A Micro Project Report On

EMPLOYEE PAYROLL MANAGEMENT SYSTEM

Submitted to the CMR Institute of Technology in partial fulfilment of the requirement of the award of the laboratory of

DATA STRUCTURES THROUGH PYTHON

I-B.Tech. II Semester

DEPARTMENT OF FRESHMAN ENGINEERING

Submitted by

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CMR INSTITUTE OF TECHNOLOGY

(UGC AUTONOMOUS)

(Approved by AICTE, Affiliated to JNTU, Kukatpally, Hyderabad)

Kandlakoya, Medchal Road, Hyderabad.

2024-2025

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CERTIFICATE

This is to certify that a Micro Project entitled with

"EMPLOYEE PAYROLL MANAGEMENT SYSTEM"

submitted by

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In partial fulfillment of the requirement for the award of the laboratory of DATA STRUCTURES THROUGH PYTHON of I-B.Tech. II Semester in CSE(DATA SCIENCE) towards a record of Bonafide work carried out under guidance and supervision.

Signature of Faculty
Mrs. S. Nandini
(Assistant Professor, H&S Department)

Signature of Head of the Department
Dr. M. Radha Krishna Reddy
(H&S Department)

ACKNOWLEDGEMENT

We are extremely grateful to **Dr. M. Janga Reddy** ,**Director**, **Dr. G.Madhusudhana Rao, Principal** and **Dr. M. Radha Krishna Reddy**, Head of Department, Department of FRESHMAN ENGINEERING, CMR Institute of Technology for their inspiration and valuable guidance during entire duration.

We are extremely thankful to our DSP faculty **Mrs. S. Nandini (Assistant Professor, H&S Department),** CMR Institute of Technology for their constant guidance encouragement, and moral support throughout the project.

We express our thanks to all staff members and friends for all the help and coordination extended in bringing out this Project successfully in time.

Finally, we are very much thankful to our parents and relatives who guided directly or indirectly for successful completion of project.

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INTRODUCTION

Project Description:

Employee Payroll Management System is a program to automate or computerize all employee management operations.

Generally, every company has different departments (for example, Accounts/Admin/Human Resource/Technical/Vendors etc). For our project , consider the following departments. Due to the limited time, for our project , we will not be implementing the features of Vendors department.

Employee Payroll Management System is open to admins, Team Leader, and regular employees . Among all users, only the admins have all privileges to access all the information of EPMS . So the admins will add and remove the employees ,Team Leaders, generate reports and whereas other users will have limited roles. Once the user's login they can perform few tasks specific to their role.

Reports for employee payroll management system are categorized into different types

based on roles.

DESCRIPTION

1) Objective/ Vision:

This project is aimed at developing Employee Payroll Management System that allows to automate or computerize all employee payroll management operations

2) Users of the System:

- Admins
- Team Leader
- Regular Employee

3) Functional requirements:

- Create initial setup which includes:

  Generating employee information (adding/deleting/view employee information)

  Generating unique employee ID for each employee

- User management
- Role-based user menus

4) Non-functional requirements:

- Simple UI
- Generic Coding

5) User interface priorities:

Console

6) Reports to be generated:

- Reports for Admins
- Reports for Employees
- Reports for Team Leader

7) Technologies to be used:

Python Language, and CSV Files for storing data

8) Tools to be Used:

Visual Studio Code, Python 3.13.3

9) Final Deliverable must include:

- Create initial setup mentioned as above
- User management
- Role-based user menus

SYSTEM ANALYSIS

Existing System:

1.Visual Studio Code

The Visual Studio Code is just a code editer. Which is not ready to run a python code. Because the installation of vs code will not install any python interpretor. So the interpretor should be download form python.org website.

2.Python 3.13.3

The Python 3.13.3 is the latest version of Python interpretor.

Proposed System:

Downloading and installing of Python interpretor will not make vs code editer to run a python code. Because, VS Code has not recognized the existence of python 3.13.3 in your system. To make this work we need to add the python 3.13.3 to the VS Code.

Steps for Process:

1.Copy the .amd64 application of python 3.13.3

2.Open Environment variables of Visual Studio Code.

3.Paste the copied file.

Now the VS Code is ready to run a python code.

Installation of Extensions required:

1.Preview ANSI:

The Preview ANSI extension in Visual Studio Code helps you visualize ANSI color escape sequences within text files. This is useful for previewing log files, shell scripts, or any text that uses ANSI codes for styling, without needing a terminal.

2.ANSI Markers:

The ANSI Colors extension in VS Code allows you to view and style files containing ANSI color escape sequences. This extension interprets the escape codes within the file and displays them with the corresponding colors and formatting, making it easier to read and understand log files or other text documents with ANSI styling,

3.CSV Rainbow:

Rainbow CSV is an extension designed to enhance CSV file readability and management. By providing color-coded column separation and various functionalities like autocompletion, delimiter detection, and query execution, this extension significantly improves data handling efficiency.

ANSI Color Codes Used:

red = "\033[0;31m"

blue = "\033[0;34m"

green = "\033[0;32m"

cyan = "\033[0;36m"

yellow = "\033[1;33m"

light green = "\033[1;32m"

light purple = "\033[1;35m"

light gray = "\033[0;37m"

dark gray = "\033[1;30m"

light red = "\033[1;31m"

orange = "\033[38;5;208m"

bold = "\033[1m"

blink = "\033[5m"

end = "\033[0m"

SYSTEM DESIGN

Module Design

I .Modules imported:

1. time :sleep
2. os :system('cls'),os.remove(),os.rename()
3. getpass :getpass()
4. msvcrt :getch()
5. csv :reader(),writer()
6. ctypes : windll.kernel32.SetConsoleCursorPosition()
7. sys : stdout.write('\x1b[1A')
8. random :randint()

II.Class Description:

1. Colour :returns ANSI color code text
2. COORD :Accept the position of curser x,y
3. Position :To relocate the position of curser
4. TextField :To edit the printed text on the console
5. Invalid Choice :Exception

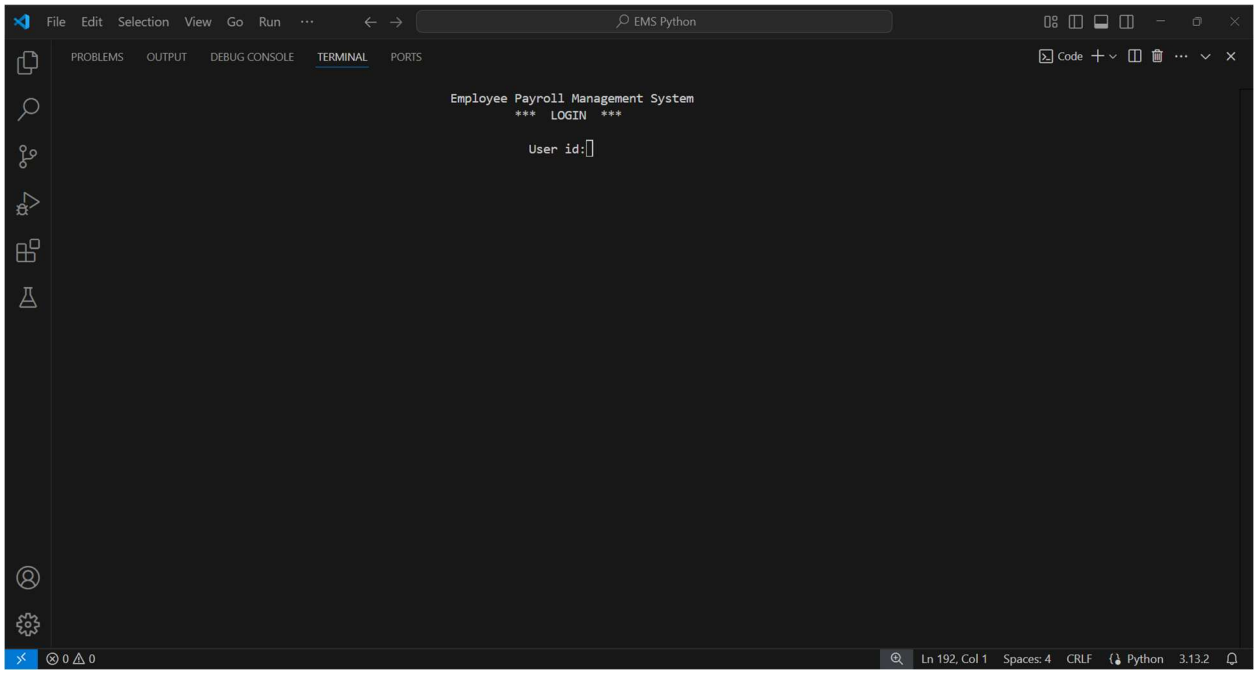
III.Function Description:

1. Clear_screen() : clears screen
2. Delete_last_line() : delete last line of the console
3. GUI() : Login Page
4. Admin_Menu_Modifier() : retuens Notification status
5. Admin_GUI() : Print Admin details on screen
6. Admin_Menu() : Prints Admin Menu
7. Team_Leader_GUI() : Prints Team Leader details on screen
8. Team_Leader_Menu() : Prints Team Leader menu
9. Employee_GUI() : Prints Employee details on screen
10. Employee_Menu() : Prints Employee Menu
11. Salary_Payment() : Pays salary to employee's
12. New_Employee() :Takes Personal details from new employee
13. Salary_Calculation() : Returns th salary and tax to payed by an employee by taking employee's CTC as input
14. Salary_Status() : Prints Salary of the employee
15. Payment_History() : Shows past salary payment status of the employee
16. Profile() :Prints Employee Detaile on screen
17. DOB_Modification() : Returns the Modefied DOB

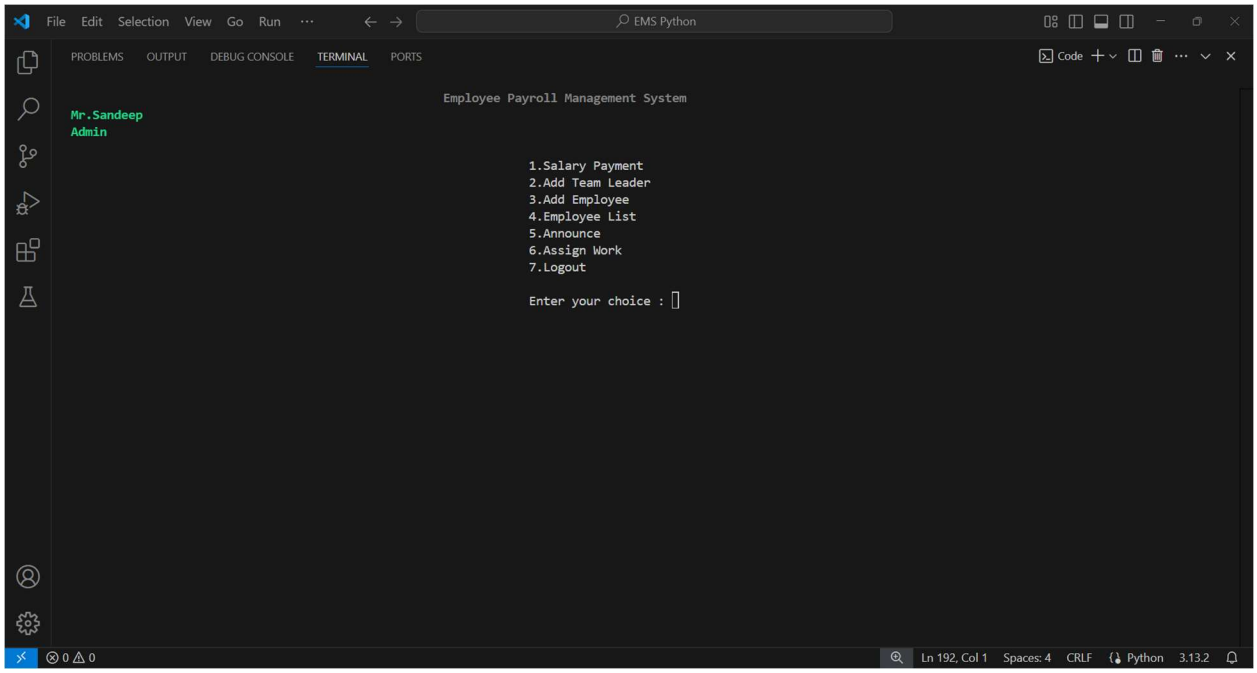
18. File_Copy() : Remove's DataBase.csv and Remane's mosify.csv to DataBase.csv
19. Edit_Profile() :Edits employee details
20. Team_Members() :Shows the team membrs of employee
21. Announcements() :Shows the Announcements
22. Add_Team_Leader() :Adds team leader
23. Add_Employee() :Adds employee
24. Employee_List() :Prints Employee List
25. Announce() :To Announce an Announcement
26. Assign_Work() :Assign work for net employees

User Interface Design

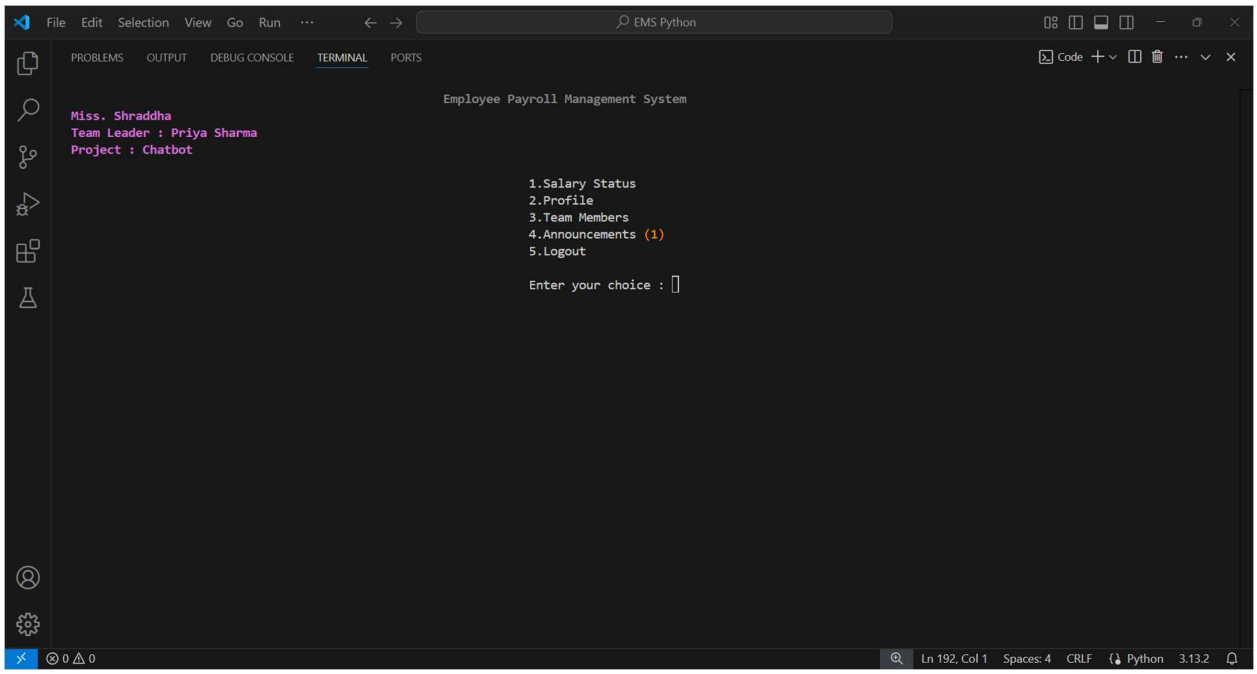
1.Login Page:



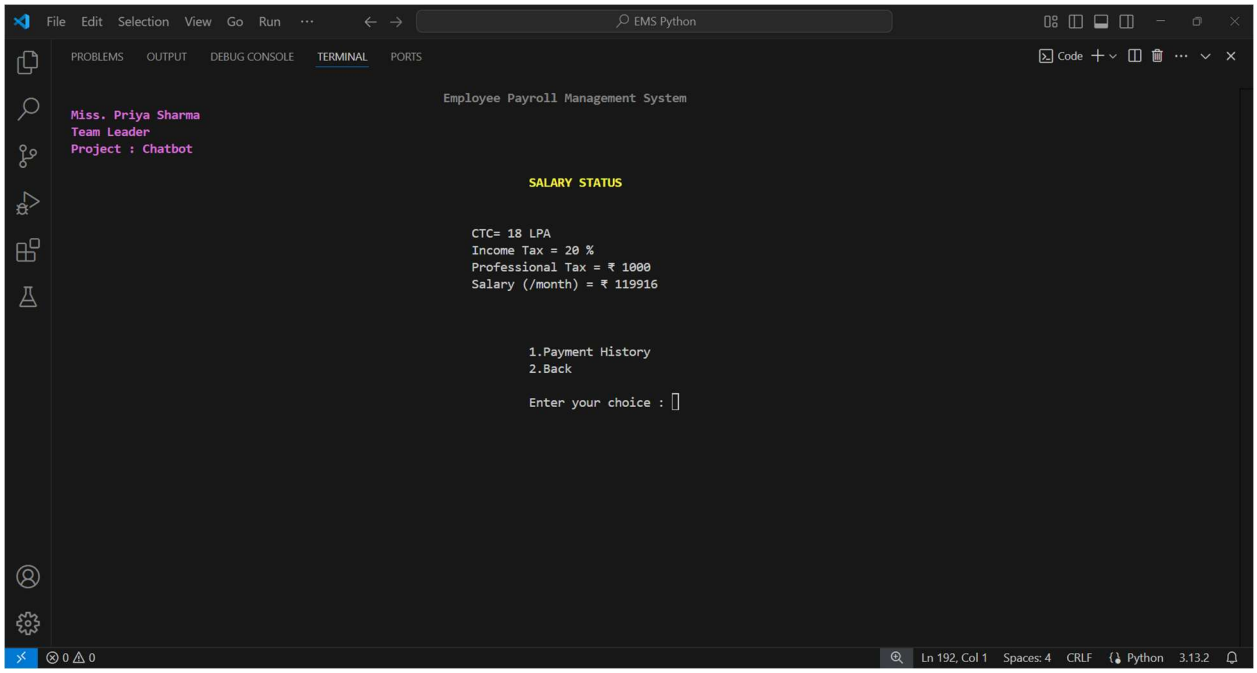
2.Admin Menu:



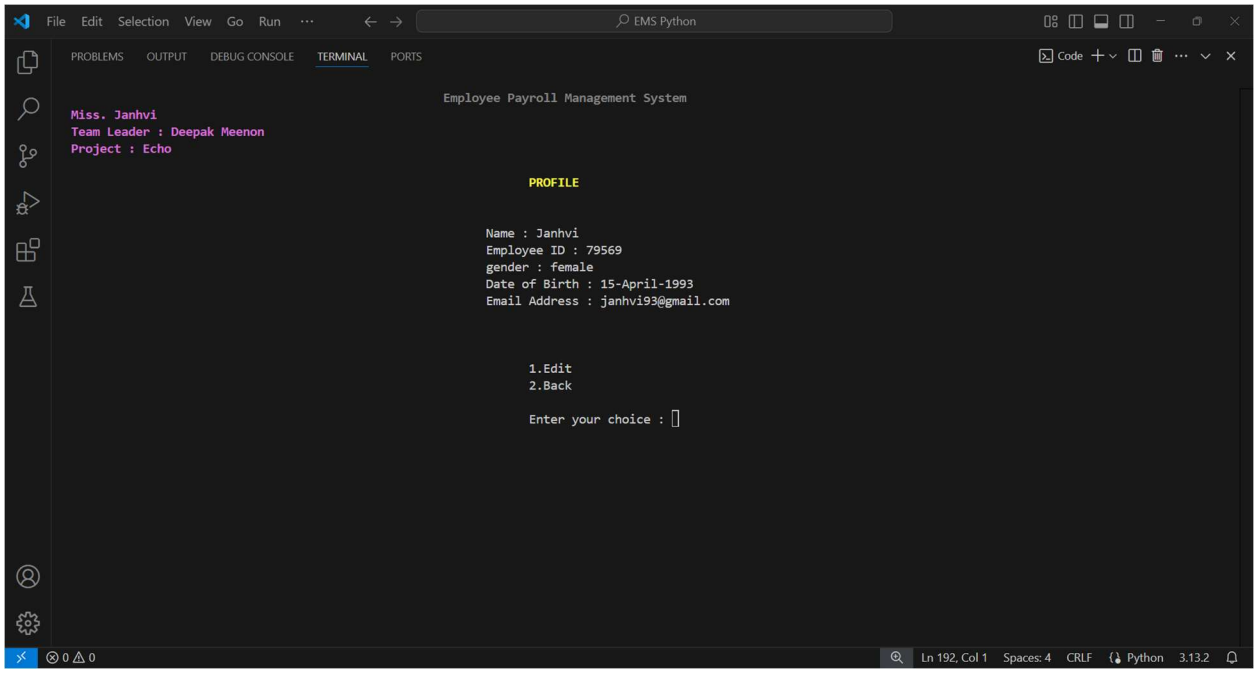
3.Employee Menu:



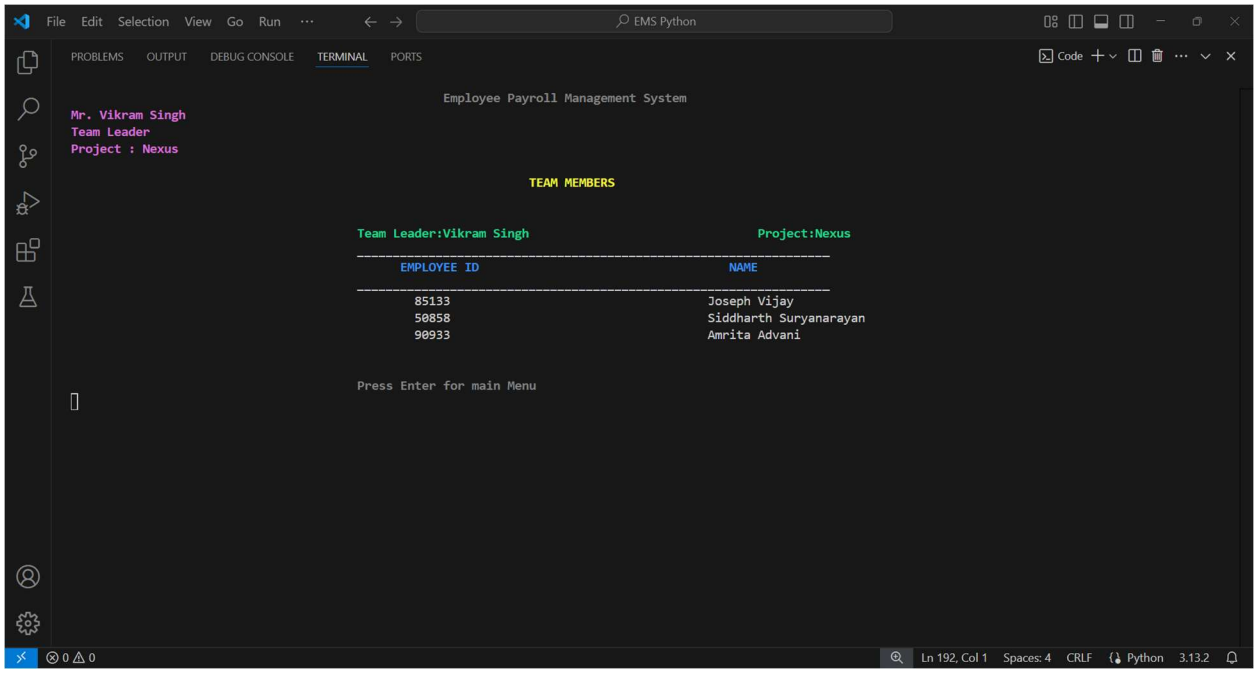
4.Salary Status:



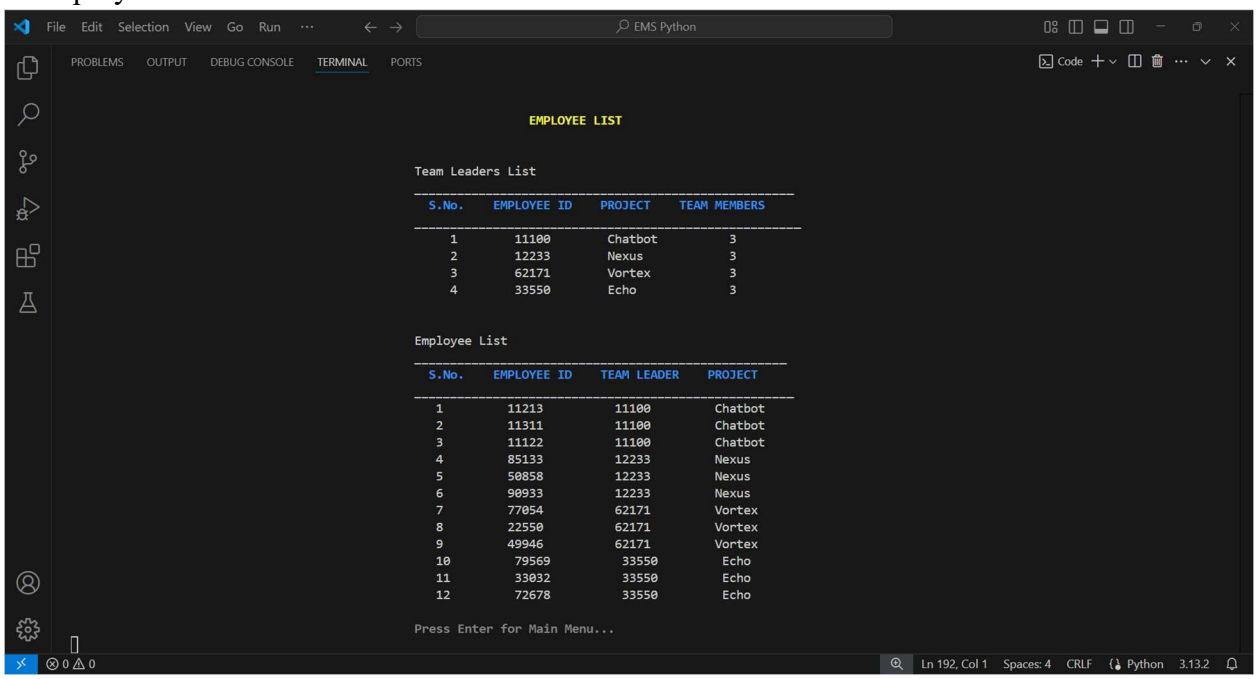
5.Profile:



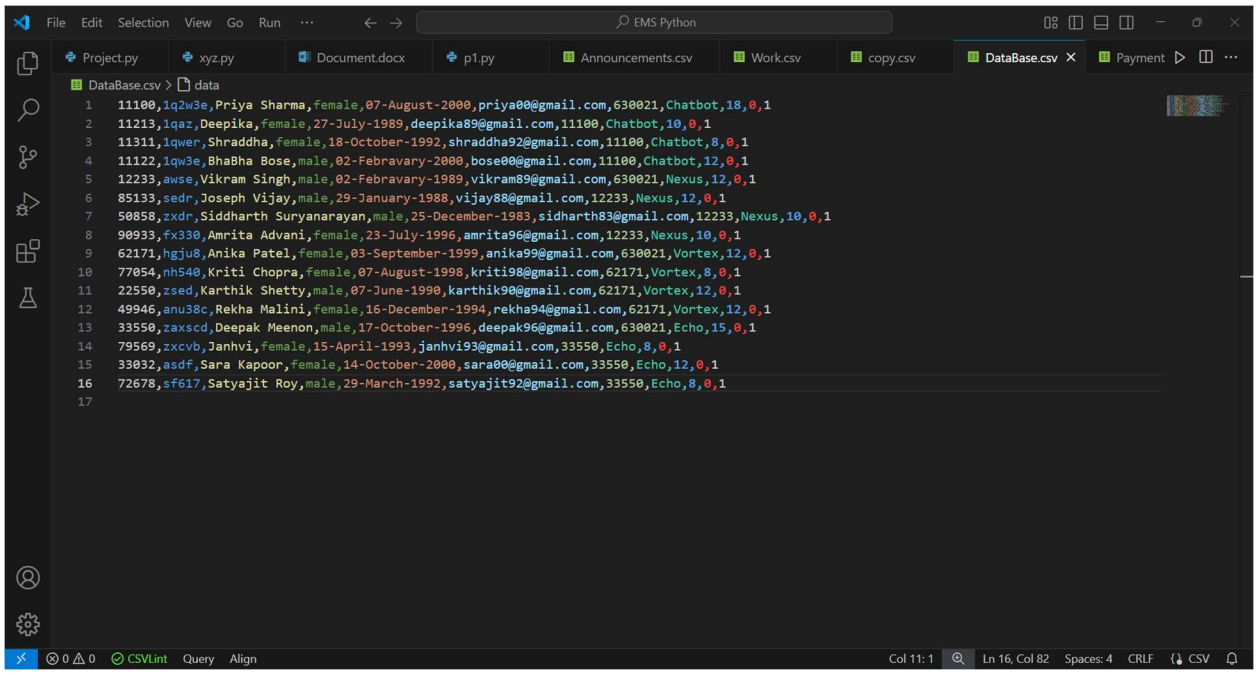
6.Team Members:



7.Employee List:



Database Design



Arrangement of files:

The SoureCode.py ,DataBase.csv, Announcement.csv, Payments.csv, copy.csv, and work.csv files should keep in the same path. Otherwise, you will see file not found error.

SOURCE CODE

```
import time
import os
import getpass
import msvcrt
import csv
import ctypes
import sys
import random



class Colour:
    red = "\033[0;31m"
    blue = "\033[0;34m"
    green = "\033[0;32m"
    cyan = "\033[0;36m"
    yellow = "\033[1;33m"
    light_green = "\033[1;32m"
    light_purple = "\033[1;35m"
    light_gray = "\033[0;37m"
    dark_gray = "\033[1;30m"
    light_red = "\033[1;31m"
    orange = "\033[38;5;208m"

    bold = "\033[1m"
    blink = "\033[5m"
```

```
    end = "\033[0m"



class COORD(ctypes.Structure):
    _fields_ = [("X", ctypes.c_short), ("Y", ctypes.c_short)]

    def __init__(self, x, y):
        self.X = x
        self.Y = y



class Position():
    STD_OUTPUT_HANDLE = -11
    hOut = ctypes.windll.kernel32.GetStdHandle(STD_OUTPUT_HANDLE)

    def __init__(self, x, y):
        self.pos = COORD(x, y)

    def show(self):
        ctypes.windll.kernel32.SetConsoleCursorPosition(self.hOut, self.pos)

    def clearText(self):
        ctypes.windll.kernel32.SetConsoleCursorPosition(self.hOut, self.pos)
        print(" "*self.maxlength)



class TextField():
```

```
    STD_OUTPUT_HANDLE = -11
    hOut = ctypes.windll.kernel32.GetStdHandle(STD_OUTPUT_HANDLE)
    TEXT = ""

    def __init__(self, x, y, maxlength):
        self.pos = COORD(x, y)
        self.maxlength = maxlength

    def setText(self, text):
        self.text = text

    def show(self):
        ctypes.windll.kernel32.SetConsoleCursorPosition(self.hOut, self.pos)
        self.pw = getpass.getpass()
        return (self.pw)
        del self

    def clearText(self):
        ctypes.windll.kernel32.SetConsoleCursorPosition(self.hOut, self.pos)
        print(" "*self.maxlength)

    def _del_(self):
        self.clearText()


colour = Colour()
```

```
class Invalid_Choice(Exception):
    pass



def clear_screen():
    os.system('cls')



def delete_last_line():
    sys.stdout.write('\x1b[1A')
    sys.stdout.write('\x1b[2K')



def GUI():
    global flag
    if (flag == 0):
        clear_screen()
        print("\n\n\n\n\n\n")
        print(f"{colour.cyan}{colour.bold}EPMS{colour.end}".center(150))
        time.sleep(1.5)  # 1.5
        clear_screen()
        print("\n\n\n\n\n\n")
        print(
            f"{colour.cyan}{colour.bold}Employee Payroll Management
System{colour.end}\n".center(150))
        time.sleep(1.5)  # 1.5
```

```
    print("Getting Started...".center(135))
    time.sleep(3)  # 3


while (True):
    clear_screen()
    print("Employee Payroll Management System".center(140))
    print("***  LOGIN  ***".center(140))
    print()
    id = input("\t\t\t\t\t\t\t\tUser id:")
    if (id == "630021"):
        pw = getpass.getpass("\t\t\t\t\t\t\t\tpassword:")
        if (pw == "aaa"):
            print()
            print(
                f"{colour.light_green}Login Successful{colour.end}".center(156))
            time.sleep(2)  # 1
            id = Admin_GUI()
            return (id)
        else:
            print()
            print(
                f"{colour.red}Incorrect Password{colour.end}".center(156))
            time.sleep(2)  # 1
            continue
    else:
        file = open('DataBase.csv', "r")
        check = csv.reader(file)
```

```
for row in check:
    if (id != row[0]):
        continue
    else:
        if (row[1] == "0"):
            print(
                f"\n\t\t\t\t\t\t\t\t{colour.light_green}NEW EMPLOYEE...")
            time.sleep(2)  # 2
            file.close()
            id = New_Employee(row)
            return (id)
        pw = getpass.getpass("\t\t\t\t\t\t\tPassword:")
        if (pw != row[1]):
            print()
            print(
                f"\t\t\t\t\t\t\t{colour.red}{colour.bold}Incorrect Password{colour.end}")
            while (True):
                textfield = TextField(x=64, y=4, maxlength=20)
                textfield.setText("Password:")
                pw = textfield.show()
                if (pw != row[1]):
                    print()
                    print(
                        f"\t\t\t\t\t\t\t{colour.red}{colour.bold}Incorrect Password{colour.end}")
                    continue
                else:
                    print()
```

```
                    print(
                        f"{colour.light_green}Login Successful{colour.end}".center(156))
                    time.sleep(2)  # 3
                    file.close()
                    return (id)
            else:
                print()
                print(
                    f"{colour.light_green}Login Successful{colour.end}".center(156))
                time.sleep(2)  # 3
                file.close()
                return (row[0])
        print()
        print(
            f"\t\t\t\t\t\t\t\t{colour.red}{colour.bold}ID not found{colour.end}")
        time.sleep(3)


def Admin_Menu_Modifier():
    file = open('DataBase.csv', "r")
    DataBase = csv.reader(file)
    pw_count, work_count = 0, 0
    for row2 in DataBase:
        if (row2[1] == "0"):
            pw_count = pw_count+1
        elif (row2[7] == "0"):
            work_count = work_count+1
```

```
        elif (row2[6] == "630021"):
            if (row2[11] == "-1"):
                work_count = work_count+1
            elif (row2[11] == "1"):
                work_count = work_count+1
    file.close()
    return (pw_count, work_count)



def Admin_GUI():
    if (Admin_GUI_flag == 0):
        clear_screen()
        print("\n\n\n\n\n\n\n\n\n\n")
        print(
            f"{colour.green}{colour.bold}Welcome Mr.{Admin}  {colour.end}\n".center(150))
        time.sleep(2)  # 1
    clear_screen()
    print(
        f"{colour.dark_gray}Employee Payroll Management System{colour.end}".center(150))
    print(f"{colour.green}{colour.bold}Mr.{Admin}")
    print(f"Admin{colour.end}")
    if (Admin_flag == 0):
        id = Admin_Menu()
        if (Admin_GUI_flag == 0):
            return (id)
```

```
def Admin_Menu():
    global flag
    global Admin_GUI_flag, Admin_flag
    pw_count, work_count = Admin_Menu_Modifier()
    while (True):
        print("\n\t\t\t\t\t\t\t\t1.Salary Payment")
        print("\t\t\t\t\t\t\t2.Add Team Leader")
        print("\t\t\t\t\t\t\t3.Add Employee")
        print("\t\t\t\t\t\t\t4.Employee List")
        print("\t\t\t\t\t\t\t5.Announce")
        if ((pw_count+work_count) == 0):
            print("\t\t\t\t\t\t\t6.Assign Work")
        else:
            print(
                f"\t\t\t\t\t\t\t6.Assign Work{colour.orange} ({pw_count+work_count}){colour.end}")
        print("\t\t\t\t\t\t\t7.Logout")
        try:
            op = int(input("\n\t\t\t\t\t\t\tEnter your choice : "))
            if ((op > 7) or (op < 1)):
                raise Invalid_Choice
            break
        except:
            print(
                f"\n\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
            time.sleep(2)  # 1
            Admin_GUI_flag = 1
            Admin_flag = 1
```

```
            Admin_GUI()
            Admin_flag = 0
            continue
        match(op):
            case 1:
                Admin_flag = 1
                Admin_GUI_flag = 1
                id = Salary_Payment()
                return (id)
            case 2:
                Admin_flag = 1
                Admin_GUI_flag = 1
                id = Add_Team_Leader(1)
                return (id)
            case 3:
                Admin_flag = 1
                Admin_GUI_flag = 1
                id = Add_Team_Leader(2)
                return (id)
            case 4:
                Admin_flag = 1
                Admin_GUI_flag = 1
                id = Employee_List()
                return (id)
            case 5:
                Admin_flag = 1
                Admin_GUI_flag = 1
```

```
            id = Announce()
            return (id)
        case 6:
            Admin_flag = 1
            Admin_GUI_flag = 1
            id = Assign_Work()
            return (id)
        case 7:
            flag = 1
            Admin_flag = 0
            Admin_GUI_flag = 0
            id = GUI()
            return (id)


def Team_Leader_GUI(row):
    if (row[3] == "male"):
        gender = "Mr"
    else:
        gender = "Miss"
    if (Team_Leader_GUI_flag == 0):
        clear_screen()
        print("\n\n\n\n\n\n\n\n\n\n")
        print(
            f"{colour.cyan}{colour.bold}Welcome {gender}. {row[2]}{colour.end}\n".center(150))
        time.sleep(2)  # 2
    clear_screen()
```

```
    print(f"{colour.dark_gray}Employee Payroll Management System{colour.end}".center(150))
    print(f"{colour.light_purple}{gender}. {row[2]}")
    print("Team Leader")
    print(f"Project : {row[7]}{colour.end}")
    if (Team_Leader_flag == 0):
        id = Team_Leader_Menu(row)
        if (Team_Leader_GUI_flag == 0):
            return (id)


def Team_Leader_Menu(row):
    global flag, Team_Leader_flag, Team_Leader_GUI_flag
    global Employee_flag, Employee_GUI_flag
    while (True):
        if (row[9] == "1"):
            print(
                f"\n\t\t\t\t\t\t\t\t1.Salary Status {colour.orange}(1){colour.end}")
        else:
            print("\n\t\t\t\t\t\t\t\t1.Salary Status")
        print("\t\t\t\t\t\t\t2.Profile")
        print("\t\t\t\t\t\t\t3.Team Members")
        if (row[10] == "1"):
            print(
                f"\t\t\t\t\t\t\t4.Announcements {colour.orange}(1){colour.end}")
        else:
            print("\t\t\t\t\t\t\t4.Announcements")
        if (row[11] == "-1"):
```

```
            print(
                f"\t\t\t\t\t\t\t\t5.Work Status {colour.orange}(1){colour.end}")
        else:
            print("\t\t\t\t\t\t\t\t5.Work Status")
        print("\t\t\t\t\t\t\t\t6.Logout")
        try:
            op = int(input("\n\t\t\t\t\t\t\t\tEnter your choice : "))
            if ((op > 6) or (op < 1)):
                raise Invalid_Choice
            break
        except:
            print(
                f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
            time.sleep(3)
            Team_Leader_GUI_flag = 1
            Team_Leader_flag = 1
            Team_Leader_GUI(row)
            Team_Leader_flag = 0
            continue

    match op:
        case 1:
            Team_Leader_flag = 1
            Team_Leader_GUI_flag = 1
            id = Salary_Status(row)
            return (id)
        case 2:
```

```
    Team_Leader_flag = 1
    Team_Leader_GUI_flag = 1
    id = Profile(row)
    return (id)
case 3:
    Team_Leader_flag = 1
    Team_Leader_GUI_flag = 1
    id = Team_Members(row)
    return (id)
case 4:
    Team_Leader_flag = 1
    Team_Leader_GUI_flag = 1
    id = Announcements(row)
    return (id)
case 5:
    Team_Leader_flag = 1
    Team_Leader_GUI_flag = 1
    id = Work_Status(row)
    return (id)
case 6:
    flag = 1
    Team_Leader_flag = 0
    Team_Leader_GUI_flag = 0
    Employee_GUI_flag = 0
    Employee_flag = 0
    id = GUI()
    return (id)
```

```
def Employee_GUI(row):
    if (row[3] == "male"):
        gender = "Mr"
    else:
        gender = "Miss"
    if (Employee_GUI_flag == 0):
        clear_screen()
        print("\n\n\n\n\n\n\n\n\n\n")
        print(
            f"{colour.cyan}{colour.bold}Welcome {gender}. {row[2]}{colour.end}\n".center(150))
        time.sleep(0.5)  # 2
    clear_screen()
    print(f"{colour.dark_gray}{colour.bold}Employee Payroll Management System".center(150))
    print(f"{colour.light_purple}{gender}. {row[2]}")
    file = open('DataBase.csv', "r")
    DataBase = csv.reader(file)
    for row2 in DataBase:
        if (row2[0] == row[6]):
            Team_Leader_Name = row2[2]
            break
    file.close()
    print(f"Team Leader : {Team_Leader_Name}")
    print(f"Project : {row[7]}{colour.end}")
    if (Employee_flag == 0):
        id = Employee_Menu(row)
```

```
        if (Employee_GUI_flag == 0):
            return (id)


def Employee_Menu(row):
    global flag
    global Team_Leader_flag, Team_Leader_GUI_flag
    global Employee_flag, Employee_GUI_flag
    while (True):
        if (row[9] == "1"):
            print(
                f"\n\t\t\t\t\t\t\t\t1.Salary Status {colour.orange}(1){colour.end}")
        else:
            print("\n\t\t\t\t\t\t\t\t1.Salary Status")
        print("\t\t\t\t\t\t\t2.Profile")
        print("\t\t\t\t\t\t\t3.Team Members")
        if (row[10] == "1"):
            print(
                f"\t\t\t\t\t\t\t4.Announcements {colour.orange}(1){colour.end}")
        else:
            print("\t\t\t\t\t\t\t4.Announcements")
        print("\t\t\t\t\t\t\t5.Logout")
        try:
            op = int(input("\n\t\t\t\t\t\t\tEnter your choice : "))
            if ((op > 6) or (op < 1)):
                raise Invalid_Choice
            break
```

```
    except:
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
        time.sleep(3)
        Employee_GUI_flag = 1
        Employee_flag = 1
        Employee_GUI(row)
        Employee_flag = 0
        continue
match op:
    case 1:
        Employee_GUI_flag = 1
        Employee_flag = 1
        id = Salary_Status(row)
        return (id)
    case 2:
        Employee_GUI_flag = 1
        Employee_flag = 1
        id = Profile(row)
        return (id)
    case 3:
        Employee_GUI_flag = 1
        Employee_flag = 1
        id = Team_Members(row)
        return (id)
    case 4:
        Employee_GUI_flag = 1
```

```
            Employee_flag = 1
            id = Announcements(row)
            return (id)
        case 5:
            flag = 1
            Team_Leader_flag = 0
            Team_Leader_GUI_flag = 0
            Employee_GUI_flag = 0
            Employee_flag = 0
            id = GUI()
            return (id)



def Salary_Payment():
    global Admin_flag, file
    while (True):
        Admin_GUI()
        print(
            f"\n\t\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}SALARY PAYMENT{colour.end}")
        print("\n")
        filex = open('DataBase.csv', "r")
        DataBase = csv.reader(filex)
        payroll_yearly = 0
        for row in DataBase:
            payroll_yearly = payroll_yearly+int(row[8])
        filex.close()
        payroll_monthly = payroll_yearly/12
```

```
    if (payroll_yearly >= 100):
        print(
            f"\n\t\t\t\t\t\tYearly Payroll : {payroll_yearly/100} Crores")
    else:
        print(f"\n\t\t\t\t\t\tYearly Payroll : {payroll_yearly} Lakhs")
    if (payroll_monthly >= 100):
        print(
            f"\t\t\t\t\t\tMonthly Payroll : {round(payroll_monthly/100, 2)} Crores")
    else:
        print(
            f"\t\t\t\t\t\tMonthly Payroll : {round(payroll_monthly, 2)} Lakhs")
    print("\n")
    print("\t\t\t\t\t\t1.Pay Salary")
    print("\t\t\t\t\t\t2.Back")
    try:
        op = int(input("\n\t\t\t\t\t\tEnter your choice : "))
        if ((op > 2) or (op < 1)):
            raise Invalid_Choice
        break
    except:
        print(
            f"\n\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
        time.sleep(2)
        continue
match op:
    case 1:
        print(
```

```
    f"\n\t\t\t\t\t\tDate of Payment : {colour.dark_gray}dd-mm-yyyy{colour.end}")
position = Position(x=66, y=17)
position.show()
dop = input()
file1 = open('DataBase.csv', "r")
file2 = open('modify.csv', "w", newline="")
DataBase2 = csv.reader(file1)
copy = csv.writer(file2)
for row in DataBase2:
    data = row
    data[9] = "1"
    copy.writerow(data)
file1.close()
file2.close()
file.close()
os.remove('DataBase.csv')
os.rename('modify.csv', 'DataBase.csv')
file3 = open('Payments.csv', "r")
file4 = open('modify.csv', "w", newline="")
DataBase3 = csv.reader(file3)
copy = csv.writer(file4)
for row2 in DataBase3:
    data = row2
    data.insert(1, dop)
    copy.writerow(data)
file3.close()
file4.close()
```

```
            os.remove('Payments.csv')
            os.rename('modify.csv', 'Payments.csv')
            print(f"\n\t\t\t\t\t\t{colour.light_green}Processing Payments...")
            time.sleep(2)
            delete_last_line()
            print(f"\t\t\t\t\t\tPayments Successfull.{colour.end}")
            print(
                f"\t\t\t\t\t\t{colour.dark_gray}Press Enter for Main Memu...")
            msvcrt.getch()
            Admin_flag = 0
            id = Admin_GUI()
            return (id)
        case 2:
            Admin_flag = 0
            id = Admin_GUI()
            return (id)


def New_Employee(row):
    global flag, file
    Data = row
    clear_screen()
    print("\n\n\n\n\n\n")
    print(
        f"{colour.light_green}{colour.bold}WELCOME TO EMPS{colour.end}\n".center(150))
    time.sleep(1)
    print(
```

```
        f"{colour.light_green}{colour.bold}EMPLOYEE PAYROLL MANAGEMENT
SYSTEM{colour.end}\n".center(150))
    time.sleep(2)
    clear_screen()
    print(f"{colour.dark_gray}{colour.bold}Employee Payroll Management
System{colour.end}".center(150))
    pw = input(f"\n\t\t\t\t\t\t\tCreate Password : ")
    print(f"\n\t\t\t\t\t\t\t{colour.light_green}{colour.bold}Password Saved")
    Data[1] = pw
    time.sleep(2)
    clear_screen()
    print(f"{colour.dark_gray}{colour.bold}Employee Payroll Management System".center(150))
    print(
        f"\n\t\t\t\t\t\t\t{colour.yellow}{colour.bold}DATA ENTRY{colour.end}")
    c = 0
    Name = input("\n\t\t\t\t\t\t\tName : ")
    print(f"\n\t\t\t\t\t\t\t{colour.light_green}Saving Data...{colour.end}")
    Data[2] = Name
    time.sleep(1)
    delete_last_line()
    delete_last_line()
    while (True):
        if (c == 1):
            clear_screen()
            print(
                f"{colour.dark_gray}{colour.bold}Employee Payroll Management
System".center(150))
            print(
```

```
            f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}DATA ENTRY{colour.end}")
        print(f"\n\t\t\t\t\t\t\tName : {Name}")
    print("\n\t\t\t\t\t\t\tGender : ")
    print("\n\t\t\t\t\t\t\t\t1.Male")
    print("\t\t\t\t\t\t\t\t2.Female")
    try:
        op = int(input("\n\t\t\t\t\t\tEnter your choice : "))
        if ((op > 2) or (op < 1)):
            raise Invalid_Choice
        break
    except:
        print(
            f"\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
        time.sleep(2)
        c = 1
    clear_screen()

match op:
    case 1:
        Gender = "male"
        print(
            f"\n\t\t\t\t\t\t\t{colour.light_green}Saving Data...{colour.end}")
        Data[3] = Gender
        time.sleep(1)
        delete_last_line()
    case 2:
        Gender = "female"
```

```
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.light_green}Saving Data...{colour.end}")
        Data[3] = Gender
        time.sleep(1)
        delete_last_line()
while (True):
    clear_screen()
    print(
        f"{colour.dark_gray}{colour.bold}Employee Payroll Management System".center(150))
    print(
        f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}DATA ENTRY{colour.end}")
    print(f"\n\t\t\t\t\t\t\tName : {Name}")
    print(f"\t\t\t\t\t\t\tGender : {Gender}")
    print(
        f"\n\t\t\t\t\t\t\tDate of Birth : {colour.dark_gray}dd-mm-yyyy{colour.end}")
    position = Position(x=72, y=7)
    position.show()
    dob = input()
    dob = DOB_Modification(dob)
    if (dob == "0"):
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Date of Birth")
        time.sleep(2)
        continue
    print(
        f"\n\t\t\t\t\t\t\t\t{colour.light_green}Saving Data...{colour.end}")
    Data[4] = dob
```

```
    time.sleep(1)
    delete_last_line()
    break
while (True):
    clear_screen()
    print(
        f"{colour.dark_gray}{colour.bold}Employee Payroll Management System".center(150))
    print(
        f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}DATA ENTRY{colour.end}")
    print(f"\n\t\t\t\t\t\t\tName : {Name}")
    print(f"\t\t\t\t\t\t\tGender : {Gender}")
    print(
        f"\t\t\t\t\t\t\tDate of Birth : {dob}")
    email = input("\n\t\t\t\t\t\t\tEmail id : ")
    if ("@gmail.com" in email):
        pass
    else:
        print(
            f"\n\t\t\t\t\t\t\t{colour.orange}Entered email id is \"NOT VALID\"")
        print(
            f"\t\t\t\t\t\t\t{colour.light_red}Press Enter for \"TRY AGAIN\"...{colour.end}")
        msvcrt.getch()
        continue
    print(
        f"\n\t\t\t\t\t\t\t{colour.light_green}Saving Data...{colour.end}")
    Data[5] = email
    time.sleep(1)
```

```
    delete_last_line()
    break
clear_screen()
print(f"{colour.dark_gray}{colour.bold}Employee Payroll Management System".center(150))
print(
    f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}DATA ENTRY{colour.end}")
print(f"\n\t\t\t\t\t\tName : {Name}")
print(f"\t\t\t\t\t\tGender : {Gender}")
print(
    f"\t\t\t\t\t\tDate of Birth : {dob}")
print(f"\t\t\t\t\t\tEmail id : {email}")
print(f"\n\n\t\t\t\t\t\t{colour.light_green}Data Saved,Thankyou.")
print(
    f"\t\t\t\t\t\t{colour.dark_gray}Press Enter to Log in...{colour.end}")
file1 = open('DataBase.csv', "r")
file2 = open('modify.csv', "w", newline="")
DataBase = csv.reader(file1)
copy = csv.writer(file2)
for row2 in DataBase:
    if (row2[0] == Data[0]):
        copy.writerow(Data)
    else:
        copy.writerow(row2)
file1.close()
file2.close()
os.remove('DataBase.csv')
os.rename('modify.csv', 'DataBase.csv')
```

```
    msvcrt.getch()
    flag = 1
    id = GUI()
    return (id)


def Salary_Calculation(CTC):
    if (CTC <= 4):
        Tax = 0
    elif ((CTC > 4) and (CTC <= 8)):
        Tax = 5
    elif ((CTC > 8) and (CTC <= 12)):
        Tax = 10
    elif ((CTC > 12) and (CTC <= 16)):
        Tax = 15
    elif ((CTC > 16) and (CTC <= 20)):
        Tax = 20
    elif ((CTC > 20) and (CTC <= 24)):
        Tax = 25
    elif (CTC > 24):
        Tax = 30
    salary = Tax/100
    salary = int(salary*(CTC*100000))
    salary = int((CTC*100000)-salary-1000)
    salary = int(salary/12)
    return (salary, Tax)
```

```
def Salary_Status(row):
    global Team_Leader_flag
    global Employee_flag
    CTC = int(row[8])
    while (True):
        if (row[6] == "630021"):
            Team_Leader_GUI(row)
        else:
            Employee_GUI(row)
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}SALARY STATUS{colour.end}")
        print("\n")
        print(f"\t\t\t\t\t\t\tCTC= {CTC} LPA")
        Salary, Tax = Salary_Calculation(CTC)
        print(f"\t\t\t\t\t\t\tIncome Tax = {Tax} %")
        print("\t\t\t\t\t\t\tProfessional Tax = ₹ 1000")
        print(f"\t\t\t\t\t\t\tSalary (/month) = ₹ {Salary}")
        print("\n")
        if (row[9] == "1"):
            print(
                f"\n\t\t\t\t\t\t\t\t1.Payment History {colour.orange}(1){colour.end}")
        else:
            print("\n\t\t\t\t\t\t\t\t1.Payment History")
        print("\t\t\t\t\t\t\t2.Back")
        try:
            op = int(input("\n\t\t\t\t\t\t\tEnter your choice : "))
```

```
            if ((op > 2) or (op < 1)):
                raise Invalid_Choice
            break
        except:
            print(
                f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
            time.sleep(2)
            continue
    match op:
        case 1:
            id = Payment_History(row)
            return (id)
        case 2:
            if (row[6] == "630021"):
                Team_Leader_flag = 0
                id = Team_Leader_GUI(row)
                return (id)
            else:
                Employee_flag = 0
                id = Employee_GUI(row)
                return (id)


def Payment_History(row):
    global Team_Leader_GUI_flag, Team_Leader_flag, file
    global Employee_GUI_flag, Employee_flag
    if (row[6] == "630021"):
```

```
        Team_Leader_GUI_flag = 1
        Team_Leader_flag = 1
        Team_Leader_GUI(row)
    else:
        Employee_GUI_flag = 1
        Employee_flag = 1
        Employee_GUI(row)
    print(
        f"\n\t\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}PAYMENT HISTORY{colour.end}")
    filex = open('Payments.csv', "r")
    DataBase = csv.reader(filex)

print("\t\t\t\t\t_____
_")
    print(
        f"\t\t\t\t\t{colour.blue}{colour.bold}  S.No.     DATE OF PAYMENT    PAYMENT
STATUS    PATMENT DEPOSITED{colour.end}")

print("\t\t\t\t\t_____
_")
    S_No = 1
    Salary, Tax = Salary_Calculation(int(row[8]))
    for row2 in DataBase:
        if (row2[0] == row[0]):
            payment = row2
    filex.close()
    if (row[9] == "1"):
        print(
```

```
        f"\t\t\t\t\t{colour.light_green}{colour.bold}    {S_No}          {payment[1]}       Successfull
{Salary}")
    S_No += 1
    for i in range(0, len(payment)):
        if ((i == 0) or (i == 1)):
            continue
        else:
            try:
                print(
                    f"\t\t\t\t\t{colour.dark_gray}{colour.bold}    {S_No}          {payment[i]}
Successfull          {Salary}")
                S_No += 1
            except:
                pass
    file1 = open('DataBase.csv', "r")
    file2 = open('modify.csv', "w", newline="")
    DataBase2 = csv.reader(file1)
    copy = csv.writer(file2)
    data = row
    data[9] = "0"
    for row2 in DataBase2:
        if (row2[0] == row[0]):
            copy.writerow(data)
        else:
            copy.writerow(row2)
    file1.close()
    file2.close()
    file.close()
```

```
        os.remove('DataBase.csv')
        os.rename('modify.csv', 'DataBase.csv')
    else:
        for i in range(0, len(payment)):
            if (i == 0):
                continue
            else:
                try:
                    print(
                        f"\t\t\t\t\t{colour.dark_gray}{colour.bold}     {S_No}          {payment[i]}
Successfull          {Salary}")
                    S_No += 1
                except:
                    pass
    print(
        f"\n\n\t\t\t\t\t\t{colour.dark_gray}Press Enter for Main Menu...{colour.end}")
    msvcrt.getch()
    if (row[6] == "630021"):
        Team_Leader_flag = 0
        id = Team_Leader_GUI(row)
        return (id)
    else:
        Employee_flag = 0
        id = Employee_GUI(row)
        return (id)
```

```
def Profile(row):
    global Team_Leader_flag
    global Employee_flag
    while (True):
        if (row[6] == "630021"):
            Team_Leader_GUI(row)
        else:
            Employee_GUI(row)
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}PROFILE{colour.end}")
        print("\n")
        print(f"\t\t\t\t\t\t  Name : {row[2]}")
        print(f"\t\t\t\t\t\t  Employee ID : {row[0]}")
        print(f"\t\t\t\t\t\t  gender : {row[3]}")
        print(f"\t\t\t\t\t\t  Date of Birth : {row[4]}")
        print(f"\t\t\t\t\t\t  Email Address : {row[5]}")
        print("\n")
        print("\n\t\t\t\t\t\t\t\t1.Edit")
        print("\t\t\t\t\t\t\t\t2.Back")
        try:
            op = int(input("\n\t\t\t\t\t\t\tEnter your choice : "))
            if ((op > 2) or (op < 1)):
                raise Invalid_Choice
            break
        except:
            print(
                f"\n\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
```

```
            time.sleep(1)  # 3
            continue
        match op:
            case 1:
                id = Edit_Profile(row)
                return (id)
            case 2:
                if (row[6] == "630021"):
                    Team_Leader_flag = 0
                    id = Team_Leader_GUI(row)
                    return (id)
                else:
                    Employee_flag = 0
                    id = Employee_GUI(row)
                    return (id)


def DOB_Modification(NewData):
    try:
        NewData_list = list(NewData)
        NewData_list.insert(0, "".join([NewData_list[0], NewData_list[1]]))
        del NewData_list[1]
        del NewData_list[1]
        NewData_list.insert(2, "".join([NewData_list[2], NewData_list[3]]))
        del NewData_list[3]
        del NewData_list[3]
        NewData_list.insert(4, "".join(
```

```
        [NewData_list[4], NewData_list[5], NewData_list[6], NewData_list[7]]))
    del NewData_list[5]
    del NewData_list[5]
    del NewData_list[5]
    del NewData_list[5]
except:
    return ("0")
if (NewData_list[2] == "01"):
    NewData_list.insert(2, "January")
    if (int(NewData_list[0]) > 31):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "02"):
    NewData_list.insert(2, "February")
    if (int(NewData_list[0]) > 28):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "03"):
    NewData_list.insert(2, "March")
    if (int(NewData_list[0]) > 31):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "04"):
    NewData_list.insert(2, "April")
    if (int(NewData_list[0]) > 30):
        return ("0")
    del NewData_list[3]
```

```
elif (NewData_list[2] == "05"):
    NewData_list.insert(2, "May")
    if (int(NewData_list[0]) > 31):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "06"):
    NewData_list.insert(2, "June")
    if (int(NewData_list[0]) > 30):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "07"):
    NewData_list.insert(2, "July")
    if (int(NewData_list[0]) > 31):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "08"):
    NewData_list.insert(2, "August")
    if (int(NewData_list[0]) > 31):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "09"):
    NewData_list.insert(2, "September")
    if (int(NewData_list[0]) > 30):
        return ("0")
    del NewData_list[3]
elif (NewData_list[2] == "10"):
    NewData_list.insert(2, "October")
```

```
        if (int(NewData_list[0]) > 31):
            return ("0")
        del NewData_list[3]
    elif (NewData_list[2] == "11"):
        NewData_list.insert(2, "November")
        if (int(NewData_list[0]) > 30):
            return ("0")
        del NewData_list[3]
    elif (NewData_list[2] == "12"):
        NewData_list.insert(2, "December")
        if (int(NewData_list[0]) > 31):
            return ("0")
        del NewData_list[3]
    elif (int(NewData_list[2]) > 12):
        return ("0")
    elif ((int(NewData_list[4]) > 2025) or ((int(NewData_list[4]) < 1950))):
        return ("0")
    else:
        return ("0")

    NewData_list.insert(0, "".join(
        [NewData_list[0], NewData_list[1], NewData_list[2], NewData_list[3], NewData_list[4],]))
    NewData = NewData_list[0]
    return (NewData)


def File_Copy():
```

```
    global file
    file.close()
    os.remove('DataBase.csv')
    os.rename('modify.csv', 'DataBase.csv')
    print(
        f"\n\t\t\t\t\t\t\t  {colour.dark_gray}{colour.bold}Making Changes...{colour.end}")
    time.sleep(1)


def Edit_Profile(row):
    global Team_Leader_flag
    global Employee_flag
    while (True):
        file1 = open('DataBase.csv', "r")
        file2 = open('modify.csv', "w", newline="")
        DataBase = csv.reader(file1)
        copy = csv.writer(file2)
        Details = row
        if (row[6] == "630021"):
            Team_Leader_GUI(row)
        else:
            Employee_GUI(row)
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}EDIT PROFILE{colour.end}")
        print("\n")
        print(f"\t\t\t\t\t\t\t  1.Name : {row[2]}")
        print(f"\t\t\t\t\t\t\t  2.Employee ID : {row[0]}")
```

```
print(f"\t\t\t\t\t\t\t  3.gender : {row[3]}")
print(f"\t\t\t\t\t\t\t  4.Date of Birth : {row[4]}")
print(f"\t\t\t\t\t\t\t  5.Email Address : {row[5]}")
print(f"\t\t\t\t\t\t\t  6.For main menu")
try:
    op = int(input("\n\t\t\t\t\t\t\t  While detail do you want to edit : "))
    if ((op > 6) or (op < 1)):
        raise Invalid_Choice
except:
    print(
        f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
    time.sleep(2)
    continue
else:
    print("\n")
    match op:
        case 1:
            NewData = input(f"\t\t\t\t\t\t\t  Enter new name : ")
            for i in range(0, len(row)):
                if (i == 2):
                    Details[2] = NewData
            for row2 in DataBase:
                if (row2[0] == row[0]):
                    copy.writerow(Details)
                else:
                    copy.writerow(row2)
            file1.close()
```

```
            file2.close()
            file.close()
            File_Copy()
            continue
        case 2:
            print(
                f"\t\t\t\t\t\t\t  {colour.orange}EMPLOYEE ID CANNOT BE CHANGED")
            print(
                f"\t\t\t\t\t\t\t  {colour.light_red}Press Enter to continue...{colour.end}")
            msvcrt.getch()
            continue
        case 3:
            NewData = input(f"\t\t\t\t\t\t\t  Enter new data : ")
            NewData = NewData.lower()
            if ((NewData == "male") or (NewData == "female")):
                pass
            else:
                print(
                    f"\n\t\t\t\t\t\t\t  {colour.orange}Gender can be either male or female")
                print(
                    f"\t\t\t\t\t\t\t  {colour.light_red}Press Enter for \"TRY AGAIN\"...{colour.end}")
                msvcrt.getch()
                continue

            for i in range(0, len(row)):
                if (i == 2):
                    Details[3] = NewData
```

```
                for row2 in DataBase:
                    if (row2[0] == row[0]):
                        copy.writerow(Details)
                    else:
                        copy.writerow(row2)
                file1.close()
                file2.close()
                File_Copy()
                continue
            case 4:
                print(
                    f"\t\t\t\t\t\t\t  Enter new Date of Birth : {colour.dark_gray}dd-mm-
yyyy{colour.end}")
                position = Position(x=84, y=18)
                position.show()
                while (True):
                    NewData = input()
                    NewData = DOB_Modification(NewData)
                    if (NewData == "0"):
                        print(
                            f"\t\t\t\t\t\t\t  {colour.red}{colour.bold}Invalid Date of Birth{colour.end}")
                        time.sleep(1)  # 2
                        delete_last_line()
                        delete_last_line()
                        print(
                            f"\t\t\t\t\t\t\t  Enter new Date of Birth : {colour.dark_gray}dd-mm-
yyyy{colour.end}")
                        position = Position(x=84, y=18)
```

```
            position.show()
            continue
        break
    for i in range(0, len(row)):
        if (i == 2):
            Details[4] = NewData
    for row2 in DataBase:
        if (row2[0] == row[0]):
            copy.writerow(Details)
        else:
            copy.writerow(row2)
    file1.close()
    file2.close()
    File_Copy()
    continue
case 5:
    NewData = input(f"\t\t\t\t\t\t\t  Enter new Email id : ")
    if ("@gmail.com" in NewData):
        pass
    else:
        print(
            f"\n\t\t\t\t\t\t\t  {colour.orange}Entered email id is \"NOT VALID\"")
        print(
            f"\t\t\t\t\t\t\t  {colour.light_red}Press Enter for \"TRY AGAIN\"...{colour.end}")
        msvcrt.getch()
        continue
    for i in range(0, len(row)):
```

```
                if (i == 2):
                    Details[5] = NewData
            for row2 in DataBase:
                if (row2[0] == row[0]):
                    copy.writerow(Details)
                else:
                    copy.writerow(row2)
            file1.close()
            file2.close()
            File_Copy()
            continue
        case 6:
            file1.close()
            file2.close()
            if (row[6] == "630021"):
                Team_Leader_flag = 0
                id = Team_Leader_GUI(row)
                return (id)
            else:
                Employee_flag = 0
                id = Employee_GUI(row)
                return (id)


def Team_Members(row):
    global Team_Leader_flag, Team_Leader_GUI_flag
    global Employee_flag, Employee_GUI_flag
```

```
    if (row[6] == "630021"):
        Team_Leader_GUI(row)
    else:
        Employee_GUI(row)
    print(
        f"\n\t\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}TEAM MEMBERS{colour.end}")
    print("\n")
    file = open('DataBase.csv', "r")
    DataBase = csv.reader(file)
    if (row[6] == "630021"):
        print(
            f"\t\t\t\t\t{colour.green}{colour.bold}Team
Leader:{row[2]}\t\t\t\tProject:{row[7]}{colour.end}")
    else:
        for row2 in DataBase:
            if (row2[0] == row[6]):
                print(
                    f"\t\t\t\t\t{colour.green}{colour.bold}Team
Leader:{row2[2]}\t\t\t\tProject:{row[7]}{colour.end}")

print("\t\t\t\t\t_____"
)
    print(
        f"\t\t\t\t\t      {colour.blue}{colour.bold}EMPLOYEE ID\t\t\t\t    NAME{colour.end}")

print("\t\t\t\t\t_____"
)
    file.seek(0)
    for row2 in DataBase:
```

```
        if (row[6] == "630021"):
            if (row2[6] == row[0]):
                print(f"\t\t\t\t\t        {row2[0]}\t\t\t\t\t {row2[2]}")
        else:
            if (row2[6] == row[6]):
                print(f"\t\t\t\t\t        {row2[0]}\t\t\t\t\t {row2[2]}")
    print("\n")
    print(
        f"\t\t\t\t\t{colour.dark_gray}{colour.bold}Press Enter for main Menu")
    msvcrt.getch()
    file.close()
    if (row[6] == "630021"):
        Team_Leader_flag = 0
        id = Team_Leader_GUI(row)
        return (id)
    else:
        Employee_flag = 0
        id = Employee_GUI(row)
        return (id)


def Announcements(row):
    global Team_Leader_GUI_flag, Team_Leader_flag, file
    global Employee_GUI_flag, Employee_flag
    if (row[6] == "630021"):
        Team_Leader_GUI_flag = 1
        Team_Leader_flag = 1
```

```
    Team_Leader_GUI(row)
else:
    Employee_GUI_flag = 1
    Employee_flag = 1
    Employee_GUI(row)
print(
    f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ANNOUNCEMENTS{colour.end}")
S_No = 1
filex = open('Announcements.csv', "r")
DataBase = csv.reader(filex)
for row2 in DataBase:
    if (row2[0] == row[0]):
        ann = row2
filex.close()
print("\n")
if (row[10] == "1"):
    try:
        print(
            f"\n\t\t{colour.light_green}{colour.bold}{S_No}.Date of Announcement : {ann[1]}")
        print(f"\t\t\t{ann[2]}")
    except:
        pass
    S_No += 1
    for i in range(0, len(ann), 2):
        if ((i == 0) or (i == 1) or (i == 2)):
            continue
        else:
```

```
            try:
                print(
                    f"\t\t{colour.dark_gray}{S_No}.Date of Announcement : {ann[i-1]}")
                print(f"\t\t\t{ann[i]}{colour.end}")
                S_No += 1
            except:
                pass
        file1 = open('DataBase.csv', "r")
        file2 = open('modify.csv', "w", newline="")
        DataBase2 = csv.reader(file1)
        copy = csv.writer(file2)
        data = row
        data[10] = "0"
        for row2 in DataBase2:
            if (row2[0] == row[0]):
                copy.writerow(data)
            else:
                copy.writerow(row2)
        file1.close()
        file2.close()
        file.close()
        os.remove('DataBase.csv')
        os.rename('modify.csv', 'DataBase.csv')
    else:
        for i in range(0, len(ann), 2):
            if (i == 0):
                continue
```

```
            else:
                try:
                    print(
                        f"\t\t{colour.dark_gray}{S_No}.Date of Announcement : {ann[i-1]}")
                    print(f"\t\t\t{ann[i]}{colour.end}")
                    S_No += 1
                except:
                    pass
        print(
            f"\n\n\t\t\t\t\t\t{colour.dark_gray}Press Enter for Main Menu...{colour.end}")
        msvcrt.getch()
        if (row[6] == "630021"):
            Team_Leader_flag = 0
            id = Team_Leader_GUI(row)
            return (id)
        else:
            Employee_flag = 0
            id = Employee_GUI(row)
            return (id)


def Work_Status(row):
    global Team_Leader_GUI_flag, Team_Leader_flag, file
    while (True):
        Team_Leader_GUI(row)
        print(
            f"\n\t\t\t\t\t\t\t{colour.yellow}{colour.bold}WORK STATUS{colour.end}")
```

```
print(f"\n\t\t\t\t\t\tProject : {row[7]}")
if (row[11] == "0"):
    print(
        f"\t\t\t\t\tWork Status : {colour.orange}In Progress{colour.end}")
elif (row[11] == "1"):
    print(
        f"\t\t\t\t\tWork Status : {colour.green}Completed{colour.end}")
elif (row[11] == "-1"):
    delete_last_line()
    print(
        f"\t\t\t\t\t\t     {colour.green}NEW  WORK  ASSIGNED\n{colour.end}")
    print(f"\t\t\t\t\t\tProject : {row[7]}")
    print("\n")
    print(
        f"\t\t\t\t\t\t{colour.dark_gray}Press enter to continue...{colour.end}")
    file1 = open('DataBase.csv', "r")
    file2 = open('modify.csv', "w", newline="")
    DataBase = csv.reader(file1)
    copy = csv.writer(file2)
    data = row
    data[11] = "0"
    for row1 in DataBase:
        if (row1[0] == row[0]):
            copy.writerow(data)
        else:
            copy.writerow(row1)
    file1.close()
```

```
            file2.close()
            file.close()
            os.remove('DataBase.csv')
            os.rename('modify.csv', 'DataBase.csv')
            msvcrt.getch()
            continue
        print("\n\t\t\t\t\t\t\t1.Update Work Status")
        print("\t\t\t\t\t\t\t2.Back")
        try:
            op = int(input("\n\t\t\t\t\t\tEnter your choice : "))
            if ((op > 2) or (op < 1)):
                raise Invalid_Choice
        except:
            print(
                f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
            time.sleep(2)
            continue
        match op:
            case 1:
                while (True):
                    Team_Leader_GUI(row)
                    print(
                        f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}UPDATING WORK
STATUS{colour.end}")
                    print(f"\n\t\t\t\t\t\t\tProject : {row[7]}")
                    print("\n\t\t\t\t\t\t\t1.In Progress")
                    print("\t\t\t\t\t\t\t2.Completed")
```

```
try:
    op1 = int(input("\n\t\t\t\t\t\tEnter your choice : "))
    if ((op1 > 2) or (op1 < 1)):
        raise Invalid_Choice
except:
    print(
        f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
    time.sleep(2)
    continue
match op1:
    case 1:
        if (row[11] == "0"):
            break
        if (row[11] == "0"):
            continue
        elif (row[11] == "1"):
            file1 = open('DataBase.csv', "r")
            file2 = open('modify.csv', "w", newline="")
            DataBase = csv.reader(file1)
            copy = csv.writer(file2)
            data = row
            data[11] = "0"
            for row1 in DataBase:
                if (row1[0] == row[0]):
                    copy.writerow(data)
                else:
                    copy.writerow(row1)
```

```
            file1.close()
            file2.close()
            file.close()
            os.remove('DataBase.csv')
            os.rename('modify.csv', 'DataBase.csv')
            break
        continue
    case 2:
        if (row[11] == "1"):
            break
        if (row[11] == "1"):
            continue
        elif (row[11] == "0"):
            file1 = open('DataBase.csv', "r")
            file2 = open('modify.csv', "w", newline="")
            DataBase = csv.reader(file1)
            copy = csv.writer(file2)
            data = row
            data[11] = "1"
            for row1 in DataBase:
                if (row1[0] == row[0]):
                    copy.writerow(data)
                else:
                    copy.writerow(row1)
            file1.close()
            file2.close()
            file.close()
```

```
                    os.remove('DataBase.csv')
                    os.rename('modify.csv', 'DataBase.csv')
                    break
                continue
            continue
        case 2:
            break
    Team_Leader_flag = 0
    id = Team_Leader_GUI(row)
    return (id)


def Add_Team_Leader(x):
    global Admin_flag
    while (True):
        Admin_GUI()
        if (x == 1):
            print(
                f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ADD TEAM LEADER{colour.end}")
        else:
            print(
                f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ADD EMPLOYEE{colour.end}")
        print("\n")
        print("")
        if (x == 1):
            NewData = ["0", "0", "0", "0", "0",
                       "0", "630021", "0", "0", "0", "0", "-1"]
```

```
        else:
            NewData = ["0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0"]
        print(f"\n\t\t\t\t\t\t\t\t\tNew Employee ID")
        print("\n\t\t\t\t\t\t\t\t\t1.Create an Id ")
        print("\t\t\t\t\t\t\t\t2.Create Random")
        print("\t\t\t\t\t\t\t\t3.Back")
        try:
            op = int(input("\n\t\t\t\t\t\t\t\tEnter Your Choice : "))
            if ((op > 3) or (op < 1)):
                raise Invalid_Choice
        except:
            print(
                f"\n\t\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
            time.sleep(2)
            continue
        match op:
            case 1:
                Admin_GUI()
                if (x == 1):
                    print(
                        f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ADD TEAM
LEADER{colour.end}")
                else:
                    print(
                        f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ADD EMPLOYEE{colour.end}")
                print("\n")
                print(
```

```
        f"\t\t\t\t\t\t\tCreant a New Employee ID : {colour.dark_gray}00000{colour.end}")
    position = Position(x=83, y=7)
    position.show()
    NewData[0] = input()
    if (len(NewData[0]) != 5):
        print(
            f"\n\t\t\t\t\t\t\t  {colour.orange}ID should contain 5 digits")
        print(
            f"\n\t\t\t\t\t\t\t  {colour.light_red}Press Enter for Try Again...{colour.end}")
        msvcrt.getch()
        continue
    else:
        pass
case 2:
    while (True):
        NewData[0] = random.randint(10000, 99999)
        file = open('DataBase.csv', "r")
        DataBase = csv.reader(file)
        c = 0
        if (True):
            for row2 in DataBase:
                if (row2[0] == NewData[0]):
                    c = 1
            if (c == 1):
                continue
            else:
                file.close()
```

```
                    break
            Admin_GUI()
            if (x == 1):
                print(
                    f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ADD TEAM
LEADER{colour.end}")
            else:
                print(
                    f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ADD EMPLOYEE{colour.end}")
            print("\n")
            print(
                f"\t\t\t\t\t\tNew Employee ID : {NewData[0]}")
        case 3:
            Admin_flag = 0
            id = Admin_GUI()
            return (id)
    while (True):
        print(
            f"\t\t\t\t\t\tAnual CTC of the employee : {colour.dark_gray}00 LPA{colour.end}")
        position = Position(x=84, y=8)
        position.show()
        NewData[8] = input()
        try:
            int(NewData[8])
            break
        except:
            print(f"\n\t\t\t\t\t\t{colour.red}Invalid CTC{colour.end}")
```

```
            time.sleep(2)
            delete_last_line()
            position = Position(x=56, y=8)
            position.show()
        break
if (NewData[6] == "0"):
    NewData = Add_Employee(NewData)


file = open('DataBase.csv', "a", newline="")
Data = csv.writer(file)
Data.writerow(NewData)
file.close()
print(f"\n\t\t\t\t\t\t\t\t{colour.light_green}Employee ID has created")
print(
    f"\t\t\t\t\t\t\t{colour.red}Press Enter for main Menu...{colour.end}")
file2 = open('Payments.csv', "a", newline="")
Data = csv.writer(file2)
Data.writerow([f"{NewData[0]}"])
file2.close()
file3 = open('Announcements.csv', "a", newline="")
Data = csv.writer(file3)
Data.writerow([f"{NewData[0]}"])
file3.close()
msvcrt.getch()
Admin_flag = 0
id = Admin_GUI()
return (id)
```

```
def Add_Employee(NewData):
    global file
    while (True):
        a = 0
        if (a == 1):
            Admin_GUI()
            print(
                f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ADD TEAM LEADER{colour.end}")
            print("\n")
            print(
                f"\t\t\t\t\t\t\tNew Employee ID : {NewData[0]}")
            print(
                f"\t\t\t\t\t\t\tAnual CTC of the employee : {NewData[8]}")
        print(f"\t\t\t\t\t\t\tAdding to a Team")
        print("\t\t\t\t\t\t_____________________________________________________________")
        print(
            f"\t\t\t\t\t\t{colour.blue}{colour.bold}  Choice    EMPLOYEE ID    PROJECT    TEAM MEMBERS{colour.end}")
        print("\t\t\t\t\t\t_____________________________________________________________")
        S_No = 1
        file1 = open('DataBase.csv', "r")
        DataBase1 = csv.reader(file1)
        file2 = open('copy.csv', "w", newline="")
        DataBase2 = csv.writer(file2)
        for row3 in DataBase1:
```

```
    DataBase2.writerow(row3)
file2.close()
file1.seek(0)
for row in DataBase1:
    Team = 0
    if (row[6] == "630021"):
        E_id = row[0]
        project = row[7]
        file3 = open('copy.csv', "r")
        DataBase3 = csv.reader(file3)
        for row2 in DataBase3:
            if (row2[6] == row[0]):
                Team += 1
        file3.seek(0)
        print(
            f"\t\t\t\t\t\t     {S_No}        {E_id}        {project}")
        position = Position(x=92, y=(13+(S_No-1)))
        position.show()
        print(Team)
        S_No += 1
try:
    op = int(input("\n\t\t\t\t\t\t\tEnter your choice : "))
    if ((op > S_No) or (op < 1)):
        raise Invalid_Choice
    break
except:
    print(
```

```
            f"\n\t\t\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
        time.sleep(1)  # 3
        a = 1
        continue
file1.seek(0)
i = 1
for row4 in DataBase1:
    if (row4[6] == "630021"):
        if (i == (op)):
            NewData[6] = row4[0]
            NewData[7] = row4[7]
        i += 1
print(f"\n\t\t\t\t\t\t\tTeam Leader : {NewData[6]}")
file1.close()
file1 = open('DataBase.csv', "r")
file2 = open('modify.csv', "w", newline="")
DataBase2 = csv.reader(file1)
copy = csv.writer(file2)
for row in DataBase2:
    if (row[0] == NewData[6]):
        data = row
        data[10] = "1"
        copy.writerow(data)
    else:
        copy.writerow(row)
file1.close()
file2.close()
```

```
    os.remove('DataBase.csv')
    os.rename('modify.csv', 'DataBase.csv')
    file3 = open('Announcements.csv', "r")
    file4 = open('modify.csv', "w", newline="")
    DataBase3 = csv.reader(file3)
    copy = csv.writer(file4)
    for row2 in DataBase3:
        if (row2[0] == NewData[6]):
            data = row2
            data.insert(
                1, f"New Employee(ID : {NewData[0]}) added to your team")
            data.insert(1, "----------")
            copy.writerow(data)
        else:
            copy.writerow(row2)
    file3.close()
    file4.close()
    os.remove('Announcements.csv')
    os.rename('modify.csv', 'Announcements.csv')
    return (NewData)


def Employee_List():
    global Admin_flag, file
    Admin_GUI()
    print(
        f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}EMPLOYEE LIST{colour.end}")
```

```
    print("\n")
    print(f"\t\t\t\t\t\tTeam Leaders List")

print("\t\t\t\t\t\t_____
_____")
    print(
        f"\t\t\t\t\t\t{colour.blue}{colour.bold}  S.No.    EMPLOYEE ID    PROJECT    TEAM
MEMBERS    PROJECT STATUS{colour.end}")

print("\t\t\t\t\t\t_____
______")
    S_No = 1
    file1 = open('DataBase.csv', "r")
    DataBase1 = csv.reader(file1)
    file2 = open('copy.csv', "w", newline="")
    DataBase2 = csv.writer(file2)
    for k in DataBase1:
        DataBase2.writerow(k)
    file2.close()
    file1.seek(0)
    for row in DataBase1:
        Team = 0
        if (row[6] == "630021"):
            E_id = row[0]
            project = row[7]
            file3 = open('copy.csv', "r")
            DataBase3 = csv.reader(file3)
            for row2 in DataBase3:
                if (row2[6] == row[0]):
```

```
                Team += 1
            file3.seek(0)
            print(
                f"\t\t\t\t\t\t     {S_No}        {E_id}        {project}")
            position = Position(x=92, y=(11+(S_No-1)))
            position.show()
            print(Team)
            position = Position(x=104, y=(11+(S_No-1)))
            position.show()
            if (row[11] == "0"):
                print("In Progress")
            elif (row[11] == "1"):
                print("Completed")
            elif (row[11] == "-1"):
                print("Not Accepted")
            S_No += 1
    file1.seek(0)
    print(f"\n\n\t\t\t\t\t\tEmployee List")
    print("\t\t\t\t\t\t_____________________________________________________")
    print(
        f"\t\t\t\t\t\t{colour.blue}{colour.bold}  S.No.    EMPLOYEE ID    TEAM LEADER
PROJECT{colour.end}")
    print("\t\t\t\t\t\t_____________________________________________________")
    S_No = 1
    for row3 in DataBase1:
        if (row3[6] != "630021"):
            print(
```

```
            f"\t\t\t\t\t\t   {S_No}        {row3[0]}         {row3[6]}        {row3[7]}")
        S_No += 1
    file1.close()
    file3.close()
    file.close()
    print(f"\n\t\t\t\t\t\t{colour.dark_gray}Press Enter for Main Menu...")
    msvcrt.getch()
    Admin_flag = 0
    id = Admin_GUI()
    return (id)


def Announce():
    global Admin_flag, file
    while (True):
        Admin_GUI()
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ANNOUNCE{colour.end}")
        print("\n")
        announcement = input("\tText for Announcement : ")
        print(
            f"\n\t\t\t\t\t\tDate of Payment : {colour.dark_gray}dd-mm-yyyy{colour.end}")
        position = Position(x=66, y=9)
        position.show()
        doa = input()
        print("\n")
        print("\t\t\t\t\t\t1.Announce")
```

```
    print("\t\t\t\t\t\t\t2.Back")
    try:
        op = int(input("\n\t\t\t\t\t\t\tEnter your choice : "))
        if ((op > 2) or (op < 1)):
            raise Invalid_Choice
        break
    except:
        print(
            f"\n\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
        time.sleep(2)
        continue
match op:
    case 1:
        file1 = open('DataBase.csv', "r")
        file2 = open('modify.csv', "w", newline="")
        DataBase2 = csv.reader(file1)
        copy = csv.writer(file2)
        for row in DataBase2:
            data = row
            data[10] = "1"
            copy.writerow(data)
        file1.close()
        file2.close()
        file.close()
        os.remove('DataBase.csv')
        os.rename('modify.csv', 'DataBase.csv')
        file3 = open('Announcements.csv', "r")
```

```
        file4 = open('modify.csv', "w", newline="")
        DataBase3 = csv.reader(file3)
        copy = csv.writer(file4)
        for row2 in DataBase3:
            data = row2
            data.insert(1, announcement)
            data.insert(1, doa)
            copy.writerow(data)
        file3.close()
        file4.close()
        os.remove('Announcements.csv')
        os.rename('modify.csv', 'Announcements.csv')
        print(f"\n\t\t\t\t\t\t{colour.light_green}Sending Announcement...")
        time.sleep(2)
        delete_last_line()
        print(f"\t\t\t\t\t\tSended Successfull.{colour.end}")
        print(
            f"\t\t\t\t\t\t{colour.dark_gray}Press Enter for Main Memu...")
        msvcrt.getch()
        Admin_flag = 0
        id = Admin_GUI()
        return (id)
    case 2:
        Admin_flag = 0
        id = Admin_GUI()
        return (id)
```

```
def Assign_Work():
    global Admin_flag
    while (True):
        Admin_GUI()
        print(
            f"\n\t\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ASSIGN WORK{colour.end}")
        print("\n")
        S_No = 1
        employee = []
        file1 = open('DataBase.csv', "r")
        DataBase = csv.reader(file1)
        for row2 in DataBase:
            if (row2[1] == "0"):
                print(f"\t\t{S_No} Employee ID : {row2[0]}")
                print(f"\t\t\tStatus : New Join")
                if (row2[6] == "630021"):
                    print("\t\t\tDesignation : Team Leader")
                else:
                    print("\t\t\tWork Status : Employee(Team member)")
                    print(f"\t\t\tTeam Leader : {row2[6]}")
                print(f"\t\t\tSign up : Not Signed up")
                print(f"\t\t\twork : To be assigned after Sign up")
                S_No += 1
            elif (row2[7] == "0"):
                print(f"\t\t{S_No} Employee ID : {row2[0]}")
                print(f"\t\t\tStatus : Current Employee")
```

```
            print("\t\t\tDesignation : Team Leader")
            print(f"\t\t\tProject : ----")
            S_No += 1
            employee.append(row2[0])
        elif (row2[6] == "630021"):
            if (row2[11] == "1"):
                print(f"\t\t{S_No} Employee ID : {row2[0]}")
                print(f"\t\t\tStatus : Current Employee")
                print("\t\t\tDesignation : Team Leader")
                print(f"\t\t\tProject : {row2[7]}")
                print(
                    f"\t\t\tProject Status : {colour.green}Completed{colour.end}")
                S_No += 1
                employee.append(row2[0])
            elif (row2[11] == "-1"):
                print(f"\t\t{S_No} Employee ID : {row2[0]}")
                print(f"\t\t\tStatus : Current Employee")
                print("\t\t\tDesignation : Team Leader")
                print(f"\t\t\tProject : {row2[7]}")
                print(
                    f"\t\t\tProject Status : {colour.red}Not Accepted{colour.end}")
                S_No += 1
    file1.close()
    print("\n")
    print("\t\t\t\t\t\t1.Assign Work")
    print("\t\t\t\t\t\t2.Back")
    try:
```

```
        op = int(input("\n\t\t\t\t\t\tEnter your choice : "))
        if ((op > 2) or (op < 1)):
            raise Invalid_Choice
        break
    except:
        print(
            f"\n\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
        time.sleep(1)  # 3
        continue
match op:
    case 1:
        while (True):
            Admin_GUI()
            print(
                f"\n\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ASSIGN WORK{colour.end}")
            print("\n")
            file_2 = open('Work.csv', "r")
            work_ = csv.reader(file_2)
            for row_w in work_:
                work = row_w
            file_2.close()
            S_No_w = 1
            for w in work:
                print(f"\t\t\t\t\t\t{S_No_w}.{w}")
                S_No_w += 1
            try:
                op_w = int(input("\n\t\t\t\t\t\tChoose Work : "))
```

```
            if ((op_w > S_No_w-1) or (op_w < 1)):
                raise Invalid_Choice
            break
        except:
            print(
                f"\n\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
            time.sleep(2)
            continue
    while (True):
        Admin_GUI()
        print(
            f"\n\t\t\t\t\t\t\t{colour.yellow}{colour.bold}ASSIGN WORK{colour.end}")
        print("\n")
        print("\n\t\t\t\t\t\tChoose Team Leader for Work : ")
        if (len(employee) == 0):
            print(
                f"\n\t\t\t\t\t\t{colour.orange}Employees are on work")
            print(
                f"\t\t\t\t\t{colour.dark_gray}Preaa Enter for Main Menu...{colour.end}")
            msvcrt.getch()
            Admin_flag = 0
            id = Admin_GUI()
            return (id)
        else:
            S_No_e = 1
            for e in employee:
                print(f"\t\t\t\t\t\t{S_No_e}.{e}")
```

```
            S_No_e += 1
        try:
            op_e = int(
                input("\n\t\t\t\t\t\tChoose Team Leader : "))
            if ((op_e > S_No_e-1) or (op_e < 1)):
                raise Invalid_Choice
            break
        except:
            print(
                f"\n\t\t\t\t\t\t{colour.red}{colour.bold}Invalid Choice{colour.end}")
            time.sleep(2)
            continue
file1 = open('DataBase.csv', "r")
file2 = open('modify.csv', "w", newline="")
DataBase2 = csv.reader(file1)
copy = csv.writer(file2)
for row3 in DataBase2:
    if (row3[0] == employee[op_e-1]):
        row3[7] = work[op_w-1]
        row3[11] = "-1"
        copy.writerow(row3)
    else:
        copy.writerow(row3)
file1.close()
file2.close()
file.close()
os.remove('DataBase.csv')
```

```
os.rename('modify.csv', 'DataBase.csv')
file1 = open('DataBase.csv', "r")
file2 = open('modify.csv', "w", newline="")
DataBase3 = csv.reader(file1)
copy = csv.writer(file2)
for row3 in DataBase3:
    if (row3[6] == employee[op_e-1]):
        row3[7] = work[op_w-1]
        copy.writerow(row3)
    else:
        copy.writerow(row3)
file1.close()
file2.close()
os.remove('DataBase.csv')
os.rename('modify.csv', 'DataBase.csv')
work.pop(op_w-1)
file3 = open('modify.csv', "w", newline="")
copy_work = csv.writer(file3)
copy_work.writerow(work)
file3.close()
os.remove('Work.csv')
os.rename('modify.csv', 'Work.csv')
print(f"\n\t\t\t\t\t\t{colour.orange}Work Assigned.")
print(
    f"\t\t\t\t\t\t{colour.dark_gray}Preaa Enter to Continue...{colour.end}")
msvcrt.getch()
id = Assign_Work()
```

```
            return (id)
        case 2:
            Admin_flag = 0
            id = Admin_GUI()
            return (id)



flag = 0
Admin_flag = 0
Admin_GUI_flag = 0
Team_Leader_flag = 0
Team_Leader_GUI_flag = 0
Employee_GUI_flag = 0
Employee_flag = 0
Admin = "Sandeep"
file = open('DataBase.csv', "r")
DataBase = csv.reader(file)
id = GUI()
while (True):
    file = open('DataBase.csv', "r")
    DataBase = csv.reader(file)
    for row in DataBase:
        if (row[0] == id):
            if (row[6] == "630021"):
                id = Team_Leader_GUI(row)
                break
            else:
```

```
id = Employee_GUI(row)
break
```

LIMITATIONS

1.Data Base:

The program uses csv files to store the company data in the harddisk. And the principle of edditing the data is difficult. So, instead we can use a module in python called sqllite to store data. Which makes easy editing of data.

2. Length of Code:

The code length make the program difficult to understand for others. So, need to use more function technics to reduce code and code reusability.

3.Using OOP's Techniques:

Using OOP's concepts in program will reduce the code length and creation of objects makes easy to understand.

CONCLUSION

By changing few lines in the program, the code will satisfy the user requirements ,according to the user.

REFERENCE

1.Books

- Data Structures and Algorithms in python by Michael.T.Goodrich

2.YouTube URL's

- https://youtu.be/U-jesavovCc?si=ssbsILA07Mz002-2
- https://youtu.be/HeW-D6KpDwY?si=qTtVa7G0AI_6er6k

3.Websites

- Stackoverflow.com
- SuperUser.com
- Google gemini