# BACKEND AUTOMATION TOOL

**SHALINI.K**

**11PCA14**

**A Project Report submitted to**
**Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore-641043**

**In Partial Fulfillment of the Requirements for the Master's Degree in Computer Applications**

**March, 2014**

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**Signature of the Supervisor** **Signature of the Head of the Department**

**Signature of the External Examiner**

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# SYNOPSIS

The project entitled “BACKEND AUTOMATION TOOL” is aimed at developing backend automation tool for web based PTL-CT using python for the company “PRICOL TECHNOLOGIES. This system is developed to retrieve data from Project management tool, Human resource management system tool and store that data into PTL-CT database automatically without user interface. Human resource management tool provides details like department master details, skill master details, currency master details for PTL-CT .Project management tool provide Timesheet details for PTL-CT. Web based user interface configuration is developed to specify the path of the shared folder and interval date. Scheduling technique is applied for interval date for backend automation.

PTL-CT maintains very large database which includes Employee details, Department mater details, Skill master details, Timesheet details, Currency master details. The purpose of the backend automation tool is to manage and manipulate the Department master, Skill master, Timesheet, Currency master tables in scheduled manner.

# CONTENTS

# 1. INTRODUCTION

The main aim of the project is to develop backend automation tool for web based PTL-CT. Backend Automation Tool is used to fetch data from project management tool and Human resource management system tool and store that data into PTL-CT database. The details such as Department master, Skill master, Currency master and Time sheet are managed and maintained in PTL-CT database.

## 1.1 MAIN OBJECTIVES

The objectives of backend automation tool are

- To generate the user interface to configure the path.
- To generate the algorithm to import data from project management tool and human resource management system tool and store it in PTL-CT database based on scheduled task.
- To generate a Log details to specify the error that occurred during execution

## 1.2 OVERVIEW OF THE PROJECT

The Backend automation tool is developed for PTL-CT . Backend automation tool includes the following module

- Web based configuration
- Database design
- XML file handling
- CSV file handling
- Excel file handling
- Task scheduling
- Log Management

Web based configuration is a user interface configuration page which retrieve PTL-CT database details such Host name, port number, database name, user name, password , folder path details for time sheet data , department master, skill master, currency master and interval date for each folder path. Database is designed to manage and maintain employee details, timesheet details, department master, currency master, skill master. PTL-CT database details are stored in XML file and this file is used for database connectivity .Project management tool provides time sheet details in CSV format. The algorithm is generated to handle CSV file data and to maintain and manage timesheet data in PTL-CT database. Human resource management tool provide department master, skill master, currency master detail in XLS file

format. The algorithm is generated to handle XLS file data and to maintain and manage department master, skill master, and currency master in PTL-CT database. Scheduling techniques uses the interval time and automate the program. Log is created and maintained to specify the errors that occur during execution of the program.

### 1.3 ORGANISATION PROFILE

Pricol Technologies is a global engineering solutions provider enabling companies to conceptualize, design and manufacture products. Operating in different sectors such as Transportation (Automotive, Rail and Aerospace), Consumer Products, Industrial Products and Medical Devices, we have a clientele spread across the globe. With operations in the United States, Europe, India and Africa we work closely with our customers sharing their commitment and focus for their businesses**.**

Pricol Technologies offers a wide range of services in the area of Embedded systems, Mechanical Design, Industrial Design, Prototyping, Testing Support and Batch/Contract Manufacturing helping customers realize their product from Concept to Manufacturing.

Pricol Technologies is the Engineering division of the 35 year, $250 Million Pricol Group a diverse business house with interests in the area of Automotive parts, Rail & Defences, Aftermarket, Reality, Packaging & Hospitality

## 2. SYSTEM CONFIGURATION

This section gives the details about the hardware and software requirements.

### 2.1 HARDWARE REQUIREMENTS

The following are the minimum hardware requirements for this project.

- PROCESSOR : Intel(R)Core Duo processor
- HARD DISK : 320 GB
- KEYBOARD :104 Keys
- RAM : 4 GB

## 2.2 SOFTWARE REQUIREMENTS

The following are the minimum hardware requirements for this project.

- OPERATING SYSTEM : Windows 7
- FRONT END : Asp.net
- CODING LANGUAGE : C Sharp
- SCRIPTING LANGUAGE : Java script
- BACK END TOOL : MySQL, XML,Python

## 2.3 ABOUT THE SOFTWARE

### PYTHON

**Python** is widely used general-purpose, high-level programming language. Its design philosophy emphasizes code readability, and its syntax allows programmers to express concepts in fewer lines of code than would be possible in languages such as Coriented programming, Python enables us to write clear, logical applications for small and large tasks.

### Features

Python's feature highlights include:

- **Easy-to-learn:** Python has relatively few keywords, simple structure, and a clearly defined syntax. This allows the user to pick up the language in a relatively short period of time.

- **Easy-to-read:** Python code is much more clearly defined and visible to the eyes.
- **Easy-to-maintain:** Python's success is that its source code is fairly easy-to-maintain.
- **A broad standard library:** One of Python's greatest strengths is the bulk of the library is very portable and cross-platform compatible on UNIX, Windows and Macintosh.
- **Interactive Mode:** Support for an interactive mode in which you can enter results from a terminal right to the language, allowing interactive testing and debugging of snippets of code.
- **Portable:** Python can run on a wide variety of hardware platforms and has the same interface on all platforms.
- **Extendable:** You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.
- **Databases:** Python provides interfaces to all major commercial databases.
- **GUI Programming:** Python supports GUI applications that can be created and ported to many system calls, libraries and windows systems, such as Windows MFC, Macintosh and the X Window system of UNIX.
- **Scalable:** Python provides a better structure and support for large programs than shell scripting.

**Types of Python:**

- **CPython** is the default, most-widely used implementation of the Python programming language. It is written in C.
- **Iron Python** is an open-source implementation of the Python programming language which is tightly integrated with the .NET Framework.
- **Cython** is a programming language that makes writing C extensions for the Python language as easy as Python itself. It aims to become a superset of the Python language which gives it high-level, object-oriented, functional, and dynamic programming.
- **Jython** is an implementation of the high-level, dynamic, object-oriented language Python seamlessly integrated with the Java platform Jython is an implementation of the high-level, dynamic, object-oriented language Python seamlessly integrated with the Java platform
- **VPython,** 3D programming for ordinary mortals.

**Python Extension Package:**

- xlrd is a Python library to Extract data from new and old Microsoft Excel spreadsheets. It supports both .xls and .xlsx files (from Excel 2007).
- CSV (Comma Separated Values) format is the most common import and export format for spreadsheets and databases.
- MySQL-python is a Python database API 2.0 interface for the MySQL database
- The sched module implements a generic event scheduler for running tasks at specific times.
- The venv module provides support for creating lightweight "virtual environments" with their own site directories, optionally isolated from system site directories.
- Xml.dom is a Python standard library provides a minimal but useful set of interfaces to work with XML.
- PyET -Python Embedded Tools is a set of Python programs, modules and scripts to aid in the development of embedded systems
- AutoPy is a GUI automation toolkit
- Babel is a tools for internationalizing Python applications
- Milk is a machine learning toolkit.
- NetworkX is a package for complex networks
- NumPy is a fundamental package needed for scientific computing with Python
- Orange is a machine learning and interactive data mining toolbox.
- Pymatlab provides an interface to MATLAB
- SciPy is software for mathematics, science, and engineering.
- VTK, the Visualization Toolkit, is a software system for 3D computer graphics, image processing, and visualization.

**ASP.NET**

ASP.NET is a server-side Web application framework designed for Web development to produce dynamic Web pages. ASP.Net is a part of Microsoft .Net platform. ASP.Net applications are complied codes, written using the extensible and reusable

components or objects present in .Net framework. These codes can use the entire hierarchy of classes in .Net framework.

The ASP.Net application codes could be written in either of the following languages:

- C#
- Visual Basic .Net
- Jscript
- J#

ASP.Net is used to produce interactive, data-driven web applications over the internet. It consists of a large number of controls like text boxes, buttons and labels for assembling, configuring and manipulating code to create HTML pages.

**C SHARP(C#)**

C# is a modern, general-purpose, object-oriented programming language developed by Microsoft .C# is designed for Common Language Infrastructure (CLI), which consists of the executable code and runtime environment that allows use of various high-level languages to be used on different computer platforms and architectures.

The following reasons make C# a widely used professional language:

- Modern, general-purpose programming language
- Object oriented.
- Component oriented.
- Easy to learn.
- Structured language.
- It produces efficient programs.
- It can be compiled on a variety of computer platforms.
- Part of .Net Framework.

**Features**

Although C# constructs closely follow traditional high-level languages C and C++ and being an object-oriented programming language, it has strong resemblance with Java, it has numerous strong programming features that make it endearing to multitude of programmers worldwide.

Following is the list of few important features:

- Boolean Conditions
- Automatic Garbage Collection
- Standard Library
- Assembly Versioning
- Properties and Events
- Delegates and Events Management
- Easy-to-use Generics
- Indexers
- Conditional Compilation

## XML

Extensible Markup Language (XML) is a mark-up language that defines a set of rules for encoding documents in a format that is both human-readable and readable. The design goals of XML emphasize simplicity, generality, and usability over the Internet.

**Features**

- XML files are text files, which can be managed by any text editor.

- XML is very simple, because it has less than 10 syntax rules.
- XML is extensible, because it only specifies the structural rules of tags. No specification on tags them self.

## MYSQL

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed, and supported by MySQL AB, which is a Swedish company

**Features**

- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
- MySQL uses a standard form of the well-known SQL data language.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).

# 3. SYSTEM STUDY AND ANALYSIS

System development can generally be thought of having two major components: system analysis and systems design. In system Analysis more emphasis is given to understanding the details of an existing system or a proposed one and then deciding whether the proposed system is desired or not and whether the existing system needs improvements. Thus, system analysis is the process of investigating a system, identifying problems, and using the information to recommend improvements to the system.

### 3.1 EXISTING SYSTEM

There is an existing system in PTL-CT to retrieve data from project management tool and human resource management system tool.

- Data retrieval is done manually every time.
- Data insert, update and modify in database done manually.

### 3.2 PROPOSED SYSTEM

Features of proposed system

- Scheduling technique is used.
- Data retrieval is done automatically without user interface.
- Currency master data is manipulated every week automatically
- Department master, Skill master, Timesheet data is manipulated automatically monthly once based on the interval date.
- Log file is created to handle error.

## 4. SYSTEM DESIGN

This section describes the implementation of the system. Design is the first process in the development phase of any engineered system. The inputs to the design are the software requirements and the output will be the design specification applicable to all software.

### 4.1 SYSTEM ARCHITECTURE

Figure 4.1 shows the application architecture

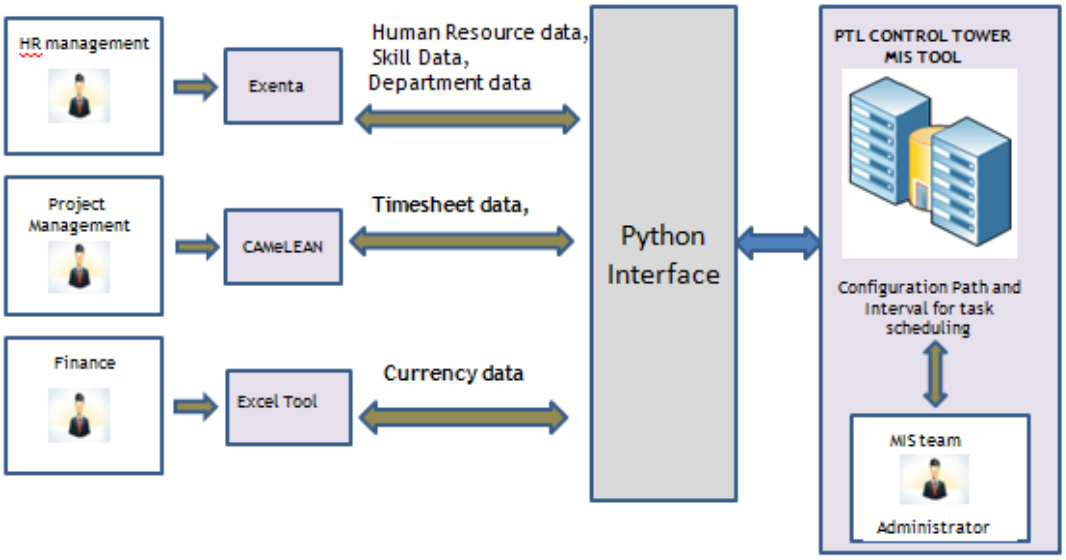



**Fig 4.1 System Architecture**

**EXENTA:**

Exenta HRMS Software is a tool that helps organizations to simplify the work process. It also helps to empower, track and manage your workforce from different locations right from your overseas operation to a remote one.

**Features**

Exenta provides you with a variety of unique features that will simplify your Human Resource process.

- Web-based application with a multi-branch option and zero restriction for number of employees.
- Direct online access of employees to management of personal HR information and attendance accruals tracking through functional organizational charts.
- Flexibility of setting up and managing a vast category of staff benefits.
- Streamlines the recruitment process with full requisition management, interview management and job offer management.

**CAMeLEAN**

CAMeLEAN is an enterprise class role-based program management solution that helps organizations collaborate and communicate across projects, time zones and geographies - with the ability to monitor them from a single point. CAMeLEAN offers a rich toolset that enables alignment of project execution with corporate objectives. A larger program perspective is delivered that helps identify trends and areas of project execution which need greater focus.

**Features**

- Program Scheduling Assessment
- Job Tracking and Timesheet Management
- Issue and Change Management
- Organization and Team Deployment Assessment
- Task Definition, Assignment & Reporting

**EXCEL TOOL**

Excel has the basic features of all spreadsheets, using a grid of cells arranged in numbered rows and letter-named columns to organize data manipulations like arithmetic operations. It has a battery of supplied functions to answer statistical, engineering and financial needs. In addition, it can display data as line graphs, histograms and charts, and with a very limited three-dimensional graphical display. It allows sectioning of data to view its dependencies on various factors for different perspectives (using pivot tables and the scenario manager)

**MANAGEMENT INFORMATION SYSTEM (MIS)**

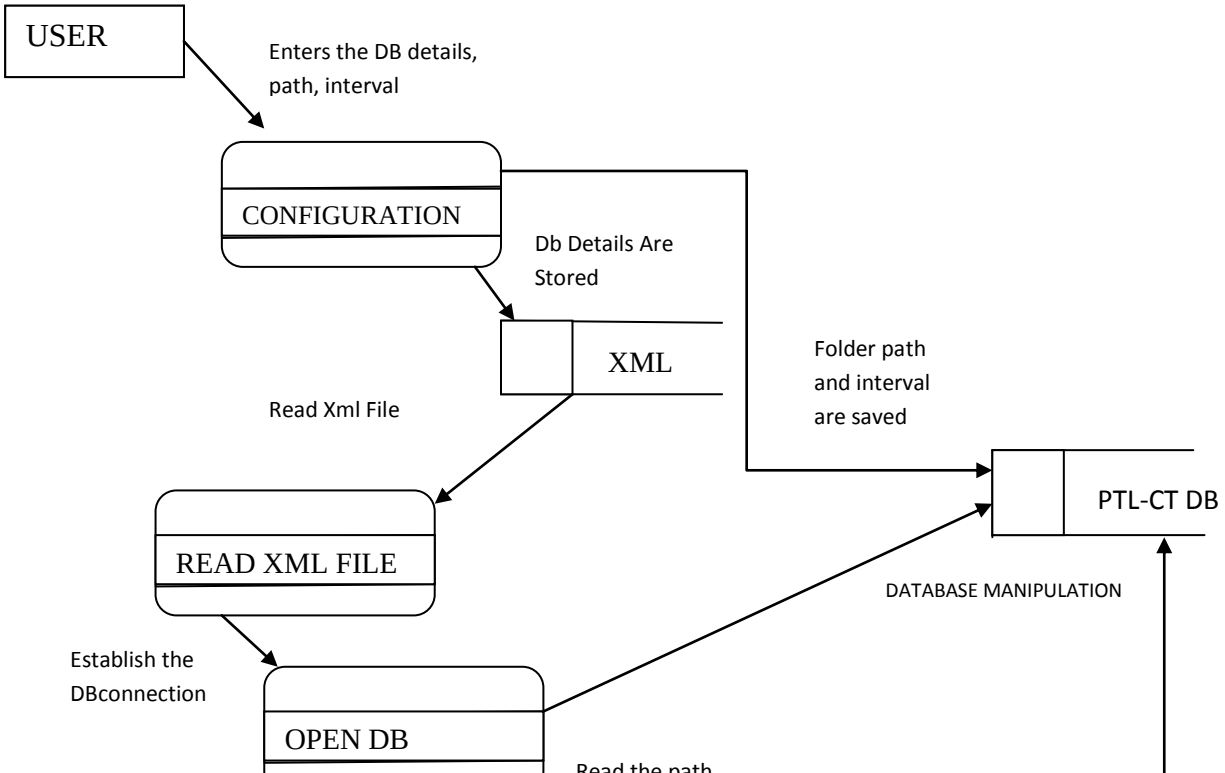
A management information system (MIS) provides information that organizations require to manage themselves efficiently and effectively. Management information systems are typically computer systems used for managing. The five primary components: 1.) Hardware, 2.) Software, 3.) Data (information for decision making), 4.) Procedures (design, development and documentation), and 5.) People (individuals, groups, or organizations). Management information systems are distinct from other information systems because they are used to analyze and facilitate strategic and operational activities.

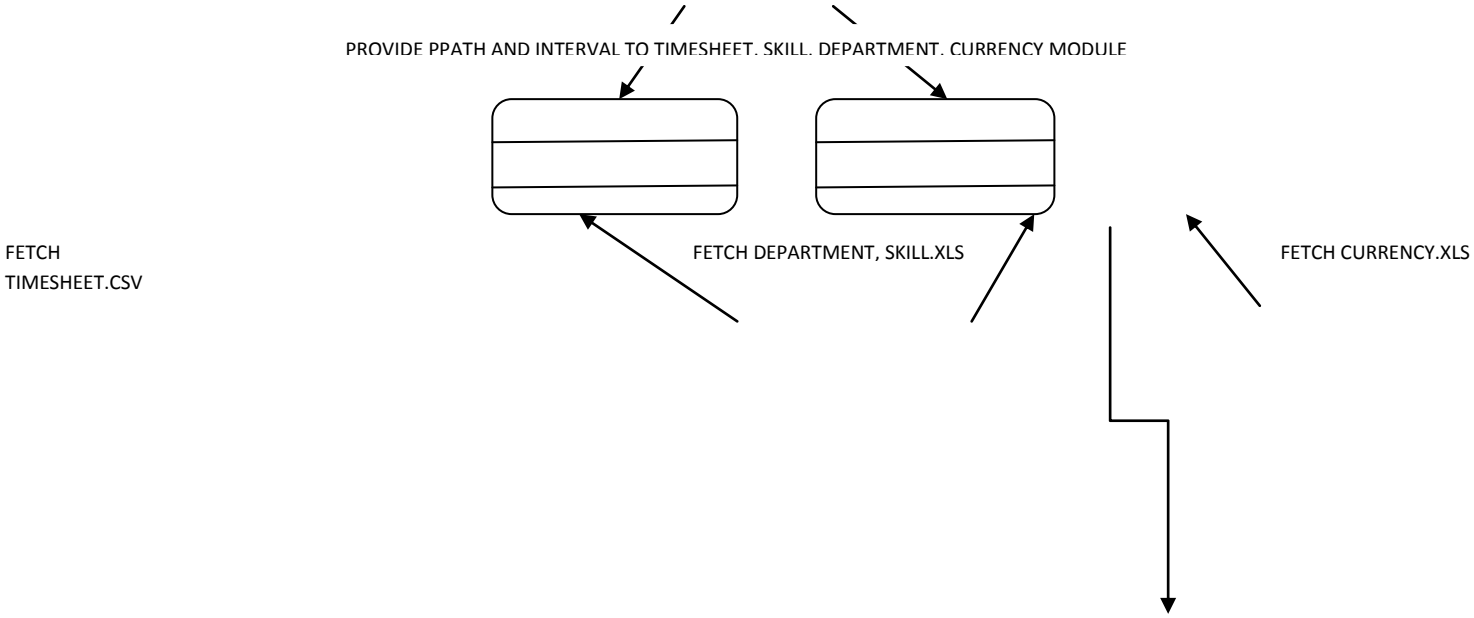
MIS described applications providing managers with information about sales, inventories, and other data that would help in managing the enterprise. Over time, the term broadened to include: decision support systems, resource management and human resource management, enterprise resource planning, enterprise performance management, management, customer, project management and database retrieval applications.

## DATA FLOW DIAGRAM

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. Often they are a preliminary step used to create an overview of the system which can later be elaborated.[2] DFDs can also be used for the visualization of data processing (structured design).

A DFD shows what kinds of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored






**Data Flow Diagram for Backend Automation Tool**

## 4.2 INPUT DESIGN:

Input design is the process of converting user-originated inputs to a computer-based format. Input design is one of the most expensive phases of the operation of computerized system and is often the major problem of a system.

In the project, the input design is made in web forms with various methods.

## 4.3 OUTPUT DESIGN:

Output design generally refers to the results and information that are generated by the system for many end-users; output is the main reason for developing the system and the basis on which they evaluate the usefulness of the application.

**4.4 DATABASE DESIGN:**

Designing the database is part of the system design. Data elements and data structures to be stored have been identified at analysis stage. They are structured and put together to design the data storage and retrieval system.

A database is a collection of interrelated data stored with minimum redundancy to serve many users quick and efficiently. The general objective is to make database easy, quick, in expensive and flexible for the user. Relationships are established between the data items and unnecessary data items are removed. Normalization is done to get an internal consistency of data and to have minimum stability.

**TABLE DESIGN**

**CONFIGURATION TABLE:**

| **Field Name** | **Data type** | **Description** |
|---|---|---|
| ID | VARCHAR(50) | Configuration Id |
| Arguments | VARCHAR(50) | Path and Interval |

**DEPARTMENT MASTER TABLE:**

| **Field Name** | **Data type** | **Description** |
|---|---|---|
| Dept_Id | INT(11) | Department Id |
| Dept_Code | VARCHAR(5) | Department Code |
| Dept_Name | VARCHAR(50) | Department Name |

| | | |
|---|---|---|
| Owner_Emp_Code | INT(11) | Owner Employee Code |
| Dept_Type | ENUM('Horizontal','Vertical','Quality','Support', 'Others') | Department type |
| Status_Active | BIT(1) | Active Status |

**SKILL MASTER TABLE:**

| **Field Name** | **Data type** | **Description** |
|---|---|---|
| Skill_Id | INT(11) | Skill ID |
| Skill_Code | VARCHAR(50) | Skill Code |
| Practice_ID | INT(11) | Practice Id |
| Skill_Remark | VARCHAR(50) | Skill Remark |

**CURRENCY MASTER TABLE:**

| **Field Name** | **Data type** | **Description** |
|---|---|---|
| Currency_Id | INT(11) | Currency ID |
| Currency_Name | VARCHAR(50) | Currency Name |
| Symbol | VARCHAR(50) | Currency Symbol |
| Default_Rate | FLOAT | Rate of the Currency |

**TIMESHEET TABLE:**

| **Field Name** | **Data type** | **Description** |
|---|---|---|
| Project_Id | VARCHAR(30) | Project ID |

| | | |
|---|---|---|
| Task_Date | DATE | Task Date |
| Emp_Code | INT(11) | Employee Code |
| Task_Type | ENUM('BillingTime','Leave','NonBillable','Non Billable - Productive','Project Overhead') | Task Type |
| Entered_Hours | FLOAT | Entered Hours |

# 5. SYSTEM DEVELOPMENT

System development is a series of operation performed on data to produce an accurate output

## 5.1 MODULE DESCRIPTION

Backend Automation Tool is categorized into:

### 5.1.1 WEB BASED CONFIGURATION

Web based configuration is a web based user interface. Here the admin should specify Database details such as host name, port number, database name, user name and password. Folder path is specified using browser for timesheet data, department master, skill master, currency master. Interval is specified for each path .Drop down option is provided to select the date of every month for time sheet, department and skill path and to select day of every week for currency master.

### 5.1.2 DATABASE DESIGN

PTL-CT database is designed using MySQL Workbench Tool .Tables such as Configuration, department master, skill master, currency master, timesheet are maintained and managed.

### 5.1.3 XML FILE HANDLING

In the web configuration admin will specify the database details and these details are stored in XML file. Python provide library for handling XML file. This XML file is handled by python script for database connection.

### 5.1.4 CSV FILE HANDLING

Project management tool provide time sheet data in CSV file format. Python provides library for handling CSV file .Python script is generated to fetch the CSV file from the timesheet folder, read the values of timesheet data, delete the existing data in timesheet table by finding maximum and minimum date difference, and insert the timesheet CSV file values into database

### 5.1.5 EXCEL FILE HANDLING

Exenta the Human resource management system tool provide Department master and skill master data in XLS file format. Excel based tool provide currency master data in XLS file format. Python provides XLRD library for handling xls and xlst file. Python script is generated to fetch xls file from department, skill, currency folders, and to update the existing data or else to insert the new in data into the respective table

### 5.1.6 TASK SCHEDULING

Advanced Python Scheduler is a powerful in-process task scheduler used for scheduling. Scheduling can be done in three ways Simple date-based scheduling, Interval based scheduling, Cron-style scheduling. Python provides sched library for handling scheduling. Corn–style scheduling use variety of expression such as day, date, second, hour, year, minute Python script is generated using corn style scheduling for each file with date ,day, hours, second.

### 5.1.7 LOG MANAGEMENT

Python script is generated to create a log text file to record the error that occurs during the execution of backend automation tool, if log file size exceeds 1MB the log file is renamed as backup file and the new log file is created. Log file specify the data and time and file in which error occur.

# 6. SYSTEM TESTING AND IMPLEMENTATION

This section describes about the testing that is done in the modules and the implementation stage.

## 6.1 SYSTEM MAINTENANCE

The objectives of this maintenance work are to make sure that the system gets into work all time without any bug. Provision must be for environmental changes which may

affect the computer or software system. This is called the maintenance of the system. Nowadays there is the rapid change in the software world. Due to this rapid change, the system should be capable of adapting these changes. In our project the process can be added without affecting other parts of the system. Maintenance plays a vital role. The system liable to accept any modification after its implementation. This system has been designed to favour all new changes. Doing this will not affect the system's performance or its accuracy.

## 6.2 SYSTEM TESTING

Testing is the process of evaluating a system or its component(s) with the intent to find that whether it satisfies the specified requirements or not.

Testing is executing a system in order to identify any gaps, errors or missing requirements in contrary to the actual desire or requirements.

Testing is done for each module. After testing all the modules, the modules are integrated and testing of the final system is done with the test data, specially designed to show that the system will operate successfully in all its aspects conditions. The procedure level testing is made first. By giving improper inputs, the errors occurred are noted and eliminated. Thus the system testing is a confirmation that all is correct and an opportunity to show the user that the system works.

### BLACK-BOX TESTING

Black-box testing treats the software as a "black box", examining functionality without any knowledge of internal implementation. The testers are only aware of what the software is supposed to do, not how it does it. Advantage of the black box technique is that no programming knowledge is required. Whatever biases the programmers may have had, the tester likely has a different set and may emphasize different areas of functionality.

### UNIT TESTING

Unit testing, also known as component testing refers to tests that verify the functionality of a specific section of code, usually at the function level. In an object-oriented environment, this is usually at the class level, and the minimal unit tests include the constructors and destructors. Each and every python script undergone unit testing.

### INTEGRATION TESTING

Integration testing is any type of software testing that seeks to verify the interfaces between components against a software design. Software components may be integrated in an iterative way or all together. Integration testing works to expose defects in the interfaces and interaction between integrated components (modules). Integration testing take place between web based configuration and backend python script.

**SYSTEM TESTING**

System testing, or end-to-end testing, tests a completely integrated system to verify that it meets its requirements. System testing is performed on the entire system in the context of a Functional Requirement Specification(s) (FRS) and/or a System Requirement Specification (SRS). System testing tests not only the design, but also the behaviour. Backend automation tool undergone system testing successfully.

.

**6.3 SYSTEM IMPLEMENTATION**

Implementation is the most crucial stage in achieving a successful system and giving the user's confidence that the new system is workable and effective. Implementation of a modified application to replace an existing one. This type of conversation is relatively easy to handle, provide there are no major changes in the system.

Each program is tested individually at the time of development using the data and has verified that this program linked together in the way specified in the programs specification, the computer system and its environment is tested to the satisfaction of the user. The system that has been developed is accepted and proved to be satisfactory for the user. And so the system is going to be implemented very soon. A simple operating procedure is included so that the user can understand the different functions clearly and quickly.

Initially as a first step the executable form of the application is to be created and loaded in the common server machine which is accessible to the entire user and the server is to be connected to a network. The final stage is to document the entire system which provides components and the operating procedures of the system.

Implementation is the stage of the project when the theoretical design is turned out into a working system. Thus it can be considered to be the most critical stage in achieving a

successful new system and in giving the user, confidence that the new system will work and be effective.

The implementation stage involves careful planning, investigation of the existing system and it's constraints on implementation, designing of methods to achieve changeover and evaluation of changeover methods. The important factor that should be considered here is that the conversion should not disrupt the functioning of the organization.

## 7. CONCLUSION

The project entitled Backend automation tool is developed as an automation tool to retrieve data from project management tool and human resource management system tool and store that data into PTL-CT database robotically without user interface. Backend automation tool overcome difficulties and drawbacks in the existing system.

The system is strong enough to withstand regressive daily operations under conditions where the database is maintained and cleared over a certain time of span. The implementation of the system in the organization will considerably reduce data entry process time.

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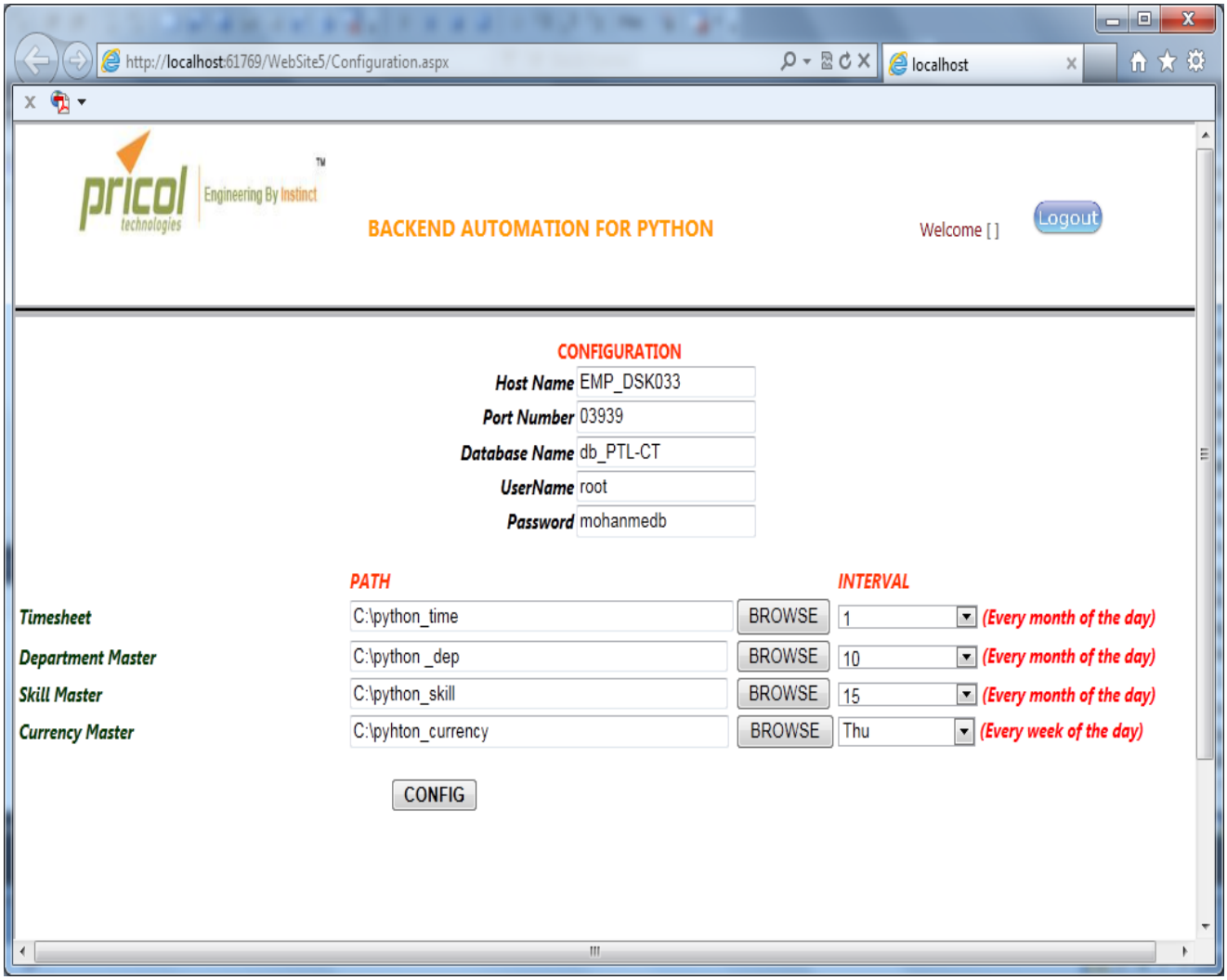
# 9. APPENDIX

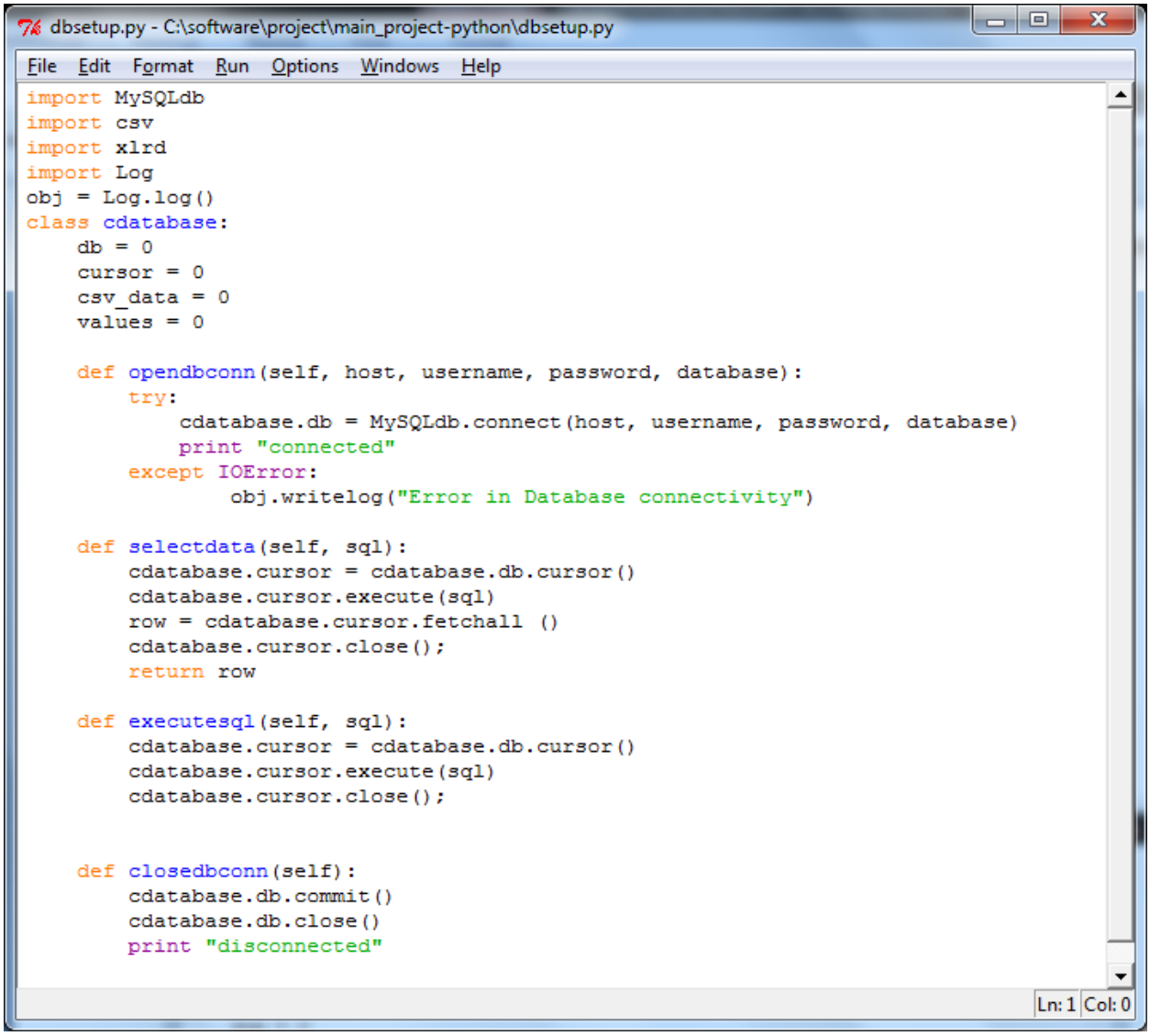
## 9.1 SCREEN SHOTS



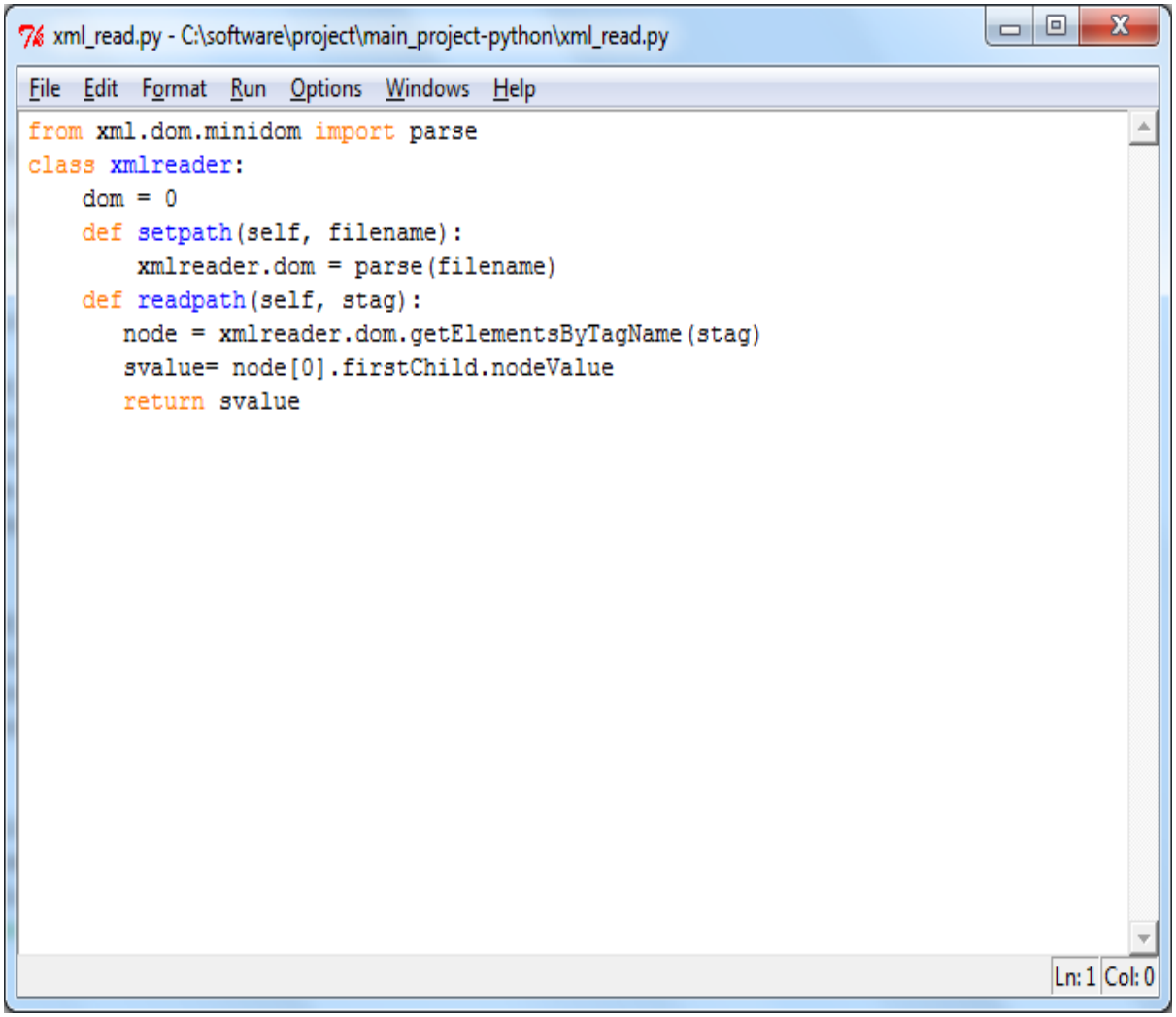

9.1 CONFIGUARTION

## 9.2 CODE GENERATED

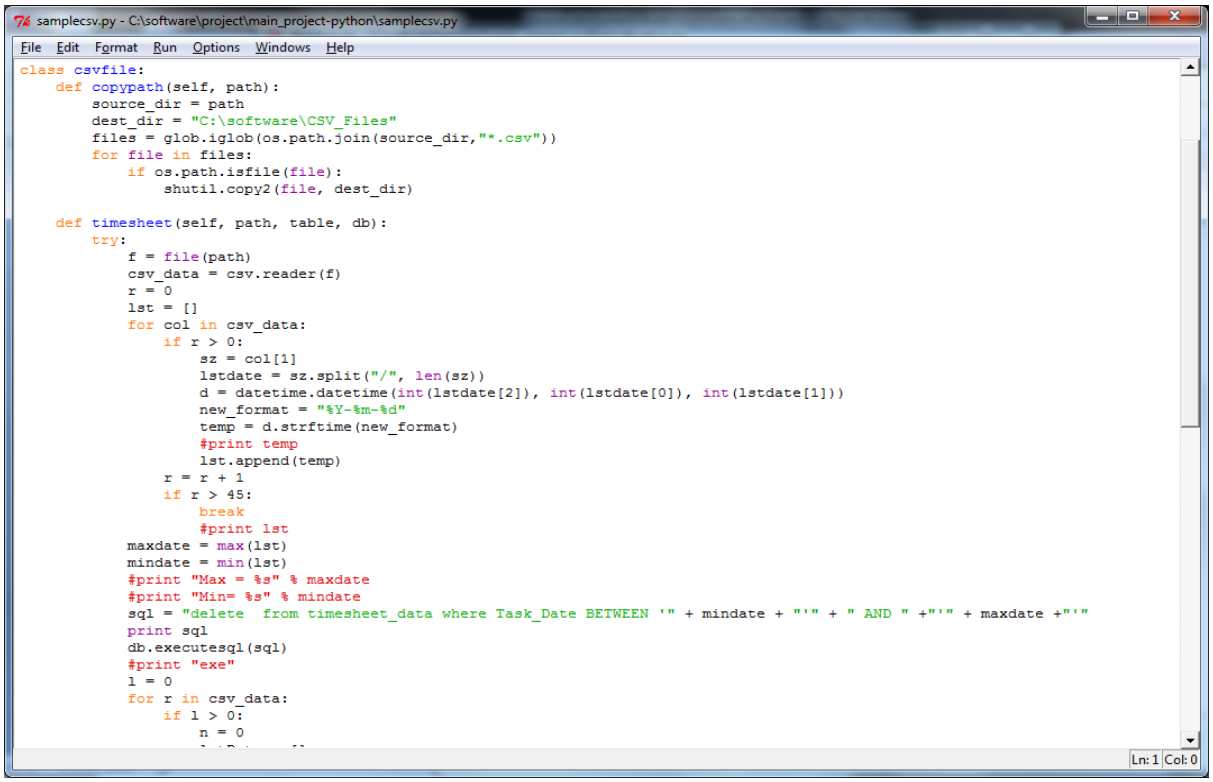
### Python Script for Database Connection:

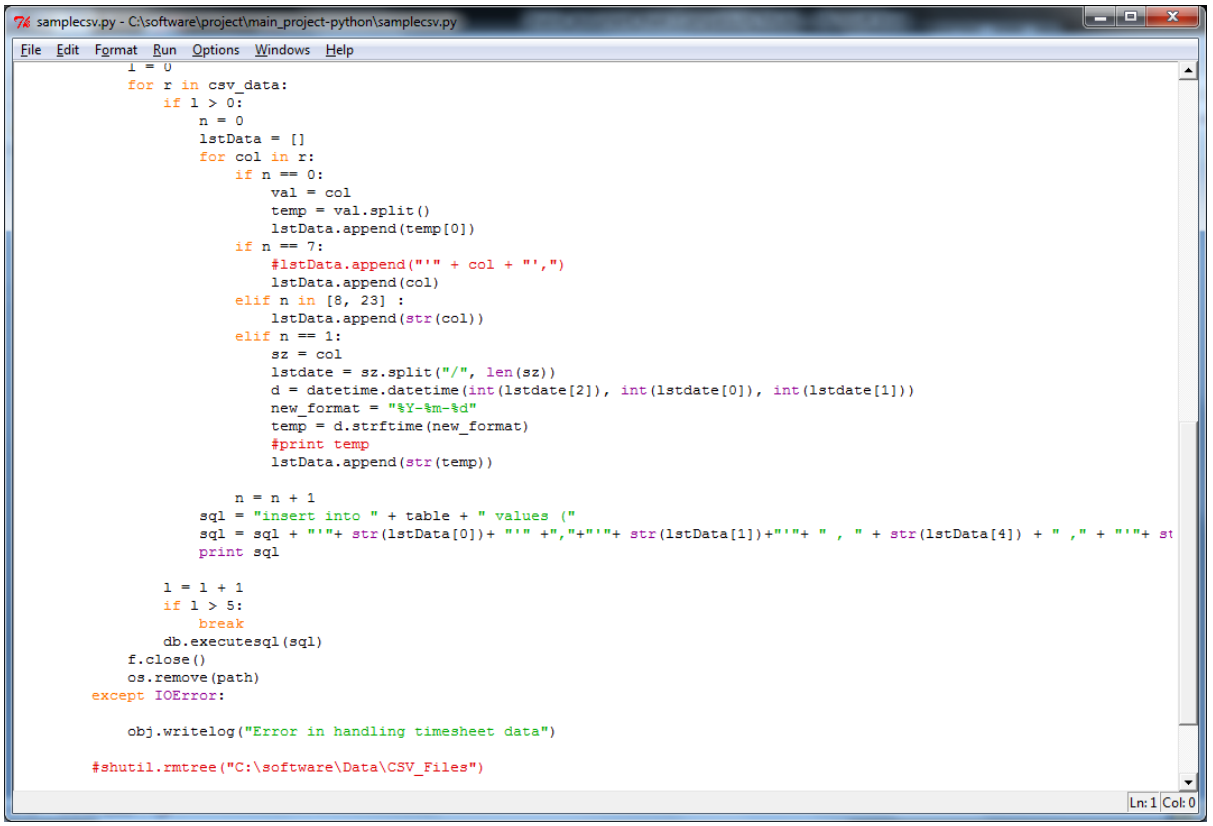



**Python Script for XML File handling:**

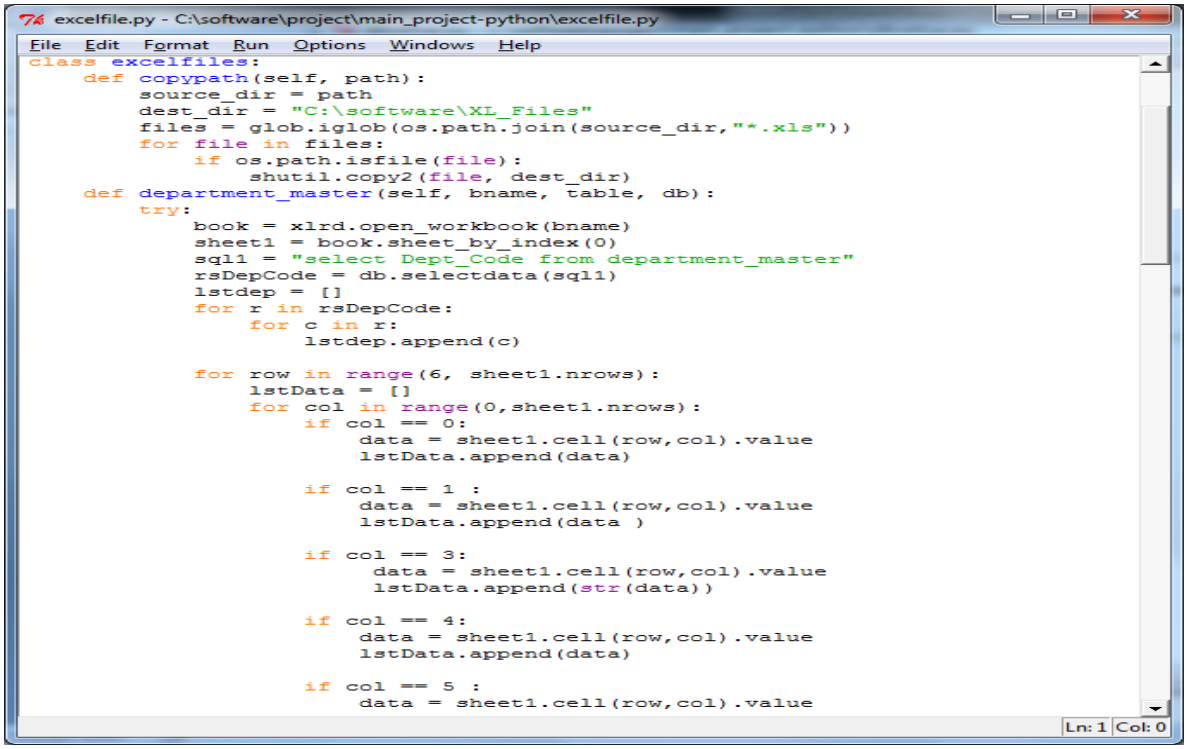



**Python Script for CSV File handling:**




## Python script Excel File handling:

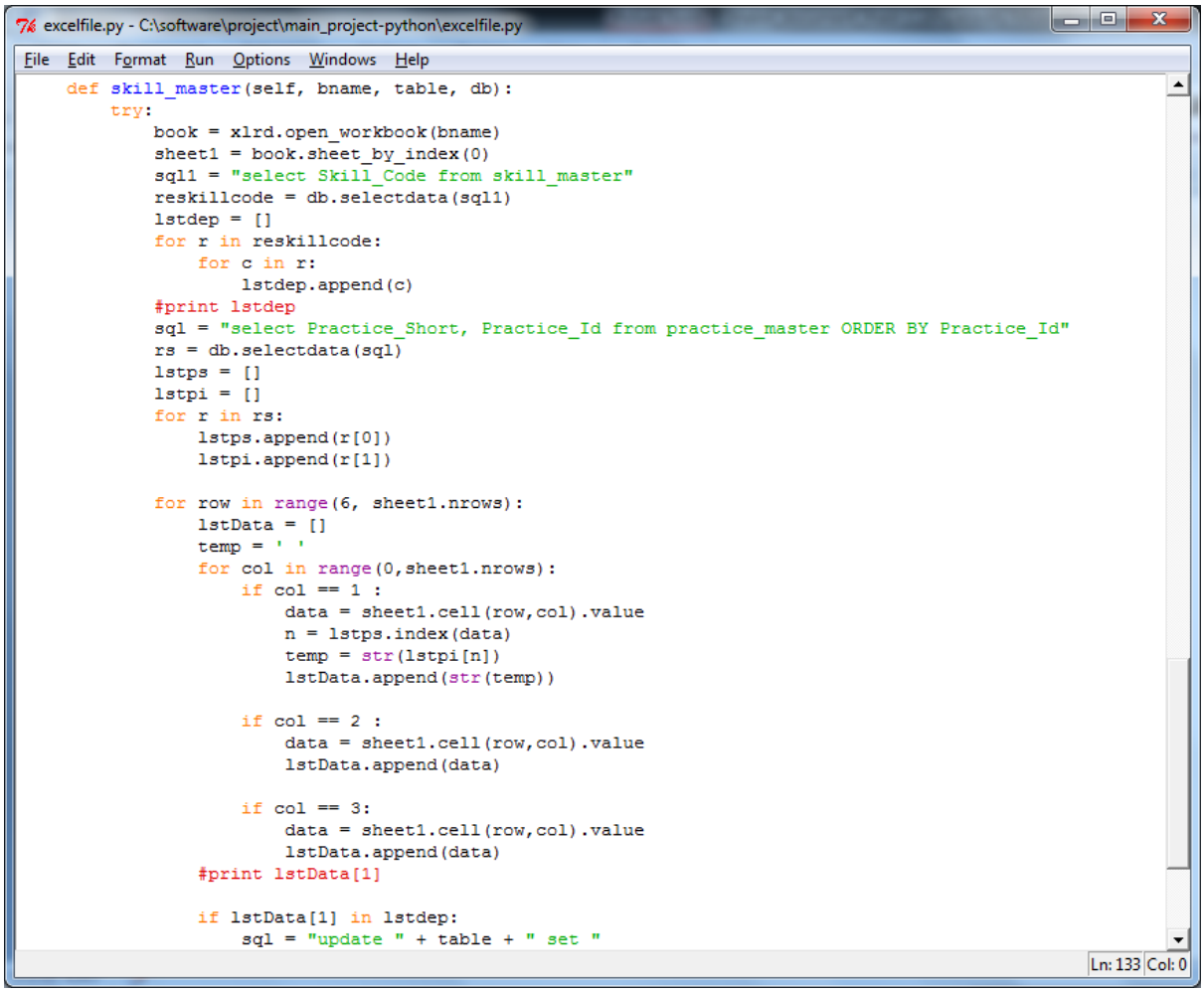


excelfile.py - C:\software\project\main_project-python\excelfile.py

File Edit Format Run Options Windows Help

```
class excelfiles:
    def copypath(self, path):
        source_dir = path
        dest_dir = "C:\software\XL_Files"
        files = glob.iglob(os.path.join(source_dir,"*.xls"))
        for file in files:
            if os.path.isfile(file):
                shutil.copy2(file, dest_dir)
    def department_master(self, bname, table, db):
        try:
            book = xlrd.open_workbook(bname)
            sheet1 = book.sheet_by_index(0)
            sql1 = "select Dept_Code from department_master"
            rsDepCode = db.selectdata(sql1)
            lstdep = []
            for r in rsDepCode:
                for c in r:
                    lstdep.append(c)

            for row in range(6, sheet1.nrows):
                lstData = []
                for col in range(0,sheet1.nrows):
                    if col == 0:
                        data = sheet1.cell(row,col).value
                        lstData.append(data)

                    if col == 1 :
                        data = sheet1.cell(row,col).value
                        lstData.append(data )

                    if col == 3:
                         data = sheet1.cell(row,col).value
                         lstData.append(str(data))

                    if col == 4:
                        data = sheet1.cell(row,col).value
                        lstData.append(data)

                    if col == 5 :
                        data = sheet1.cell(row,col).value
```

Ln: 1 Col: 0



excelfile.py - C:\software\project\main_project-python\excelfile.py

File Edit Format Run Options Windows Help

```
    def skill_master(self, bname, table, db):
        try:
            book = xlrd.open_workbook(bname)
            sheet1 = book.sheet_by_index(0)
            sql1 = "select Skill_Code from skill_master"
            reskillcode = db.selectdata(sql1)
            lstdep = []
            for r in reskillcode:
                for c in r:
                    lstdep.append(c)
            #print lstdep
            sql = "select Practice_Short, Practice_Id from practice_master ORDER BY Practice_Id"
            rs = db.selectdata(sql)
            lstps = []
            lstpi = []
            for r in rs:
                lstps.append(r[0])
                lstpi.append(r[1])

            for row in range(6, sheet1.nrows):
                lstData = []
                temp = ' '
                for col in range(0,sheet1.nrows):
                    if col == 1 :
                        data = sheet1.cell(row,col).value
                        n = lstps.index(data)
                        temp = str(lstpi[n])
                        lstData.append(str(temp))

                    if col == 2 :
                        data = sheet1.cell(row,col).value
                        lstData.append(data)

                    if col == 3:
                        data = sheet1.cell(row,col).value
                        lstData.append(data)
                #print lstData[1]

                if lstData[1] in lstdep:
                    sql = "update " + table + " set "
```

Ln: 133 Col: 0

## Python script for scheduling:

python_main_program.py - C:\software\main_project-python\python_main_program.py

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```
from apscheduler.scheduler import Scheduler
import logging
logging.basicConfig()
s = Scheduler()
def timesheet():
    odb.opendbconn(host, user, pwd, dbname)
    ocsv = samplecsv.csvfile()
    ocsv.copypath(time_path)
    ocsv.timesheet("C:\software\CSV_Files\Timesheet_July01-August13.csv","timesheet_data", odb)
    odb.closedbconn()


def dept_master():
      odb.opendbconn(host, user, pwd, dbname)
      oxl = excelfile.excelfiles()
      oxl.copypath(dep_path)
      oxl.department_master('C:\software\XL_Files\DepartmentMaster.xls','department_master', odb)
      odb.closedbconn()
def skill_master():
    odb.opendbconn(host, user, pwd, dbname)
    oxl = excelfile.excelfiles()
    oxl.copypath(skil_path)
    oxl.skill_master('C:\software\XL_Files\SkillMaster.xls','skill_master', odb)
    odb.closedbconn()
def currency_master():
    odb.opendbconn(host, user, pwd, dbname)
    oxl = excelfile.excelfiles()
    oxl.copypath(curr_path)
    oxl.currency_master('C:\software\XL_Files\CurrencyMaster.xls','currency_master', odb)
    odb.closedbconn()


s.add_cron_job(dept_master, month ='1-12', day = skil_int, second = '5')
s.add_cron_job(skill_master, month ='1-12', day = dep_int, second = '23')
s.add_cron_job(currency_master, month ='1-12', day_of_week = cur_int, second = '19')
s.add_cron_job(timesheet, month ='1-12', day = time_int , second = '31')
s.start()
```

Ln: 1 Col: 0