
<source>	Defines multiple media resources for media elements (<video>, <audio> and <picture>)
<track>	Defines text tracks for media elements (<video> and <audio>)
<video>	Defines a video or movie
Links	
<a>	Defines a hyperlink
<link>	Defines the relationship between a document and an external resource (most used to link to style sheets)
<nav>	Defines navigation links
Lists	
** **	Defines an unordered list
** **	Defines an ordered list
** **	Defines a list item
<dir>	Not supported in HTML5. Use instead. Defines a directory list
<dl>	Defines a description list
<dt>	Defines a term/name in a description list
<dd>	Defines a description of a term/name in a description list
<menu>	Defines a list/menu of commands

<menuitem>	Defines a command/menu item that the user can invoke from a popup menu
Styles and Semantic	
<style>	Defines style information for a document
** **	Defines a section in a document
****	Defines a section in a document
<header>	Defines a header for a document or section
<footer>	Defines a footer for a document or section
<main>	Specifies the main content of a document
<section>	Defines a section in a document
<article>	Defines an article
<aside>	Defines content aside from the page content
<details>	Defines additional details that the user can view or hide
<dialog>	Defines a dialog box or window
<summary>	Defines a visible heading for a <details> element
<data>	Links the given content with a machine-readable Translation
Meta Info	
<head>	Defines information about the document
<meta>	Defines metadata about an HTML document
<base>	Specifies the base URL/target for all relative URLs in a document
<basefont>	Not supported in HTML5. Use CSS instead. Specifies a default color, size, and font for all text in a document

CSS

CSS stands for Cascading Style Sheets. In short, CSS is a design language that makes a website look more appealing than just plain or uninspiring pieces of text. Whereas HTML largely determines textual content, CSS determines visual structure, layout, and aesthetics. HTML is a markup language, and CSS is a style sheet language. CSS handles the look and feel part of a web page. Using CSS, you

can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, etc.

The following are the advantages of CSS**:**

- CSS saves time − You can write CSS once and then reuse the same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.
- Easy maintenance − To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
- Global web standards − Now HTML attributes are being deprecated and it is being recommended to use CSS. So, it's a good idea to start using CSS in all the HTML pages to make them compatible with future browsers.
- Platform Independence − The Script offer consistent platform independence and can support latest browsers as well.

ADVANTAGES OF STYLE SHEET

Multiple Styles - A single document can be presented in multiple styles by using multiple style sheets.

1. Re-styling - The use of style sheets (which are separate to the HTML files) allows the quick re- styling of any document, without modifying the original HTML.

2. Document maintenance - The ability to re-style many documents allows usto easily make changes to the appearance of many Web pages without separately editing each one.

3. Consistency - Style sheets guarantee consistency throughout website.

4. Optimal file size - The smaller the files the faster the download. Using style sheets can help minimize file sizes, since, for example, every < font > tag, is defined in one place in a style sheet, rather than in multiple places in the HTML file.

Style and structure – When first developed, HTML was only concerned with document markup and not with the document's formatting. This eventually changed, with more and more functionality being added to HTML to allow for formatting. With the introduction of style sheets, the HTML documentis again concerned only with structural document markup — all formatting is now placed in the style sheet. Minimum Hardware and Software requirements.Below is a list of the minimum Hardware and Software requirements to access the basic website content.

CHAPTER III

SYSTEM ANALYSIS

EXISTING SYSTEM

There are several potential drawbacks or limitations of existing website systems, including:

Many website systems rely on third-party providers for hosting, maintenance, or other services. This can create a dependence on these providers, which can be a risk if they experience downtime or other issues.

Website systems that are poorly optimized or hosted on slow servers can lead to slow loading times and poor performance. This can lead to a negative user experience and impact the overall success of the website.

Many website systems may not offer robust security features or may be vulnerable to security breaches. This can be a concern for businesses that need to protect sensitive information or customer data.

PROPOSED SYSTEM

The proposed system for the website project is a dynamic website that is designed to provide a more engaging user experience. The new website will have the following features.

Responsive Design: The website will be designed to be mobile-friendly and responsive to different screen sizes.

Content Management System(CMS): A CMS will be integrated into the website to allow easy content updates and management by the website owners.

User Registration and Login: The website will have a registration and login system that will allow users to create accounts and access personalized content and features.

E-commerce Functionality: The website will have an e-commerce functionality that will allow users to purchase products/services directly from the site.

Social Media Integration: Social media integration will be implemented to allow users to share content from the website on their social media accounts.

Search Functionality: The website will have a search functionality to allow users to easily find the content they are looking for.

Chatbot: A chatbot will be integrated into the website to provide quick assistance and support to users.

Analytics and Reporting: Analytics and reporting tools will be integrated into the website to track user behaviour and provide insights to improve the website's performance.

The proposed system will be built using modern web development technologies such as React, Node.js, and MongoDB. The website will be hosted on a dedicated server to ensure optimal performance and scalability.

FEATURES

MARKUP

HTML5 introduces elements and attributes that reflect typical usage on modern websites. Some of them are semantic replacements for common uses of generic block ( ) and inline () elements, for example <nav> (website navigation block), <footer> (usually referring to bottom of web page or to last lines of HTML code), or <audio>and <video> insteadof <object>. Some deprecated elements from HTML 4.01 have been dropped, including purely presentational elements such as <font> and , whose effects have long been superseded by the more capable Cascading Style Sheets. There is also a renewed emphasis on the importance of DOM scripting (e.g., JavaScript) in Web behavior. The HTML5 syntax is no longer based on SGML despite the similarity of its markup. It has, however, been designed to be backward compatible with common parsing of older versions of HTML. It comes with a new introductory line that looks like an SGML document type declaration, <!DOCTYPE html>, which triggers the standards-compliant rendering mode. Since 5 January 2009, HTML5 also includes *Web Forms 2.0*, a previously separate WHATWG specification.

NEW API'S

In addition to specifying markup, HTML5 specifies scripting application programming interfaces (APIs) that can be used with JavaScript. Existing document object model(DOM) interfaces areextended and de facto features documented. There are also new APIs, such as:The canvaselement for immediate mode 2D drawing. See Canvas 2D API Specification 1.0 specification.

- Timed media playback.
- Offline Web Applications

- Editable content
- Drag-and-drop
- Cross-document messaging
- Browser history management
- MIME type and protocol handler registration
- Micro data
- Web Storage, a key-value pair storage framework that provides behavior similar to cookies but with larger storage capacity and improved API.

Not all of the above technologies are included in the W3C HTML5 specification, though they are in the WHATWG HTML specification. Some related technologies, which are not part of either the W3C HTML5 or the WHATWG HTML specification, are as follows. The W3C publishes specifications for these separately:

- Web SQL Database, a local SQL Database (no longer maintained).
- The Indexed Database API, an indexed hierarchical key-value store (formerly WebSimpleDB).
- HTML5 File API, handles file uploads and file manipulation.
- Directories and System, an API intended to satisfy client-side-storage use cases not well served by databases.
- File Writer, an API for writing to files from web applications.
- Web Audio API, a high-level JavaScript API for processing and synthesizing audio in web applications.
- Class List API.

HTML5 cannot provide animation within web pages. Additional JavaScript or CSS3 functionality is necessary for animating HTML elements. Animation is also possible using JavaScript and HTML 4, and within SVG elements through SMIL, although browser support of the latter remains uneven as of 2011.

XHTML5 (XML-serialized HTML5)

XML documents must be served with an XML Internet media type (often called "MIME type") such as application/xhtml+xml or application/xml, and must conform to strict, well-formed syntax of

XML. XHTML5 is simply XML-serialized HTML5 data (e.g. not having any unclosed tags), sent with one of XML media types. HTML that has been written to conform to both the HTML and XHTML specifications – and which will therefore produce the same DOM tree whether parsed as HTML or XML – is called polyglot markup.

ERROR HANDLING

HTML5 is designed so that old browsers can safely ignore new HTML5 constructs. In contrast to HTML 4.01, the HTML5 specification gives detailed rules for flexing and parsing, with the intent that compliant browsers will produce the same results when parsing incorrect syntax Although HTML5 now defines a consistent behavior for "tag soup" documents, those documents are not regarded as conforming to the HTML5 standard.

POPULARITY

According to a report released on 30 September 2011, 34 of the world's top 100 Web sites were using HTML5 – the adoption led by search engines and social networks. Another report released in August 2013 has shown that 153 of the Fortune 500 U.S. companies implemented HTML5 on their corporate websites. As of 2014, HTML 5 is at least partially supported by most popular layout engines.

ALGORITHM

Software design is both process and model. The design process is a set of iterative steps that enable the designer to describe all aspects of the software to be built. A set of fundamental design concepts have been evaluated each of which provides the software designer with a foundation from which more sophisticated design methods can be applied. The following design concepts can be regarded as criteria for an efficient system.

ABSTRACTION

Considering a modular solution to a problem, many levels of abstraction can be posed. At lower level of abstraction, a more procedural orientation is taken. Problem oriented terminology in an effort to state in a manner that can be directly implemented.

REFINEMENT

The architecture of a program is developed by successively refining levels of procedural detail. The process of program refinement is analogous to the process of refinement and partitioning that is used

during required analysis. Refinement is the process of elaboration. Refinement causes the designer to elaborate on the original statement, providing more and more detail as each successive refinement occurs.

MODULAR

Modularity is a single attribute of software that allows the program to be intellectually manageable. The software is divided into separately named and addressable components, called modules which are integrated to satisfy problem required.

SOFTWARE ARCHITECTURE

Software architecture is a hierarchical structure of the program components or modular the manner in which these components interact and the structure of the data used by the components. Software design can be aimed to drive on architectural rendering of a system. A set OS architectural pattern enables a software engineer to reuse design-level concepts.

CONTROL HIERARCHY

Control hierarchy also called program structure represents the organization of program components or modules and implies a hierarchy of control. The tree-like diagram is the most common diagram used to represent control hierarchy.

STRUCTURAL PARTITIONING

The program structure can be partitioned both horizontally and vertically partitioning defines separate branches of the modular hierarchy for each major program function. Vertical partitioning or factoring suggests that control or decision-making the work should be distributed top-down in the program architecture.

DATA STRUCTURE

Data structure is a representation of a logical relationship among individual elements of data. Data structure dictates the organization methods of access, degree of associatively, and processing alternatives for information. It can be represented at different levels of abstraction.

SOFTWARE PROCEDURE

Software procedure focuses on the processing details of each machine individually. Procedure must provide a precise specification of processing, including sequence of events, exact decision points, repetitive operations and data organization or structure.

INFORMATION HIDING

Modules should be specified and designed so that information contained within a module is inaccessible to other modules that have no need for such information. Hiding defines and enforces access constraints to both procedural detail within a module and any local data structure used by the module.

EXHAUSTIVE EXPLANATION

The HTML 5's heading outline algorithm allows to create and maintain valid heading outlines very easily by using the HTML 5 structural elements like <main>, <article> and <aside>.

In traditional HTML, you have to choose the correct heading level rigorously depending on the current context. In HTML 5, using structural elements you can start with whatever heading level you want. This makes including external content very easy, as you do not have to worry about the content's heading levels anymore (speaking about it: another way to include external content is by using an iframe, see External Content in iFrames).

The HTML5 specification introduced several semantic sectioning elements to help organize the structure of documents. Semantic sectioning elements are specifically designed to communicate structural meaning to browsers and other technologies interpreting the document on behalf of users, such as screen readers and voice assistants.Semantic sectioning elements clarify the larger-scale structures within a document. They are intended to enhance the limited semantics of earlier versions of HTML, which included only the tag as a generic mechanism for grouping related content. For example, does not suggest any meaning about its content to a browser; only ahuman reading the HTML source can divine the meaning of a class like navigation. New semantic elements were added to HTML5 to improve and clarify the sectioning of websites into meaningful areasof content. It is important for developers to use these semantic elements in line with their intended purposes. Many accessibility tools as well as reader views provided by some browsers rely on

semantic sectioning elements. So don't swap out an existing tangle of elements for a bunch of <section> elements.

SECTION ELEMENTS IN HTML5

- **HTML Navigational Element** defines a section that contains navigation links that appear often on a site. You can have primary and secondary menus, but you cannot nest a element inside another element.
- **HTML Article Element** (<article>) defines a piece of self-contained content. It does not refer to the main content alone and can be used for comments and widgets.
- **HTML Section Element** (<section>) defines a section of a document to indicate a related grouping of semantic meaning. It makes sense to use the section element to provide extra context for the parent element.
- **HTML Aside Element** (<aside>) defines a section that, though related to the main element, doesn't belong to the main flow, like an explanation box or an advertisement. The aside element has its own outline, but doesn't belong to the main one.

SEMANTIC ELEMENTS IN HTML5

- **HTML Body Element** (<body>) defines all the content of a document. It contains all the content and HTML tags.
- **HTML Header Element** (<header>) defines a page area that typically contains a logo, title, and navigation. The header can also be used inside other semantic elements such as <article> or <section>. A section header might contain the section's heading, author name, etc.<article><section><aside> and <nav> can have their own<header>. Despite its name, the header is not necessarily positioned at the beginning of a page or section.
- **HTML Footer Element** (<footer>) defines a page footer, which typically contains copyright or legal notices and sometimes some links. In the context of a section, a footer might contain the sectioned content's publication date, license information, etc. <article>, <section>, <aside>, and <nav> can have their own <footer>. Despite its name, the footer is not necessarily positioned at the end of a page or section.

CHAPTER IV

WEB TERMINOLOGIES

NETWORK PROTOCOLS

A network protocol is a standard way of regulating data transmission between computers. Just as diplomats adhere to protocols — rules of behavior — when in foreign lands, network communications do the same. They have to obey agreed rules if they are to communicate and 'get on with each other'. After many years of both public and private research and development, two network protocols are now dominant:

TCP (Transaction Control Protocol) and IP (Internet Protocol), together known as TCP/IP. These were actually unlikely protocols to be so widely accepted, as faster, standardized protocols had been agreed upon, but none had the same robustness and extensibility as TCP/IP.) Very often protocols were implemented without any formal acceptance and, because they worked most of the time, they became standards by default. Although TCP/IP is an accepted, de facto standard, work on Internet protocols continue in order to improve communication quality and support the continued growth of the Internet.

There is no dictating authority for the Internet. Without a controlling authority, interim proposals about protocol changes are made by groups of interested individuals and then opened up for discussion. Documents containing the various proposed standards are published as Requests For Comment documents (RFCs).

WEB APPLICATION (Webapp)

A web application (or webapp), unlike standalone application, runs over the Internet. Examples of webapps are google, amazon, ebay, facebook and the UCT website. A webapp is typically a 3-tier (or multi-tier) client-server database application run over the Internet and it comprises five components:

- HTTP Server: E.g., Apache HTTP Server, Apache Tomcat Server, Microsoft Internet Information Server (IIS), nginx, Google Web Server (GWS), and others. You will learn how to install Apache HTTP and Tomcat web servers in the next chapter.
- HTTP Client (or Web Browser): E.g., Internet Explorer (MSIE), FireFox, Chrome, Safari, and others.

- Database: E.g., Open-source MySQL, MariaDB, Apache Derby, mSQL, SQLite, PostgreSQL, OpenOffice's Base; Commercial Oracle, IBM DB2, SAP SyBase, MS SQL Server, MS Access; and others. You will learn how to install MySQL in the next chapter.
- Client-Side Programs: could be written in HTML Form, JavaScript, VBScript, Flash, and others. You will learn how to writer client-side programs using HTML and JavaScript in this course.
- Server-Side Programs: could be written in Java Servlet/JSP, ASP, PHP, Perl, Python, CGI, and others.

UNIFORM RESOURCE LOCATOR (URL)

An URL is needed to locate any resources on the Web. It is an address format that specifies how and where to find a document. The general format is as follows, where the various items in italics must be substituted with part of a real URL, or omitted altogether. http://machine_name:port/path/file_name.file_extension machine_name is either an IP address, for example 137.234.33.89, or a Fully Qualified Domain Name (also known as a DNS name, because Domain Name Servers map between Domain Names and IP addresses), for example, www.apple.com [http://www.apple.com].

In the machine name http is the protocol identifier, while www.apple.com is the resource name. port is the TCP port to connect to; this is an entry point to software on the server; an optional part of a URL. path is a relative file path from the server's document root; the server will start looking for a file in a specific directory and paths are relative to this file_name is the name of the file to be browsed, e.g. welcome file_extension is one of a number of suffixes which, by convention and operating system setup, indicate the type of data contained within the file, e.g. htm,html,txt.Forexample,intheURLbelow,http://www.apple.com/retail/business/jointventure/terms.html ‘terms.html’ is a file with the html extension.

CLIENT-SERVER COMPUTING MODEL

A software partitioning paradigm in which a distributed system is split between one or more server tasks which accept requests, according to some protocol, from (distributed) client tasks, asking for information or action. There may be either one centralized server or several distributed ones. This model allows clients and servers to be placed independently on nodes in a network. Client-server computing is mainly about the client computer possessing its own computing power. In the days of mainframes, all the processing power took place on central computers.

The client 'terminals' were little more than a television that could send and receive characters. When microprocessors became available, it was possible to make the terminals more powerful so that they could handle some of the processing. Over time this has meant that mainframes have been replaced by smaller server machines and terminals have been replaced by more powerful client workstations. The client-server model provides a good division of processing power, since the server primarily provides information to the client, which is responsible for interpreting and displaying it. This means that servers do not have to be powerful machines, allowing more people to become service provider.

In the context of the Web, users run client programs (i.e. Web browsers) which provide the following functionality:

- They allow the user to send a request for information to the server.
- They format the request so that the server can understand it.
- They format the response from the server in a way that the user can read it. Server programs carryout the following:
- They receive a request from a client and process the request.
- They respond by sending the requested information back to the client. In summary, the typical functionality of a client-server model is:
- A user, via a web browser (HTTP client), issues a URL request to an HTTP server to start a webapp.
- A client-side program (such as an HTML form) is loaded into client's browser.
- The user fills up the query criteria in the form.
- The client-side program sends the query parameters to a server-side program.
- The server-side program receives the query parameters, queries the database and returns the query result to the client.
- The client-side program displays the query result on the browser.
- The process repeats.

CHAPTER V

SYSTEM DESIGN AND DEVELOPMENT

INPUT DESIGN

The input design is the process of entering data to the system. The input design goal is to enter to the computer as accurate as possible. Here inputs are designed effectively so that errors made by the operations are minimized.

The inputs to the system have been designed in such a way that manual forms and the inputs are coordinated where the data elements are common to the source document and to the input. The input is acceptable and understandable by the users who are using it.

Input design is the process of converting user-originated inputs to a computer-based format input data are collected and organized into group of similar data. Once identified, appropriate input media are selected for processing.

The input design also determines the user to interact efficiently with the system. Input design is a part of overall system design that requires special attention because it is the common source for data processing error. The goal of designing input data is to make entry easy and free from errors.

Input design is a part of overall system design. The main objective during the input design is as given below:

- To produce a cost-effective method of input.
- To achieve the highest possible level of accuracy.
- To ensure that the input is acceptable and understood by the user.

INPUT STAGES

The main input stages can be listed as below:

- Data recording
- Data transcription
- Data conversion
- Data verification
- Data control
- Data transmission

- Data validation
- Data correction

INPUT TYPES

It is necessary to determine the various types of inputs. Inputs can be categorized as follows:

- External inputs, which are prime inputs for the system.
- Internal inputs, which are user communications with the system.
- Operational, which are computer department's communications to the system? Interactive, which are inputs entered during a dialogue.

INPUT MEDIA

At this stage choice has to be made about the input media. To conclude about the input media consideration has to be given to;

- Type of input
- Flexibility of format
- Speed
- Accuracy
- Verification methods
- Rejection rates
- Ease of correction
- Storage and handling requirements
- Security
- Easy to use
- Portability

Keeping in view the above description of the input types and input media, it can be said that most of the inputs are of the form of internal and interactive. As input data is to be the directly keyed in by the user, the keyboard can be considered to be the most suitable input device.

OUTPUT DESIGN

Output design is the process of converting computer data into hard copy that is understood by all. The various outputs have been designed in such a way that they represent the same format that the office and management used to.

Computer output is the most important and direct source of information to the user. Efficient, intelligible output design should improve the systems relationships with the user and help in decision making. A major form of output is the hardcopy from the printer. Output requirements are designed during system analysis. A good starting point for the output design is the Data Flow Diagram (DFD). Human factors educe issues for design involves addressing internal controls to ensure readability.

Outputs from computer systems are required primarily to communicate the results of processing to users. They are also used to provide a permanent copy of the results for later consultation. The various types of outputs in general are:

- External Outputs, whose destination is outside the organization.
- Internal Outputs whose destination is within organization and they are the
- User's main interface with the computer.
- Operational outputs whose use is purely within the computer department.
- Interface outputs, which involve the user in communicating directly.

OUTPUT DEFINITION

The outputs should be defined in terms of the following points:

- Type of the output
- Content of the output
- Format of the output
- Location of the output
- Frequency of the output
- Volume of the output
- Sequence of the output

It is not always desirable to print or display data as it is held on a computer. It should be decided as which form of the output is the most suitable.

For Example,

- Will decimal points need to be inserted?
- Should leading zeros be suppressed.

OUTPUT MEDIA

In the next stage it is to be decided that which medium is the most appropriate for the output. The main considerations when deciding about the output media are:

- The suitability for the device to the particular application.
- The need for a hard copy.
- The response time required.
- The location of the users
- The software and hardware available.

Keeping in view the above description the project is to have outputs mainly coming under the category of internal outputs.

The outputs were needed to be generated as a hot copy and as well as queries to be viewed on the screen. Keeping in view these outputs, the format for the output is taken from the outputs, which are currently being obtained after manual processing. The standard printer is to be used as output media for hard copies.

CHAPTER VI

CODINGS AND TEMPLATES

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="description" content="Responsive-Website-Templates">
<meta name="author" content="">
<title>V-Guard Electrical Appliances</title>
<link rel="favicon" href="assets/images/favicon.png">
<linkrel="stylesheet"media="screen"href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">
<link rel="stylesheet" href="assets/css/bootstrap.min.css">
<link rel="stylesheet" href="assets/css/font-awesome.min.css">
<link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">
<link rel="stylesheet" href="assets/css/style.css">
<link rel='stylesheet' id='camera-css' href='assets/css/camera.css' type='text/css' media='all'>
</head>
<body>
<!-- Fixed navbar -->
<div class="navbar navbar-inverse">
<div class="container">
<div class="navbar-header">
<!-- Button for smallest screens -->
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"><span class="icon-bar"></span><span class="icon-bar"></span><span class="icon-bar"></span></button>
<a class="navbar-brand" href="index.html">
```

```
<img src="assets/images/logo.png" alt="V-Guard"></a>
</div>
<div class="navbar-collapse collapse">
<ul class="nav navbar-nav pull-right mainNav">
<li class="active"><a href="index.html">Home</a></li>
<li><a href="about.html">About</a></li>
<li><a href="services.html">Products</a></li>
<li><a href="contact.html">Contact</a></li>
</ul>
</div>
<!--/.nav-collapse -->
</div>
</div>
<!-- /.navbar -->
<!-- Header -->
<header id="head">
<div class="container">
<div class="fluid_container">
<div class="camera_wrap camera_emboss pattern_1" id="camera_wrap_4">
<div data-thumb="" data-src="assets/images/slides/img1.jpeg">
</div>
<div data-thumb="" data-src="assets/images/slides/img2.jpeg">
</div>
<div data-thumb="" data-src="assets/images/slides/img3.jpeg">
</div>
</div><!-- #camera_wrap_3 -->
</div><!-- .fluid_container -->
</div>
</header>
```

```
<!-- /Header -->
<footer id="footer">
<div class="container">
<div class="social text-center">
<a href="#"><i class="fa fa-twitter"></i></a>
<a href="#"><i class="fa fa-facebook"></i></a>
<a href="#"><i class="fa fa-dribbble"></i></a>
<a href="#"><i class="fa fa-flickr"></i></a>
<a href="#"><i class="fa fa-github"></i></a>
</div>
<div class="clear"></div>
<!--CLEAR FLOATS-->
</div>
<div class="footer2">
<div class="container">
<div class="row">
<div class="col-md-6 panel">
<div class="panel-body">
</div>
</div>
<div class="col-md-6 panel">
<div class="panel-body">
<p class="text-right">
</p>
</div>
</div>
</div>
<!-- /row of panels -->
```

```
</div>
</div>
</footer>
<!-- JavaScript libs are placed at the end of the document so the pages load faster -->
<script src="assets/js/modernizr-latest.js"></script>
<script type='text/javascript' src='assets/js/jquery.min.js'></script>
<script type='text/javascript' src='assets/js/fancybox/jquery.fancybox.pack.js'></script>
<script type='text/javascript' src='assets/js/jquery.mobile.customized.min.js'></script>
<script type='text/javascript' src='assets/js/jquery.easing.1.3.js'></script>
<script type='text/javascript' src='assets/js/camera.min.js'></script>
<script src="assets/js/bootstrap.min.js"></script>
<script src="assets/js/custom.js"></script>
<script>
jQuery(function(){
jQuery('#camera_wrap_4').camera({
height: '600',
loader: 'bar',
pagination: false,
thumbnails: false,
hover: false,
opacityOnGrid: false,
imagePath: 'assets/images/'
});
});
</script>
</body>
</html>
<!DOCTYPE html>
```

```
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="description" content="Responsive-Website-Templates">
<meta name="author" content="">
<title>V-Guard Electrical Appliances</title>
<link rel="favicon" href="assets/images/favicon.png">
<link rel="stylesheet" media="screen" href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">
<link rel="stylesheet" href="assets/css/bootstrap.min.css">
<link rel="stylesheet" href="assets/css/font-awesome.min.css">
<!-- Custom styles for our template -->
<link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">
<link rel="stylesheet" href="assets/css/style.css">
<style type="text/css">
.newStyle1 {
font-weight: bold;
color: #000000;
font-size: 16px;
text-align: justify;
}
.newStyle2 {
font-size: 20px;
font-weight: bold;
text-decoration: underline;
}
</style>
</head>
```

```
<body>
<!-- Fixed navbar -->
<div class="navbar navbar-inverse">
<div class="container">
<div class="navbar-header">
<!-- Button for smallest screens -->
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"><span class="icon-bar"></span><span class="icon-bar"></span><span class="icon-bar"></span></button>
<a class="navbar-brand" href="index.html">
<img src="assets/images/logo.png" alt="V-Guard"></a>
</div>
<div class="navbar-collapse collapse">
<ul class="nav navbar-nav pull-right mainNav">
<li><a href="index.html">Home</a></li>
<li class="active"><a href="about.html">About</a></li>
<li><a href="services.html">Products</a></li>
<li><a href="contact.html">Contact</a></li>
</ul>
</div>
<!--/.nav-collapse -->
</div>
</div>
<!-- /.navbar -->
<header id="head" class="secondary">
<div class="container">
<div class="row">
<div class="col-sm-8">
<h1>About us</h1>
```

```
</div>
</div>
</div>
</header>
<!-- container -->
<section class="container">
<div class="row">
<!-- main content -->
<section class="col-sm-12 maincontent">
<h3 class="newStyle2">SMARTXPOSE</h3>
<p class="newStyle1">
<img src="assets/images/about.jpg" alt="" class="img-rounded pull-right" width="300">
Welcome to Smartxpose the Group which was established in 2014. We are proud of our reputation for excellence: A reputation based on our commitment to the highest ethical standards. Our home page is a reflection of our commitment to provide you quick access to pertinent information. Our client is Our Strength . We are providing 365 days assistance Our service includes Web application development, Website designing, Corporate profiles and presentations, Software Testing , E-commerce solutions, Mobile Application development, maintenance, and re-designing, Web hosting solution, Search Engine Optimization and Flash Development.
</p>
<p class="newStyle1">We are innovation driven customer centric organization, our love for design makes application best as always and keep ahead our customers from competition in the market. We are a design agency and an internet marketing company based in Coimbatore. We have been in the business for 4+ years and have deployed numerous projects for clients in India,US,Australia,Middle East and Much More.</p>
</section>
<!-- /main -->
<!-- Sidebar -->
<!-- /Sidebar -->
```

```
</div>
</section>
<!-- /container -->
<footer id="footer">
<div class="container">
<div class="social text-center">
<a href="#"><i class="fa fa-twitter"></i></a>
<a href="#"><i class="fa fa-facebook"></i></a>
<a href="#"><i class="fa fa-dribbble"></i></a>
<a href="#"><i class="fa fa-flickr"></i></a>
<a href="#"><i class="fa fa-github"></i></a>
</div>
<div class="clear"></div>
<!--CLEAR FLOATS-->
</div>
<div class="footer2">
<div class="container">
<div class="row">
<div class="col-md-6 panel">
<div class="panel-body">
</div>
</div>
<div class="col-md-6 panel">
<div class="panel-body">
<p class="text-right">
</p>
</div>
</div>
```

```
</div>
<!-- /row of panels -->
</div>
</div>
</footer>

<!-- JavaScript libs are placed at the end of the document so the pages load faster -->
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>
<script src="http://netdna.bootstrapcdn.com/bootstrap/3.0.0/js/bootstrap.min.js"></script>
<script src="assets/js/custom.js"></script>
</body>
</html>
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="description" content="Responsive-Website-Templates">
<meta name="author" content="">
<title>V-Guard Electrical Appliances</title>
<link rel="favicon" href="assets/images/favicon.png">
<linkrel="stylesheet"media="screen"href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">
<link rel="stylesheet" href="assets/css/bootstrap.min.css">
<link rel="stylesheet" href="assets/css/font-awesome.min.css">
<!-- Custom styles for our template -->
<link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">
<link rel="stylesheet" href="assets/css/style.css">
</head>
```

```
<body>
<!-- Fixed navbar -->
<div class="navbar navbar-inverse">
<div class="container">
<div class="navbar-header">
<!-- Button for smallest screens -->
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"><span class="icon-bar"></span><span class="icon-bar"></span><span class="icon-bar"></span></button>
<a class="navbar-brand" href="index.html">
<img src="assets/images/logo.png" alt=""></a>
</div>
<div class="navbar-collapse collapse">
<ul class="nav navbar-nav pull-right mainNav">
<li><a href="index.html">Home</a></li>
<li><a href="about.html">About</a></li>
<li class="active"><a href="services.html">Products</a></li>
<li><a href="contact.html">Contact</a></li>
</ul>
</div>
<!--/.nav-collapse -->
</div>
</div>
<!-- /.navbar -->
<header id="head" class="secondary">
<div class="container">
<div class="row">
<div class="col-sm-8">
<h1>Products</h1>
```

```
</div>
</div>
</div>
</header>

<!-- /container -->
<section class="container">
<div class="row">
<div class="col-md-12">
<h3><span>Solar Water Heaters</span></h3>
<div class="carousel slide" id="myCarousel">
<div class="carousel-inner">
<div class="item active">
<ul class="thumbnails">
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/win-hot-aux-pro-bg.jpg" alt=""></a> <!--1-
->
</div>
<div class="caption">
<h4>WIN-HOT(AUX)-PRO SERIES </h4>
<p></p>
<a class="btn btn-mini" href="win-hot-aux-pro-series-vguard-solar-water-heater.html">
View Details &raquo;</a>
</div>
</li>

<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/win-hot-eco-pro-bg.jpg" alt=""></a> <!--2-
->
```

```
</div>
<div class="caption">
<h4>WIN-HOT ECO PRO SERIES</h4>
<p></p>
<a class="btn btn-mini" href="WIN-HOT-ECO-PRO-SERIES.html"> View Details &raquo;</a>
</div>
</li>
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/Win-Hot-ZA-sm.jpg" alt=""></a> <!--3-->
</div>
<div class="caption">
<h4>WIN-HOT ZA SERIES</h4>
<p></p>
<a class="btn btn-mini" href="WIN-HOT-ZA-SERIES.html"> View Details &raquo;</a>
</div>
</li>
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/win-hot-eco-sm.jpg" alt=""></a> <!--4-->
</div>
<div class="caption">
<h4>WIN-HOT ECO SERIES </h4>
<p></p>
<a class="btn btn-mini" href="WIN-HOT-ECO-SERIES.html"> View Details &raquo;</a>
</div>
</li>
</ul>
```

```
</div><!-- /Slide1 -->
<div class="item">
<ul class="thumbnails">
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/win-hot-eco-aux-sm.jpg" alt=""></a> <!--5-
->
</div>
<div class="caption">
<h4>WIN-HOT ECO AUX SERIES</h4>
<p></p>
<a class="btn btn-mini" href="WIN-HOT-ECO-AUX-SERIES.html"> View Details
&raquo;</a>
</div>
</li>
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/win-hot-plus-sm.jpg" alt=""></a> <!--6-->
</div>
<div class="caption">
<h4>WIN-HOT PLUS SERIES</h4>
<p></p>
<a class="btn btn-mini" href="WIN-HOT-PLUS-SERIES.html"> View Details &raquo;</a>
</div>
</li>
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/win-hot-plus-h-sm.jpg" alt=""></a> <!--7--
>
```

```
</div>
<div class="caption">
<h4>WIN-HOT PLUS H SERIES</h4>
<p></p>
<a class="btn btn-mini" href="WIN-HOT-PLUS-H-SERIES.html"> View Details &raquo;</a>
</div>
</li>
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/v-hot-200-plus-al-sm.jpg" alt=""></a> <!--8-->
</div>
<div class="caption">
<h4>V HOT Non-Pressurized Series</h4>
<p></p>
<a class="btn btn-mini" href="V-HOT-Non-Pressurized-Series.html"> View Details &raquo;</a>
</div>
</li>
</ul>
</div><!-- /Slide2 -->
<div class="item">
<ul class="thumbnails">
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/ssal_series_commercial_1.jpg" alt=""></a>
<!--9-->
</div>
```

```
<div class="caption">
<h4>SSAL Commercial Series</h4>
<p></p>
<a class="btn btn-mini" href="SSAL-Commercial-Series.html"> View Details &raquo;</a>
</div>
</li>
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/200-lpd-ssal-sm.jpg" alt=""></a> <!--10-->
</div>
<div class="caption">
<h4>V HOT Pressurized Series</h4>
<p></p>
<a class="btn btn-mini" href="V-HOT-Pressurized-Series.html"> View Details &raquo;</a>
</div>
</li>
<li class="col-md-3">
<div class="thumbnail">
<a href="#"><img src="assets/images/portfolio/v-hot-500-plus-al-di-sm.jpg"  alt=""></a>
<!--11-->
</div>
<div class="caption">
<h4>V Hot Commercial Series</h4>
<p></p>
<a class="btn btn-mini" href="V-Hot-Commercial-Series.html"> View Details &raquo;</a>
</div>
</li>
</ul>
</div><!-- /Slide3 -->
```

```
</div>
<div class="control-box">
<a data-slide="prev" href="#myCarousel" class="carousel-control left">‹</a>
<a data-slide="next" href="#myCarousel" class="carousel-control right">›</a>
</div><!-- /.control-box -->
</div><!-- /#myCarousel -->
</div><!-- /.span12 -->
</div><!-- /.row -->
</section><!-- /.container -->
<!-- container -->
<footer id="footer">
<div class="container">
<div class="clear"></div>
<!--CLEAR FLOATS-->
</div>
<div class="footer2">
<div class="container">
<div class="row">
<div class="col-md-6 panel">
<div class="panel-body">
<p class="text-right">
</p>
</div>
</div>
</div>
<!-- /row of panels -->
</div>
```

```
</div>
</footer>

<!-- JavaScript libs are placed at the end of the document so the pages load faster -->
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>
<script src="http://netdna.bootstrapcdn.com/bootstrap/3.0.0/js/bootstrap.min.js"></script>
<script src="assets/js/custom.js"></script>
</body>
</html>
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="description" content="Responsive-Website-Templates">
<meta name="author" content="">
<title>V-Guard Electrical Appliances</title>
<link rel="favicon" href="assets/images/favicon.png">
<link rel="stylesheet" media="screen" href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">
<link rel="stylesheet" href="assets/css/bootstrap.min.css">
<link rel="stylesheet" href="assets/css/font-awesome.min.css">
<!-- Custom styles for our template -->
<link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">
<link rel="stylesheet" href="assets/css/style.css">
</head>
<body>
<!-- Fixed navbar -->
<div class="navbar navbar-inverse">
```

```
<div class="container">
<div class="navbar-header">
<!-- Button for smallest screens -->
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"><span class="icon-bar"></span><span class="icon-bar"></span><span class="icon-bar"></span></button>
<a class="navbar-brand" href="index.html">
<img src="assets/images/logo.png" alt=""></a>
</div>
<div class="navbar-collapse collapse">
<ul class="nav navbar-nav pull-right mainNav">
<li><a href="index.html">Home</a></li>
<li><a href="about.html">About</a></li>
<li><a href="services.html">Products</a></li>
<li class="active"><a href="contact.html">Contact</a></li>
</ul>
</div>
<!--/.nav-collapse -->
</div>
</div>
<!-- /.navbar -->
<header id="head" class="secondary">
<div class="container">
<div class="row">
<div class="col-sm-8">
<h1>Contact us</h1>
</div>
</div>
</div>
```

```
</header>
<!-- container -->
<div class="container">
<div class="row">
<div class="col-md-6">
<iframe
src="https://www.google.com/maps/embed?pb=!1m14!1m8!1m3!1d118200.51009597442!2d76.88736465038261!3d11.231296488001282!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x3ba8f14964922b1b%3A0x70476e93d13622a6!2sArun%20Hi-Tech%20Engineering!5e0!3m2!1sen!2sin!4v1681929745144!5m2!1sen!2sin" width="500" height="450" style="border:0;" allowfullscreen="" loading="lazy" referrerpolicy="no-referrer-when-downgrade"></iframe>
</div>
<div class="col-md-6">
<div class="row">
<div class="col-md-6">
<h3 class="section-title">Office Address</h3>
<div class="contact-info">
<h5>Website</h5>
<p><a href="https://www.vguard.in" target="_blank">www.vguard.in</a> </p>
<h5>Whatsapp</h5>
<p>9633503333</p>
<h5>Email</h5>
<p>customercare@vguard.in</p>
<h5>Call Center</h5>
<p>1800-103-1300 (Tollfree)</p>
<p>1800-180-3000 (Toll)</p>
</div>
</div>
```

```
<div class="col-md-6">
<h3 class="section-title">Timings</h3>
<div class="contact-info">
<h5>Monday - Saturday</h5>
<p>09:00 AM - 7:00 PM</p>
<h5>Sunday</h5>
<p>09:00 AM - 6:00 PM</p>
</div>
</div>
</div>
<h3 class="section-title">Get connected</h3>
<p>
</p>
</div>
</div>
</div>
<!-- /container -->
<footer id="footer">
<div class="container">
<div class="social text-center">
<a href="#"><i class="fa fa-twitter"></i></a>
<a href="#"><i class="fa fa-facebook"></i></a>
<a href="#"><i class="fa fa-dribbble"></i></a>
<a href="#"><i class="fa fa-flickr"></i></a>
<a href="#"><i class="fa fa-github"></i></a>
</div>
<div class="clear"></div>
<!--CLEAR FLOATS-->
```

```
</div>
<div class="footer2">
<div class="container">
<div class="row">
<div class="col-md-6 panel">
<div class="panel-body">
<p class="simplenav">
</p>
</div>
</div>
<div class="col-md-6 panel">
<div class="panel-body">
<p class="text-right">
</p>
</div>
</div>
</div>
<!-- /row of panels -->
</div>
</div>
</footer>
<!-- JavaScript libs are placed at the end of the document so the pages load faster -->
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>
<script src="http://netdna.bootstrapcdn.com/bootstrap/3.0.0/js/bootstrap.min.js"></script>
<script src="assets/js/custom.js"></script>
<!-- Google Maps -->
<script src="https://maps.googleapis.com/maps/api/js?v=3.exp&sensor=false"></script>
<script src="assets/js/google-map.js"></script>
```

```
</body>
</html>
 <!DOCTYPE html>
 <html lang="en">
 <head>
 <meta charset="utf-8">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
 <meta name="description" content="Responsive-Website-Templates">
 <meta name="author" content="">
 <title>V-Guard Electrical Appliances</title>
 <link rel="favicon" href="assets/images/favicon.png">
 <link rel="stylesheet" media="screen" href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">
 <link rel="stylesheet" href="assets/css/bootstrap.min.css">
 <link rel="stylesheet" href="assets/css/font-awesome.min.css">
 <link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">
 <link rel="stylesheet" href="assets/css/style.css">
 <link rel='stylesheet' id='camera-css' href='assets/css/camera.css' type='text/css' media='all'>
 </head>
 <body>
 <!-- Fixed navbar -->
 <div class="navbar navbar-inverse">
```

```
<div class="container">

<div class="navbar-header">

<!-- Button for smallest screens -->

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"><span class="icon-bar"></span><span class="icon-bar"></span><span class="icon-bar"></span></button>

<a class="navbar-brand" href="index.html">

<img src="assets/images/logo.png" alt="V-Guard"></a>

</div>

<div class="navbar-collapse collapse">

<ul class="nav navbar-nav pull-right mainNav">

<li class="active"><a href="index.html">Home</a></li>

<li><a href="about.html">About</a></li>

<li><a href="services.html">Products</a></li>

<li><a href="contact.html">Contact</a></li>

</ul>

</div>

<!--/.nav-collapse -->

</div>

</div>

<!-- /.navbar -->

<!-- Header -->
```

```
<header id="head">
<div class="container">
<div class="fluid_container">
<div class="camera_wrap camera_emboss pattern_1" id="camera_wrap_4">
<div data-thumb="" data-src="assets/images/slides/img1.jpeg">
</div>
<div data-thumb="" data-src="assets/images/slides/img2.jpeg">
</div>
<div data-thumb="" data-src="assets/images/slides/img3.jpeg">
</div>
</div><!-- #camera_wrap_3 -->
</div><!-- .fluid_container -->
</div>
</header>
<!-- /Header -->
<footer id="footer">
<div class="container">
<div class="social text-center">
<a href="#"><i class="fa fa-twitter"></i></a>
<a href="#"><i class="fa fa-facebook"></i></a>
<a href="#"><i class="fa fa-dribbble"></i></a>
```

```
<a href="#"><i class="fa fa-flickr"></i></a>

<a href="#"><i class="fa fa-github"></i></a>

</div>

<div class="clear"></div>

<!--CLEAR FLOATS-->

</div>

<div class="footer2">

<div class="container">

<div class="row">

<div class="col-md-6 panel">

<div class="panel-body">

</div>

</div>

<div class="col-md-6 panel">

<div class="panel-body">

<p class="text-right">

</p>

</div>

</div>

</div>

<!-- /row of panels -->
```

```
</div>

</div>

</footer>

<!-- JavaScript libs are placed at the end of the document so the pages load faster -->

<script src="assets/js/modernizr-latest.js"></script>

<script type='text/javascript' src='assets/js/jquery.min.js'></script>

<script type='text/javascript' src='assets/js/fancybox/jquery.fancybox.pack.js'></script>

<script type='text/javascript' src='assets/js/jquery.mobile.customized.min.js'></script>

<script type='text/javascript' src='assets/js/jquery.easing.1.3.js'></script>

<script type='text/javascript' src='assets/js/camera.min.js'></script>

<script src="assets/js/bootstrap.min.js"></script>

<script src="assets/js/custom.js"></script>

<script>

jQuery(function(){

jQuery('#camera_wrap_4').camera({

height: '600',

loader: 'bar',

pagination: false,

thumbnails: false,

hover: false,

opacityOnGrid: false,
```

```
imagePath: 'assets/images/'

});

});

</script>

</body>

</html>

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<meta name="description" content="Responsive-Website-Templates">

<meta name="author" content="">

<title>V-Guard Electrical Appliances</title>

<link rel="favicon" href="assets/images/favicon.png">

<link rel="stylesheet" media="screen" href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">

<link rel="stylesheet" href="assets/css/bootstrap.min.css">

<link rel="stylesheet" href="assets/css/font-awesome.min.css">

<!-- Custom styles for our template -->

<link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">
```

```
<link rel="stylesheet" href="assets/css/style.css">
<style type="text/css">
.newStyle1 {
font-weight: bold;
color: #000000;
font-size: 16px;
text-align: justify;
}
.newStyle2 {
font-size: 20px;
font-weight: bold;
text-decoration: underline;
}
</style>
</head>
<body>
<!-- Fixed navbar -->
<div class="navbar navbar-inverse">
<div class="container">
<div class="navbar-header">
<!-- Button for smallest screens -->
```

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"></button>

<img src="assets/images/logo.png" alt="V-Guard">

<ul class="nav navbar-nav pull-right mainNav">

Home

<li class="active">About

Products

Contact

<!--/.nav-collapse -->

<!-- /.navbar -->

<header id="head" class="secondary">

```
<h1>About us</h1>

</div>

</div>

</div>

</header>

<!-- container -->

<section class="container">

<div class="row">

<!-- main content -->

<section class="col-sm-12 maincontent">

<h3 class="newStyle2">SMARTXPOSE</h3>

<p class="newStyle1">

<img src="assets/images/about.jpg" alt="" class="img-rounded pull-right" width="300">

Welcome to Smartxpose the Group which was established in 2014. We are proud of our reputation for excellence: A reputation based on our commitment to the highest ethical standards. Our home page is a reflection of our commitment to provide you quick access to pertinent information. Our client is Our Strength . We are providing 365 days assistance Our service includes Web application development, Website designing, Corporate profiles and presentations, Software Testing , E-commerce solutions, Mobile Application development, maintenance, and re-designing, Web hosting solution, Search Engine Optimization and Flash Development.

</p>

<p class="newStyle1">We are innovation driven customer centric organization, our love for design makes application best as always and keep ahead our customers from competition in the market. We are a design agency and an internet marketing company
```

based in Coimbatore. We have been in the business for 4+ years and have deployed numerous projects for clients in India,US,Australia,Middle East and Much More.</p>

</section>

<!-- /main -->

<!-- Sidebar -->

<!-- /Sidebar -->

</section>

<!-- /container -->

<footer id="footer">

<!--CLEAR FLOATS-->

```
<div class="footer2">
<div class="container">
<div class="row">
<div class="col-md-6 panel">
<div class="panel-body">
</div>
</div>
<div class="col-md-6 panel">
<div class="panel-body">
<p class="text-right">
</p>
</div>
</div>
</div>
<!-- /row of panels -->
</div>
</div>
</footer>
<!-- JavaScript libs are placed at the end of the document so the pages load faster -->
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>
```

```
<script
src="http://netdna.bootstrapcdn.com/bootstrap/3.0.0/js/bootstrap.min.js"></script>

<script src="assets/js/custom.js"></script>

</body>

</html>

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<meta name="description" content="Responsive-Website-Templates">

<meta name="author" content="">

<title>V-Guard Electrical Appliances</title>

<link rel="favicon" href="assets/images/favicon.png">

<link rel="stylesheet" media="screen"
href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">

<link rel="stylesheet" href="assets/css/bootstrap.min.css">

<link rel="stylesheet" href="assets/css/font-awesome.min.css">

<!-- Custom styles for our template -->

<link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">

<link rel="stylesheet" href="assets/css/style.css">

</head>
```

```
<body>

<!-- Fixed navbar -->

<div class="navbar navbar-inverse">

<div class="container">

<div class="navbar-header">

<!-- Button for smallest screens -->

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"><span class="icon-bar"></span><span class="icon-bar"></span><span class="icon-bar"></span></button>

<a class="navbar-brand" href="index.html">

<img src="assets/images/logo.png" alt=""></a>

</div>

<div class="navbar-collapse collapse">

<ul class="nav navbar-nav pull-right mainNav">

<li><a href="index.html">Home</a></li>

<li><a href="about.html">About</a></li>

<li class="active"><a href="services.html">Products</a></li>

<li><a href="contact.html">Contact</a></li>

</ul>

</div>

<!--/.nav-collapse -->

</div>
```

```
</div>

<!-- /.navbar -->

<header id="head" class="secondary">

<div class="container">

<div class="row">

<div class="col-sm-8">

<h1>Products</h1>

</div>

</div>

</div>

</header>

<!-- /container -->

<section class="container">

<div class="row">

<div class="col-md-12">

<h3><span>Solar Water Heaters</span></h3>

<div class="carousel slide" id="myCarousel">

<div class="carousel-inner">

<div class="item active">

<ul class="thumbnails">

<li class="col-md-3">
```

<img src="assets/images/portfolio/win-hot-aux-pro-bg.jpg" alt=""> <!--1-->

<h4>WIN-HOT(AUX)-PRO SERIES </h4>

 View Details »

<li class="col-md-3">

<img src="assets/images/portfolio/win-hot-eco-pro-bg.jpg" alt=""> <!--2-->

<h4>WIN-HOT ECO PRO SERIES</h4>

 View Details »


```
<li class="col-md-3">

<div class="thumbnail">

<a href="#"><img src="assets/images/portfolio/Win-Hot-ZA-sm.jpg" alt=""></a> <!--3--
>

</div>

<div class="caption">

<h4>WIN-HOT ZA SERIES</h4>

<p></p>

<a class="btn btn-mini" href="WIN-HOT-ZA-SERIES.html"> View Details &raquo;</a>

</div>

</li>

<li class="col-md-3">

<div class="thumbnail">

<a href="#"><img src="assets/images/portfolio/win-hot-eco-sm.jpg" alt=""></a> <!--4-->

</div>

<div class="caption">

<h4>WIN-HOT ECO SERIES </h4>

<p></p>

<a class="btn btn-mini" href="WIN-HOT-ECO-SERIES.html"> View Details
&raquo;</a>

</div>

</li>
```

```
</ul>

</div><!-- /Slide1 -->

<div class="item">

<ul class="thumbnails">

<li class="col-md-3">

<div class="thumbnail">

<a href="#"><img src="assets/images/portfolio/win-hot-eco-aux-sm.jpg" alt=""></a> <!--5-->

</div>

<div class="caption">

<h4>WIN-HOT ECO AUX SERIES</h4>

<p></p>

<a class="btn btn-mini" href="WIN-HOT-ECO-AUX-SERIES.html"> View Details &raquo;</a>

</div>

</li>

<li class="col-md-3">

<div class="thumbnail">

<a href="#"><img src="assets/images/portfolio/win-hot-plus-sm.jpg" alt=""></a> <!--6-->

</div>

<div class="caption">
```

<h4>WIN-HOT PLUS SERIES</h4>

 View Details »

<li class="col-md-3">

<img src="assets/images/portfolio/win-hot-plus-h-sm.jpg" alt=""> <!--7-->

<h4>WIN-HOT PLUS H SERIES</h4>

 View Details »

<li class="col-md-3">

<img src="assets/images/portfolio/v-hot-200-plus-al-sm.jpg" alt=""> <!--8-->

<h4>V HOT Non-Pressurized Series</h4>

 View Details »

<!-- /Slide2 -->

<ul class="thumbnails">

<li class="col-md-3">

<img src="assets/images/portfolio/ssal_series_commercial_1.jpg" alt=""> <!--9-->

<h4>SSAL Commercial Series</h4>

 View Details »

```
</li>

<li class="col-md-3">

<div class="thumbnail">

<a href="#"><img src="assets/images/portfolio/200-lpd-ssal-sm.jpg" alt=""></a> <!--10-->

</div>

<div class="caption">

<h4>V HOT Pressurized Series</h4>

<p></p>

<a class="btn btn-mini" href="V-HOT-Pressurized-Series.html"> View Details &raquo;</a>

</div>

</li>

<li class="col-md-3">

<div class="thumbnail">

<a href="#"><img src="assets/images/portfolio/v-hot-500-plus-al-di-sm.jpg" alt=""></a> <!--11-->

</div>

<div class="caption">

<h4>V Hot Commercial Series</h4>

<p></p>

<a class="btn btn-mini" href="V-Hot-Commercial-Series.html"> View Details &raquo;</a>
```

```
</div>

</li>

</ul>

</div><!-- /Slide3 -->

</div>

<div class="control-box">

<a data-slide="prev" href="#myCarousel" class="carousel-control left">‹</a>

<a data-slide="next" href="#myCarousel" class="carousel-control right">›</a>

</div><!-- /.control-box -->

</div><!-- /#myCarousel -->

</div><!-- /.span12 -->

</div><!-- /.row -->

</section><!-- /.container -->

<!-- container -->

<footer id="footer">

<div class="container">

<div class="clear"></div>

<!--CLEAR FLOATS-->

</div>

<div class="footer2">

<div class="container">
```

```
<div class="row">

<div class="col-md-6 panel">

<div class="panel-body">

<p class="text-right">

</p>

</div>

</div>

</div>

<!-- /row of panels -->

</div>

</div>

</footer>

<!-- JavaScript libs are placed at the end of the document so the pages load faster -->

<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>

<script src="http://netdna.bootstrapcdn.com/bootstrap/3.0.0/js/bootstrap.min.js"></script>

<script src="assets/js/custom.js"></script>

</body>

</html>

<!DOCTYPE html>

<html lang="en">
```

```
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="description" content="Responsive-Website-Templates">
<meta name="author" content="">
<title>V-Guard Electrical Appliances</title>
<link rel="favicon" href="assets/images/favicon.png">
<link rel="stylesheet" media="screen" href="http://fonts.googleapis.com/css?family=Open+Sans:300,400,700">
<link rel="stylesheet" href="assets/css/bootstrap.min.css">
<link rel="stylesheet" href="assets/css/font-awesome.min.css">
<!-- Custom styles for our template -->
<link rel="stylesheet" href="assets/css/bootstrap-theme.css" media="screen">
<link rel="stylesheet" href="assets/css/style.css">
</head>
<body>
<!-- Fixed navbar -->
<div class="navbar navbar-inverse">
<div class="container">
<div class="navbar-header">
<!-- Button for smallest screens -->
```

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse"></button>

<img src="assets/images/logo.png" alt="">

<ul class="nav navbar-nav pull-right mainNav">

Home

About

Products

<li class="active">Contact

<!--/.nav-collapse -->

<!-- /.navbar -->

<header id="head" class="secondary">

```
<h1>Contact us</h1>

</div>

</div>

</div>

</header>

<!-- container -->

<div class="container">

<div class="row">

<div class="col-md-6">

<iframe
src="https://www.google.com/maps/embed?pb=!1m14!1m8!1m3!1d118200.51009597442
!2d76.88736465038261!3d11.231296488001282!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s
0x3ba8f14964922b1b%3A0x70476e93d13622a6!2sArun%20Hi-
Tech%20Engineering!5e0!3m2!1sen!2sin!4v1681929745144!5m2!1sen!2sin"
width="500" height="450" style="border:0;" allowfullscreen="" loading="lazy"
referrerpolicy="no-referrer-when-downgrade"></iframe>

</div>

<div class="col-md-6">

<div class="row">

<div class="col-md-6">

<h3 class="section-title">Office Address</h3>

<div class="contact-info">

<h5>Website</h5>
```

www.vguard.in

<h5>Whatsapp</h5>

9633503333

<h5>Email</h5>

customercare@vguard.in

<h5>Call Center</h5>

1800-103-1300 (Tollfree)

1800-180-3000 (Toll)

<h3 class="section-title">Timings</h3>

<h5>Monday - Saturday</h5>

09:00 AM - 7:00 PM

<h5>Sunday</h5>

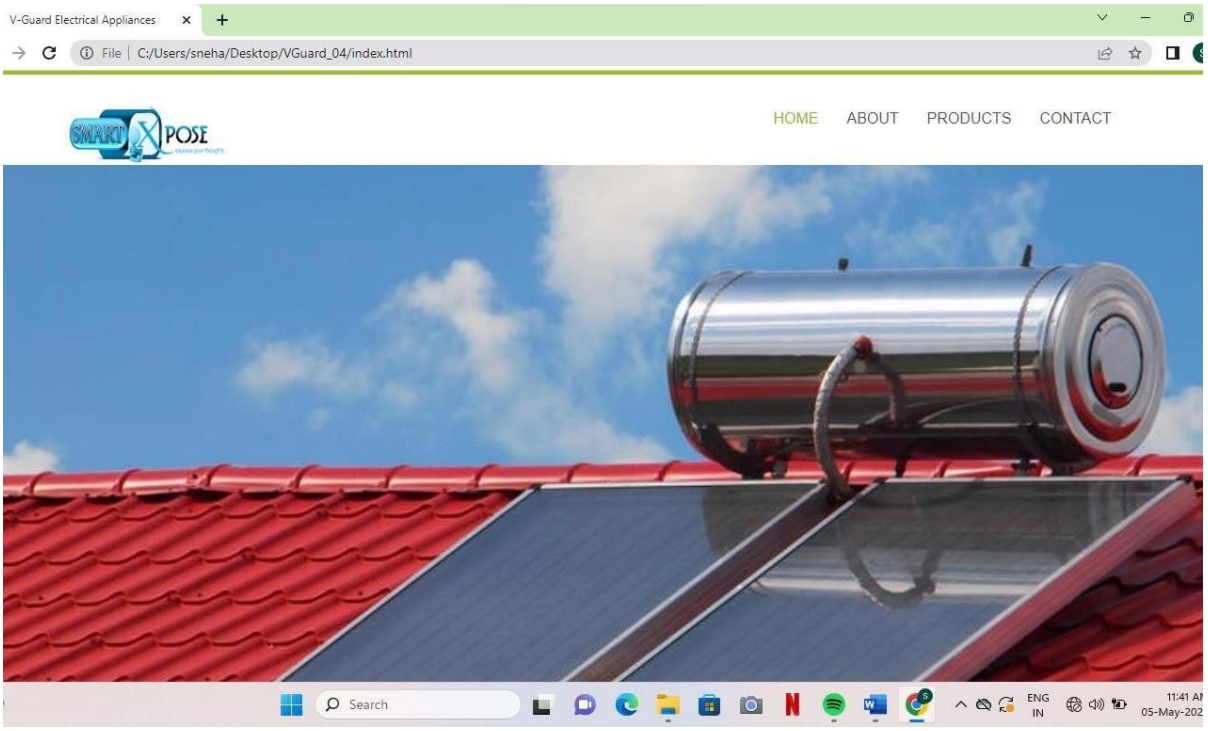
09:00 AM - 6:00 PM

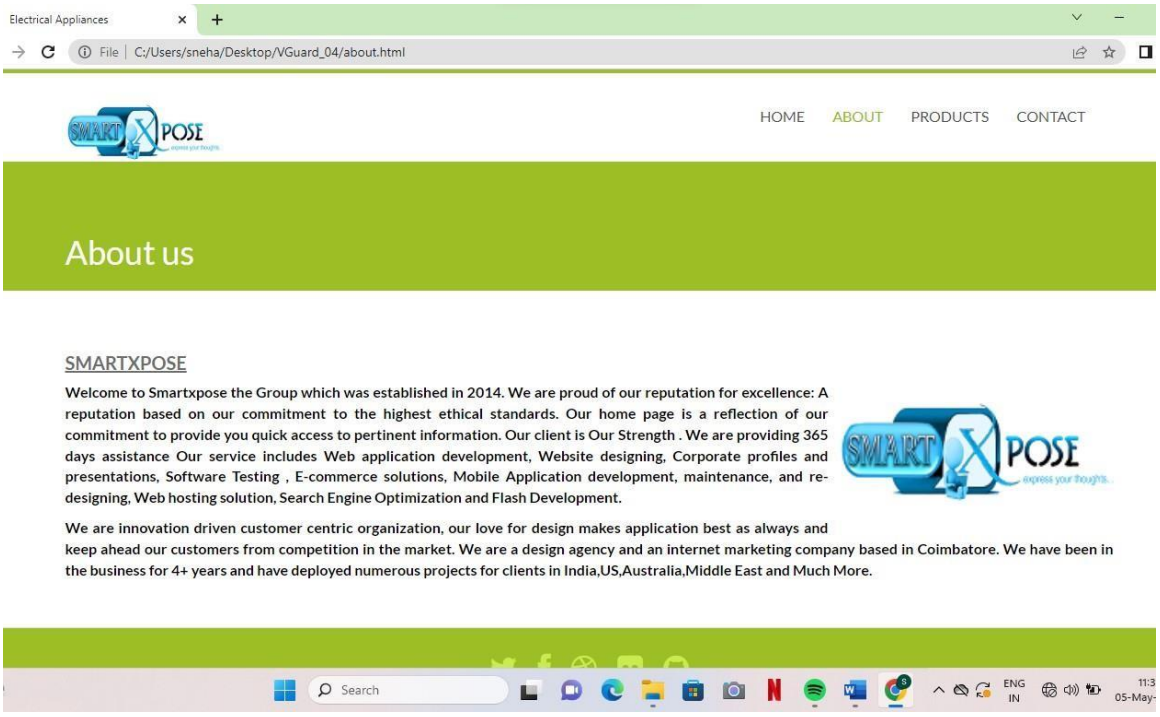
<h3 class="section-title">Get connected</h3>

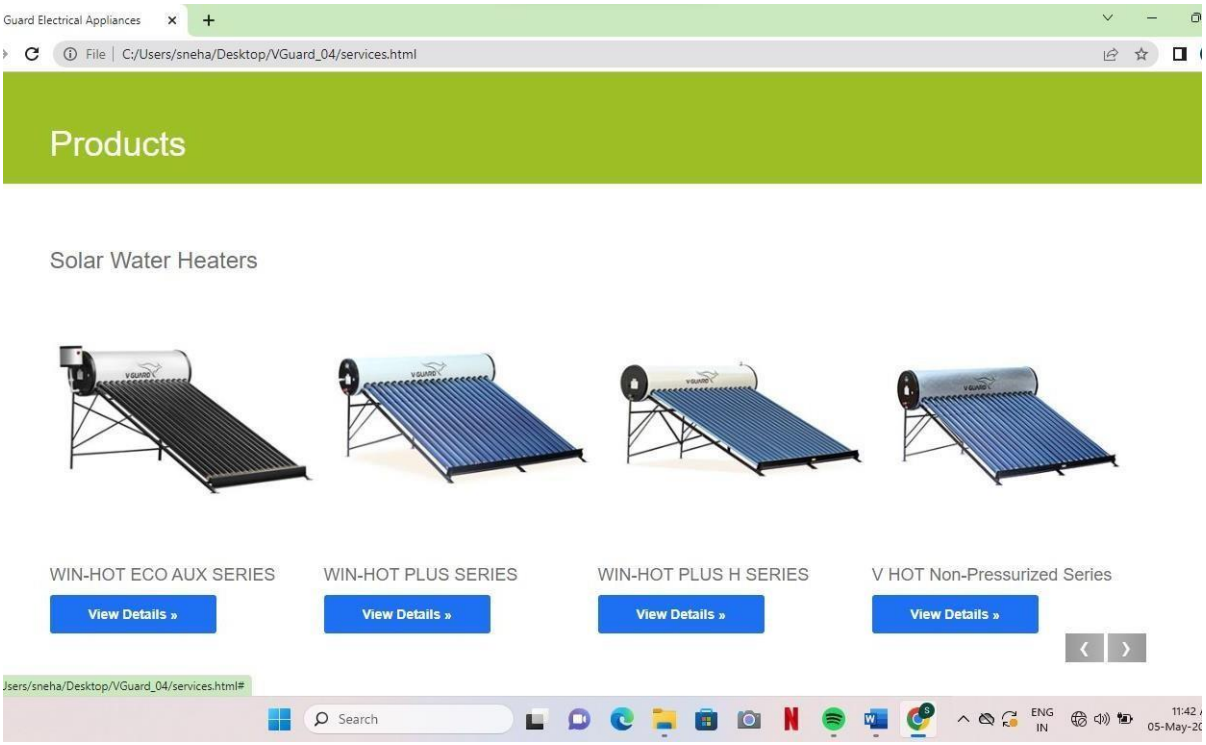
```
<p>

</p>

</div>

</div>

</div>

<!-- /container -->

<footer id="footer">

<div class="container">

<div class="social text-center">

<a href="#"><i class="fa fa-twitter"></i></a>

<a href="#"><i class="fa fa-facebook"></i></a>

<a href="#"><i class="fa fa-dribbble"></i></a>

<a href="#"><i class="fa fa-flickr"></i></a>

<a href="#"><i class="fa fa-github"></i></a>

</div>

<div class="clear"></div>

<!--CLEAR FLOATS-->

</div>

<div class="footer2">

<div class="container">

<div class="row">
```

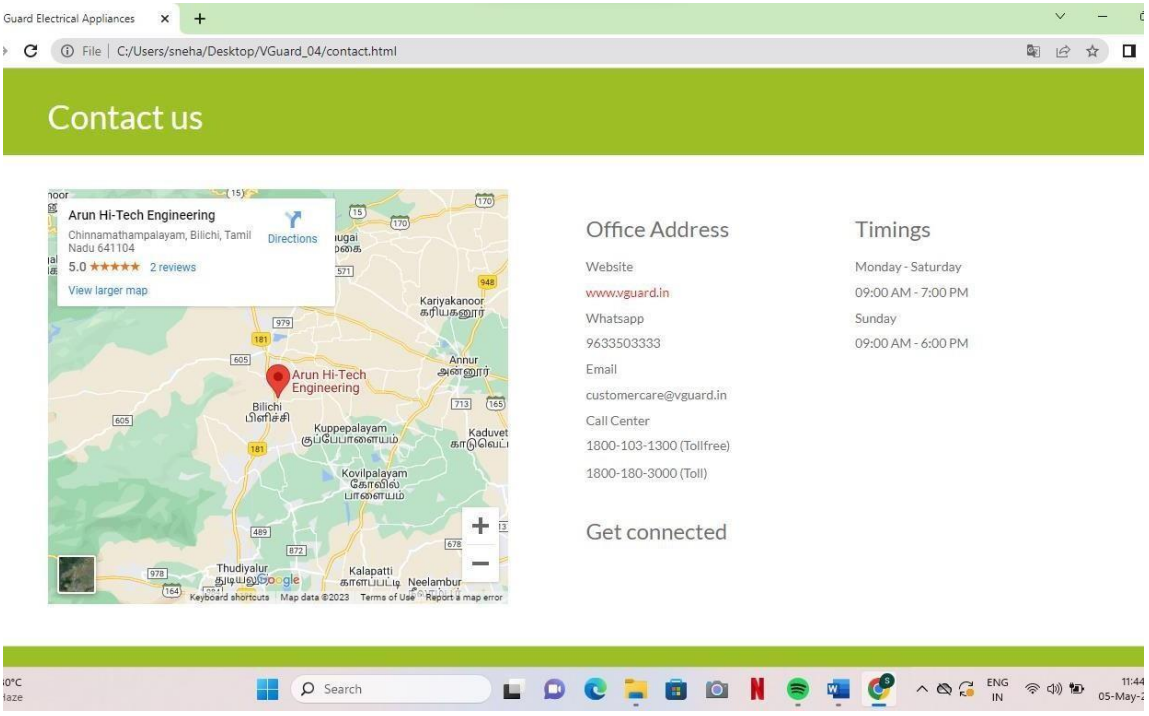
```
<div class="col-md-6 panel">
<div class="panel-body">
<p class="simplenav">
</p>
</div>
</div>
<div class="col-md-6 panel">
<div class="panel-body">
<p class="text-right">
</p>
</div>
</div>
</div>
<!-- /row of panels -->
</div>
</div>
</footer>
<!-- JavaScript libs are placed at the end of the document so the pages load faster -->
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>
<script src="http://netdna.bootstrapcdn.com/bootstrap/3.0.0/js/bootstrap.min.js"></script>
<script src="assets/js/custom.js"></script>
```

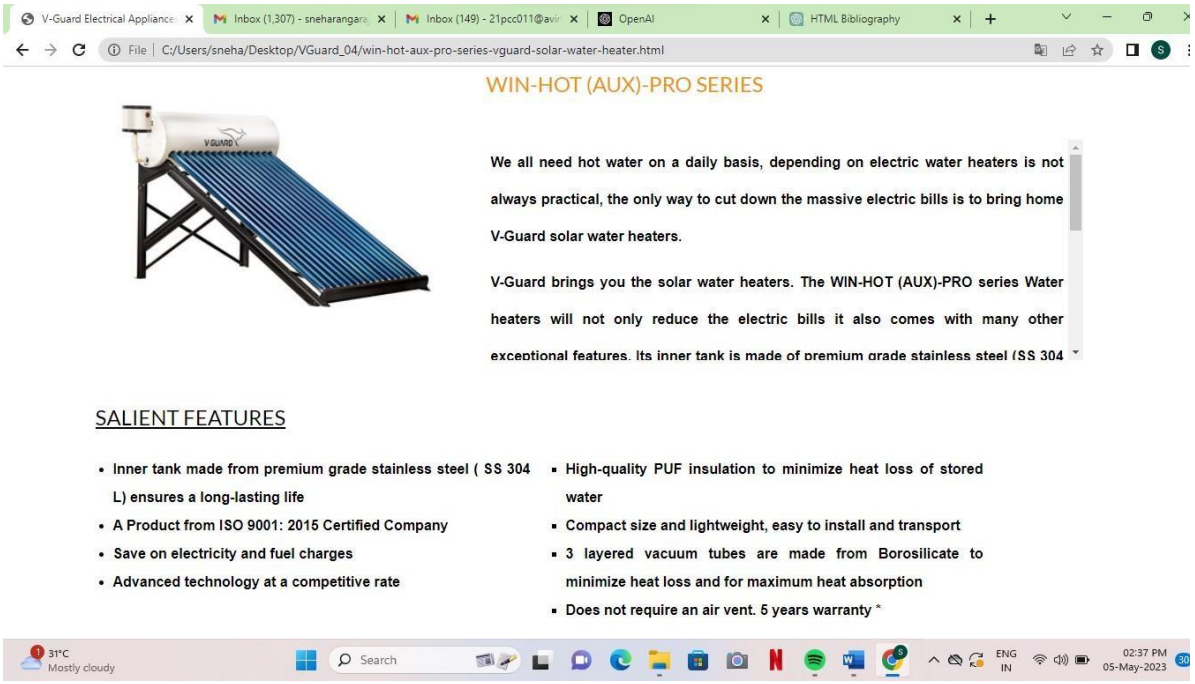
```
<!-- Google Maps -->

<script src="https://maps.googleapis.com/maps/api/js?v=3.exp&sensor=false"></script>

<script src="assets/js/google-map.js">

</script>

 </body>

</html>
```


V-Guard Electrical Appliances
File | C:/Users/sneha/Desktop/VGuard_04/index.html
HOME
ABOUT
PRODUCTS
CONTACT
Search


Electrical Appliances
File | C:/Users/sneha/Desktop/VGuard_04/about.html
HOME
ABOUT
PRODUCTS
CONTACT
About us
SMARTXPOSE
Welcome to Smartxpose the Group which was established in 2014. We are proud of our reputation for excellence: A reputation based on our commitment to the highest ethical standards. Our home page is a reflection of our commitment to provide you quick access to pertinent information. Our client is Our Strength . We are providing 365 days assistance Our service includes Web application development, Website designing, Corporate profiles and presentations, Software Testing , E-commerce solutions, Mobile Application development, maintenance, and re-designing, Web hosting solution, Search Engine Optimization and Flash Development.
We are innovation driven customer centric organization, our love for design makes application best as always and keep ahead our customers from competition in the market. We are a design agency and an internet marketing company based in Coimbatore. We have been in the business for 4+ years and have deployed numerous projects for clients in India,US,Australia,Middle East and Much More.
Search


Guard Electrical Appliances
File | C:/Users/sneha/Desktop/VGuard_04/services.html
Products
Solar Water Heaters
WIN-HOT ECO AUX SERIES
View Details »
WIN-HOT PLUS SERIES
View Details »
WIN-HOT PLUS H SERIES
View Details »
V HOT Non-Pressurized Series
View Details »
Search


Guard Electrical Appliances
File | C:/Users/sneha/Desktop/VGuard_04/contact.html
Contact us
Arun Hi-Tech Engineering
Chinnamathampalayam, Bilichi, Tamil Nadu 641104
5.0 2 reviews
Directions
View larger map
Office Address
Website
www.vguard.in
Whatsapp
9633503333
Email
customercare@vguard.in
Call Center
1800-103-1300 (Tollfree)
1800-180-3000 (Toll)
Timings
Monday - Saturday
09:00 AM - 7:00 PM
Sunday
09:00 AM - 6:00 PM
Get connected
Search



WIN-HOT (AUX)-PRO SERIES

We all need hot water on a daily basis, depending on electric water heaters is not always practical, the only way to cut down the massive electric bills is to bring home V-Guard solar water heaters.

V-Guard brings you the solar water heaters. The WIN-HOT (AUX)-PRO series Water heaters will not only reduce the electric bills it also comes with many other exceptional features. Its inner tank is made of premium grade stainless steel (SS 304

SALIENT FEATURES

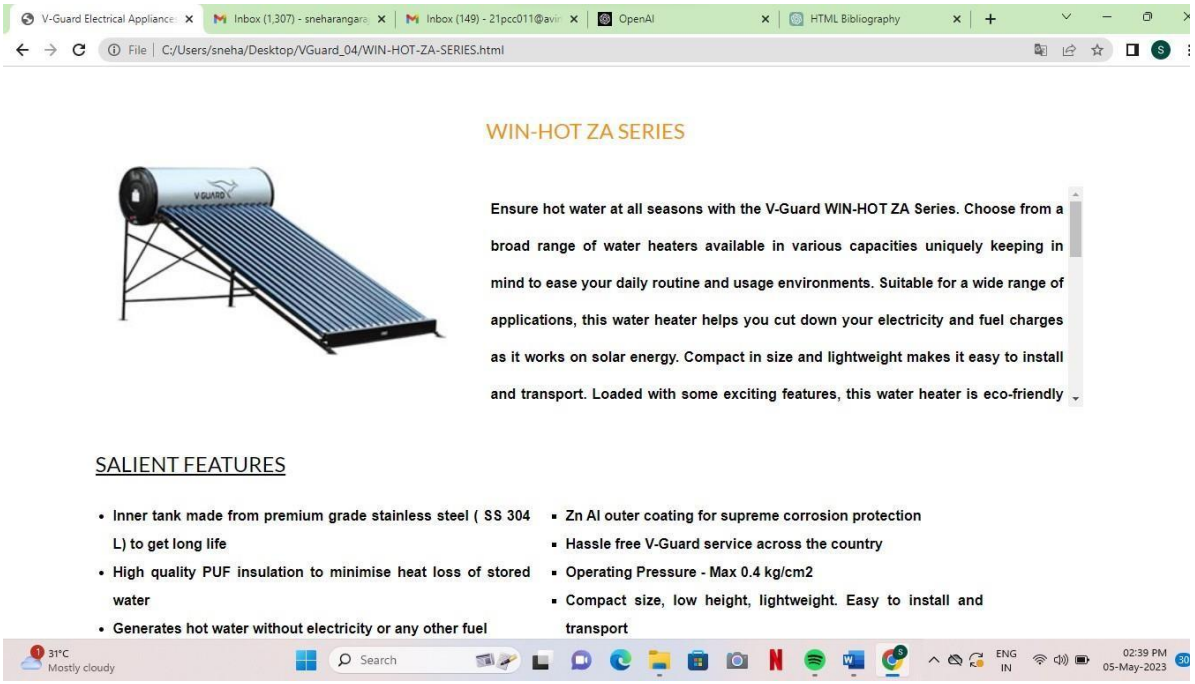
- Inner tank made from premium grade stainless steel (SS 304 L) ensures a long-lasting life
- A Product from ISO 9001: 2015 Certified Company
- Save on electricity and fuel charges
- Advanced technology at a competitive rate
- High-quality PUF insulation to minimize heat loss of stored water
- Compact size and lightweight, easy to install and transport
- 3 layered vacuum tubes are made from Borosilicate to minimize heat loss and for maximum heat absorption
- Does not require an air vent. 5 years warranty *

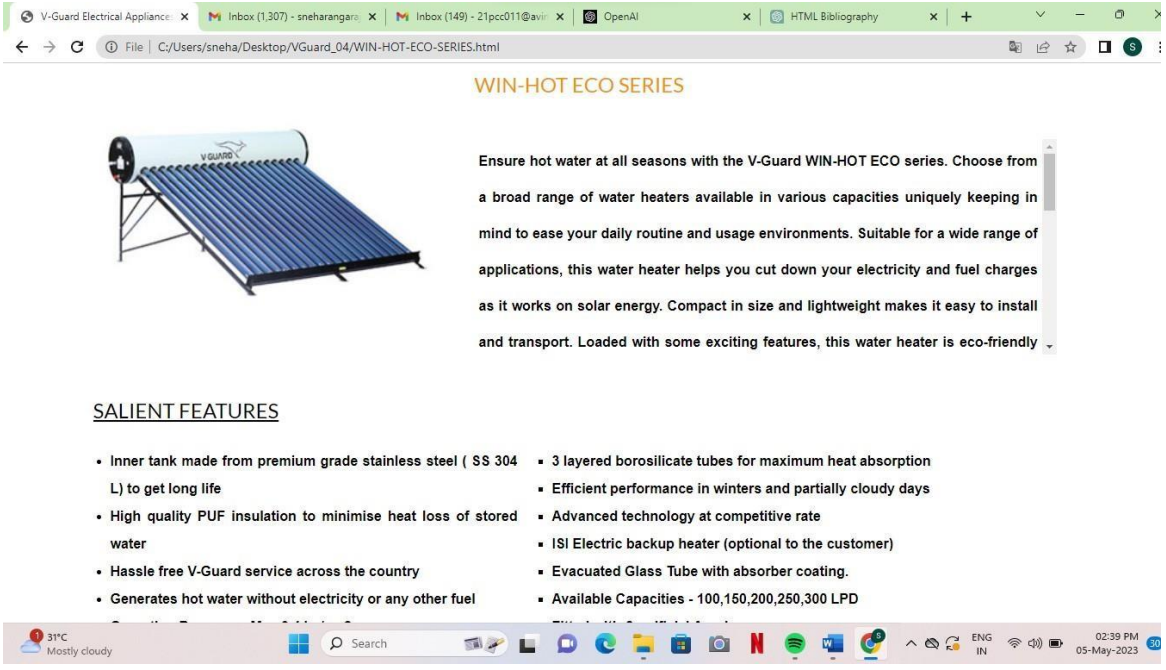
WIN-HOT ECO PRO SERIES

After an exhausting day, it feels uncomfortable to take a cold shower in the chilling temperature. As the winter sets in, a hot shower is the best remedy to relieve your stress and regain your strength. V-Guard brings you the most advanced solar water heaters, the WIN-HOT ECO PRO series. The V-Guard WIN-HOT ECO PRO series collect energy directly from the sun and convert it into usable heat, this means lower energy costs and free hot water for your home.

SALIENT FEATURES

- Inner tank made from premium grade stainless steel (SS 304 L) ensures a long-lasting life
- Generates hot water without electricity or any other fuel
- Compact size and lightweight, easy to install and transport
- 3 layered borosilicate tubes for maximum heat absorption
- Saves power and money
- High-quality PUF insulation to minimize heat loss of stored water
- Operating Pressure - Max 0.4 kg/cm2
- A Product from ISO 9001: 2015 Certified Company
- Advanced technology at a competitive rate
- 5 years warranty *


V-Guard Electrical Appliance
Inbox (1,307) - sneharangara
Inbox (149) - 21pcc011@avir
OpenAI
HTML Bibliography
File | C:/Users/sneha/Desktop/VGuard_04/WIN-HOT-ZA-SERIES.html
WIN-HOT ZA SERIES
Ensure hot water at all seasons with the V-Guard WIN-HOT ZA Series. Choose from a broad range of water heaters available in various capacities uniquely keeping in mind to ease your daily routine and usage environments. Suitable for a wide range of applications, this water heater helps you cut down your electricity and fuel charges as it works on solar energy. Compact in size and lightweight makes it easy to install and transport. Loaded with some exciting features, this water heater is eco-friendly
SALIENT FEATURES
Inner tank made from premium grade stainless steel (SS 304 L) to get long life
High quality PUF insulation to minimise heat loss of stored water
Generates hot water without electricity or any other fuel
Zn Al outer coating for supreme corrosion protection
Hassle free V-Guard service across the country
Operating Pressure - Max 0.4 kg/cm2
Compact size, low height, lightweight. Easy to install and transport
31°C
Mostly cloudy
Search
ENG
IN
02:39 PM
05-May-2023


V-Guard Electrical Appliance
Inbox (1,307) - sneharangara
Inbox (149) - 21pcc011@avir
OpenAI
HTML Bibliography
File | C:/Users/sneha/Desktop/VGuard_04/WIN-HOT-ECO-SERIES.html
WIN-HOT ECO SERIES
Ensure hot water at all seasons with the V-Guard WIN-HOT ECO series. Choose from a broad range of water heaters available in various capacities uniquely keeping in mind to ease your daily routine and usage environments. Suitable for a wide range of applications, this water heater helps you cut down your electricity and fuel charges as it works on solar energy. Compact in size and lightweight makes it easy to install and transport. Loaded with some exciting features, this water heater is eco-friendly
SALIENT FEATURES
Inner tank made from premium grade stainless steel (SS 304 L) to get long life
High quality PUF insulation to minimise heat loss of stored water
Hassle free V-Guard service across the country
Generates hot water without electricity or any other fuel
3 layered borosilicate tubes for maximum heat absorption
Efficient performance in winters and partially cloudy days
Advanced technology at competitive rate
ISI Electric backup heater (optional to the customer)
Evacuated Glass Tube with absorber coating.
Available Capacities - 100,150,200,250,300 LPD
31°C
Mostly cloudy
Search
ENG
IN
02:39 PM
05-May-2023

V-Guard Electrical Appliance | Inbox (1,307) - sneharangara | Inbox (149) - 21pcc011@avir | OpenAI | HTML Bibliography

File | C:/Users/sneha/Desktop/VGuard_04/SSAL-Commercial-Series.html

SSAL Commercial Series

The SSAL Commercial Series of Solar Water Heaters is a revolutionary product line from V-Guard - the brand that has always given the best in quality, technology, performance and service. The most advanced in Solar Water Heaters, V-Guard Solar Water Heaters are made from high-quality components and come with international technology. The Evacuated Tube Collector System facilitates high-efficiency

SALIENT FEATURES

- Generates hot water without electricity or any other fuel
- Negligible scaling of tube
- Storage tank is made of food Grade SS304L with Aluminium Stucco cladding. High quality PUF insulation minimizes the heat loss of water inside the tank
- Efficient performance in winter and partially cloudy days
- High quality vacuum tubes to minimize heat loss
- Fitted with Sacrificial Anode
- Greater absorption area, auto sun tracking due to circular shape of vacuum tubes
- ISI Electric backup heater (optional to the customer)
- Advanced technology at competitive rate

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V HOT Pressurized Series

The V HOT Pressurized Series of Solar Water Heaters is a revolutionary product line from V-Guard - the brand that has always given the best in quality, technology, performance and service. The most advanced in Solar Water Heaters, V-Guard Solar Water Heaters are made from high-quality components and come with international technology. The Evacuated Tube Collector System facilitates high-efficiency absorption and utilisation of solar energy, with minimum heat loss. V-Guard V HOT

SALIENT FEATURES

- Generates hot water without electricity or any other fuel
- Fitted with Sacrificial Anode
- Greater absorption area, auto sun tracking due to circular shape of vacuum tubes
- ISI Electric backup heater (optional to the customer)
- Advanced technology at competitive rate
- High quality vacuum tubes to minimize heat loss
- Storage tank is made of food Grade SS304L with Aluminium Stucco cladding. High quality PUF insulation minimizes the heat loss of water inside the tank
- Efficient performance in winter and partially cloudy days
- Compact size, low height, lightweight. Easy to install and

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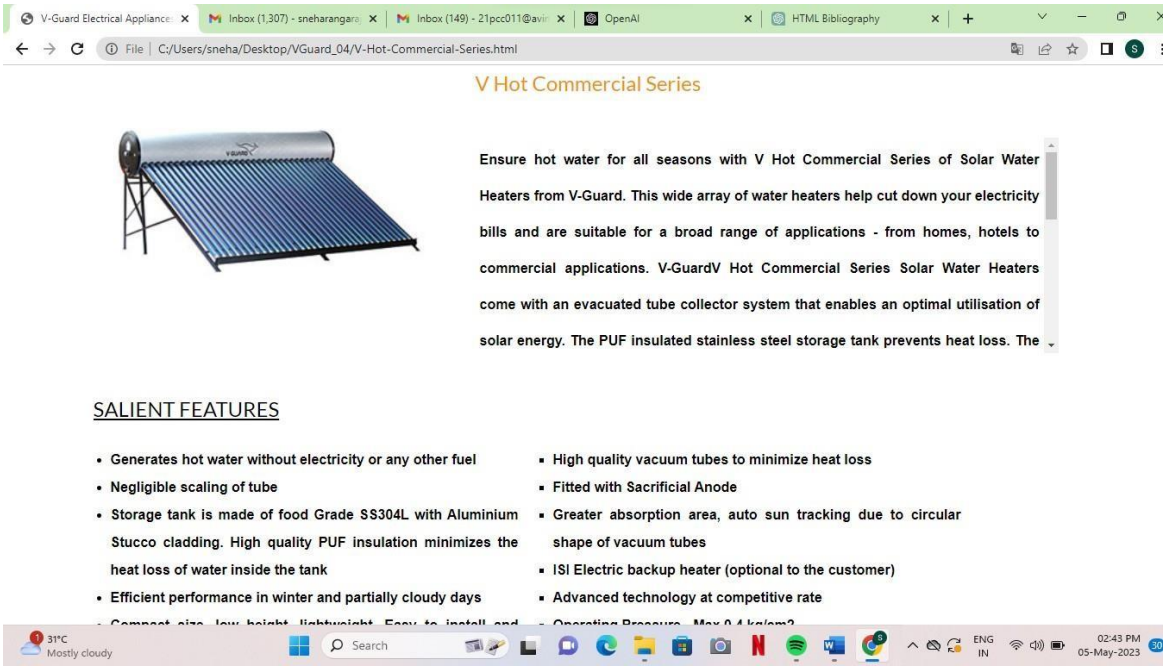
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V Hot Commercial Series
Ensure hot water for all seasons with V Hot Commercial Series of Solar Water Heaters from V-Guard. This wide array of water heaters help cut down your electricity bills and are suitable for a broad range of applications - from homes, hotels to commercial applications. V-GuardV Hot Commercial Series Solar Water Heaters come with an evacuated tube collector system that enables an optimal utilisation of solar energy. The PUF insulated stainless steel storage tank prevents heat loss. The
SALIENT FEATURES
Generates hot water without electricity or any other fuel
Negligible scaling of tube
Storage tank is made of food Grade SS304L with Aluminium Stucco cladding. High quality PUF insulation minimizes the heat loss of water inside the tank
Efficient performance in winter and partially cloudy days
High quality vacuum tubes to minimize heat loss
Fitted with Sacrificial Anode
Greater absorption area, auto sun tracking due to circular shape of vacuum tubes
ISI Electric backup heater (optional to the customer)
Advanced technology at competitive rate
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CHAPTER VII

CONCLUSION

Different types of systems, and even different climates, are going to dramatically affect the costs and benefits of different solar water heating systems. Even in locations with high solar fractions, solar water heaters take a significant amount of time to pay for themselves. Based on environment and climate, a closed, active system with centralized storage of hot water, and a flat-plate collector array appears to be the most suitable configuration for community scale SWH systems in our country.

Such systems are easily scalable, and may be thought of as "micro-utilities", providing hot water to residential units. This website designing is not intended to provide a method for designing an energetically and economically optimal SWH system design for any case, but to present a feasible community scale system design appropriate for our country. Establishing the basic features of putative community SWH systems is necessary to model their thermal performance.

FUTURE ENHANCEMENT

We can follow the below points for improving the water heater sales & marketing:

- Change the system from an active solar water heater to passive one.
- Change the position of the water tank and making it the highest point.
- Finding a better reseller or fabricating the Evacuated Tubes.
- Adding a thermocouple connected to a control panel to automate the duration of water circulation.

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