import csv

*importing libraries and other backend functions*

import getpass

import time

import random

import os

import sys

import pandas as pd

def clear(): return os.system('cls' if os.name == 'nt' else 'clear')

def dtc(d):

    if (d == "monday" or d == "mon"):

        return 1

    elif (d == "tuesday" or d == "tues"):

        return 2

    elif (d == "wednesday" or d == "wed"):

        return 3

    elif (d == "thursday" or d == "thur"):

        return 4

    elif (d == "friday" or d == "fri"):

        return 5

    elif (d == "saturday" or d == "sat"):

        return 6

    elif (d == "sunday" or d == "sun"):

        return 7

    else:

        print("Invalid day!")

        return 9

def ttc(t):

    if (t == "morning" or t == "day"):

        return 1

    elif (t == "afternoon" or t == "noon"):

        return 2

    elif (t == "evening"):

        return 3

    elif (t == "night" or t == "midnight"):

        return 4

    else:

        print("Invalid time entry!")

        return 9

*initial login function*

def login():

    clear()

    print("Welcome to the Cinema Booking System")

    print("Select an access level to login at: \n")

    print("1  -  Admin Login")

    print("2  -  User Login")

    print("3  -  New User Sign Up\n\n")

    access = int(input("Please enter your choice: "))

    if access == 1:

        adminLogin()

    elif access == 2:

        userLogin()

    elif access == 3:

        userSignUp()

    elif access == 202:

        userMenu()

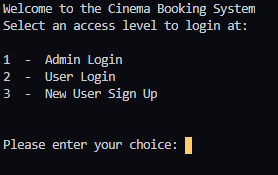
    elif access == 101:

        adminMenu()

    else:

        print("Invalid selection!")

login()

Output:

def adminLogin():

*ADMIN LOGIN PAGE*

    attempts = 0

    while(attempts < 3):

        clear()

        print("ADMIN LOGIN\n\n")

        username = str(input("Enter the admin username: "))

        if(username != "root"):

            print("Incorrect username!")

            attempts += 1

            print((3 - attempts), " tries left")

            time.sleep(2)

            continue

        elif(username == "root"):

            attempts = 0

            while(attempts < 3):

                clear()

                print("ADMIN LOGIN\n\n")

                print("Enter the admin username: root")

                password = getpass.getpass(

                    prompt="Enter the admin password : ")

                if(password != "toor"):

                    print("Incorrect password!")

                    attempts += 1

                    print((3 - attempts), " tries left")

                    time.sleep(2)

                    continue

                elif(password == "toor"):

                    Anim("Logging In")

                    adminMenu()

                    break

            else:

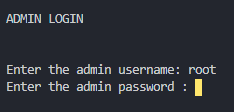
                clear()

                exit()

    else:

        clear()

        exit()



Output:

def adminMenu():

*ADMIN MENU PAGE*

    clear()

    print("Welcome to Cinema Booking System")

    print("\n\n-----------")

    print("ROOT ACCESS")

    print("-----------\n\n")

    print("Select a feature you want to access: \n")

    print("1  -  List bookings for a film")

    print("2  -  Find a booking with its id")

    print("3  -  Add new film")

    print("4  -  Remove existing film")

    print("5  -  Go back to login page")

    print("6  -  Exit app\n\n")

    choice = int(input("Please enter your choice: "))

    if choice == 1:

        searchFilm()

    elif choice == 2:

        searchRef()

    elif choice == 3:

        addFilm()

    elif choice == 4:

        removeFilm()

    elif choice == 5:

        a = str(input("\n\nAre you sure you want to go back to login? (y/n): ")).lower()

        if a == "y":

            clear()

            print("Taking you back to login.")

            time.sleep(1)

            clear()

            print("Taking you back to login..")

            time.sleep(1)

            login()

        else:

            adminMenu()

    elif choice == 6:

        a = str(input("\n\nAre you sure you want to exit the app? (y/n): ")).lower()

        if a == "y":

            clear()

            Anim("Exiting app")

            exit()

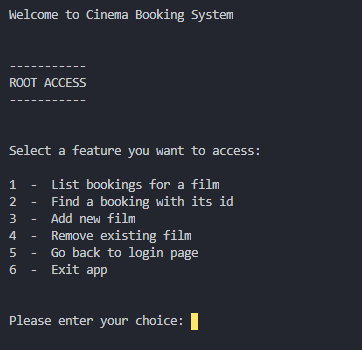
        else:

            adminMenu()

    else:

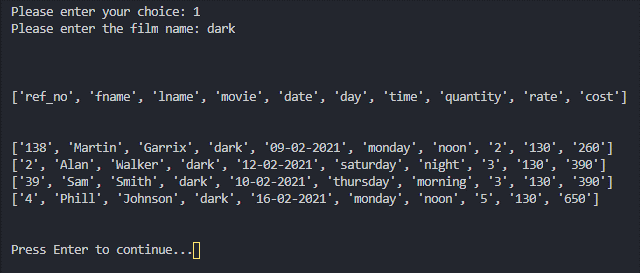
        print("Invalid selection!")

    adminMenu()

Output:

*Search booking with film names*

|  |
| --- |
| def searchFilm():      data = []      with open("cinema.csv") as csvfile:          reader = csv.reader(csvfile)          for row in reader:              data.append(row)      lookup = input("Please enter the film name: ")      lookup = lookup.lower()      col4 = [x[3] for x in data]      if lookup in col4:          print("\n\n")          print(data[0])          print("\n")          for k in range(0, len(col4)):              if col4[k] == lookup:                  print(data[k])          input("\n\nPress Enter to continue...")      else:          print("No booking for the film found!") |
|  |  |
|  |  |

Output:

def searchRef():

*Search Booking with Reference Number*

    data = []

    with open("cinema.csv") as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            data.append(row)

    lookup = input("Please enter the reference number: ")

    lookup = lookup.lower()

    col1 = [x[0] for x in data]

    if lookup in col1:

        for k in range(0, len(col1)):

            if col1[k] == lookup:

                print("\n")

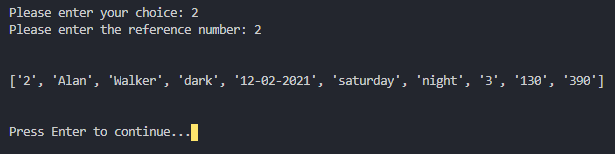
                print(data[k])

        input("\n\nPress Enter to continue...")

    else:

        print("\n\nNo booking found!")

        time.sleep(2)

Output:

*Add a new film csv*

def filmappend(a, b, c, d, e, f, g, file):

    with open(file, "a", newline='') as csvfile:

        writer = csv.writer(csvfile)

        writer.writerow(["day", "morning", "noon", "evening", "night"])

        writer.writerow(a)

        writer.writerow(b)

        writer.writerow(c)

        writer.writerow(d)

        writer.writerow(e)

        writer.writerow(f)

        writer.writerow(g)

def addFilm():

    name = input("\n\nEnter name of the movie: ").lower()

    rate = int(input("Enter the base rate: "))

    file = 'Movies/' + name + '.csv'

    with open(file, 'wb') as csvfile:

        filewriter = csv.writer(

            csvfile, delimiter=',', quotechar='|', quoting=csv.QUOTE\_MINIMAL)

    a = []

    b = []

    c = []

    d = []

    e = []

    f = []

    g = []

    a.append("monday")

    a.append(rate)

    a.append(rate + 10)

    a.append(rate + 20)

    a.append(rate + 30)

    b.append("tuesday")

    b.append(rate)

    b.append(rate + 10)

    b.append(rate + 20)

    b.append(rate + 30)

    c.append("wednesday")

    c.append(rate)

    c.append(rate + 10)

    c.append(rate + 20)

    c.append(rate + 30)

    d.append("thursday")

    d.append(rate)

    d.append(rate + 10)

    d.append(rate + 20)

    d.append(rate + 30)

    e.append("friday")

    e.append(rate)

    e.append(rate + 10)

    e.append(rate + 20)

    e.append(rate + 30)

    wRate = rate \* 2

    f.append("saturday")

    f.append(wRate)

    f.append(wRate + 20)

    f.append(wRate + 40)

    f.append(wRate + 60)

    g.append("sunday")

    g.append(wRate)

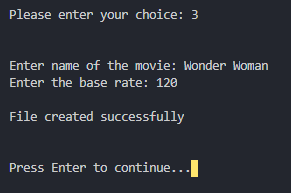
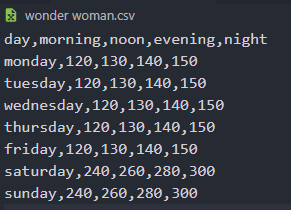
    g.append(wRate + 20)

    g.append(wRate + 40)

    g.append(wRate + 60)

    filmappend(a, b, c, d, e, f, g, file)

    print("\nFile created successfully")

Output:

*Remove existing film file*

def removeFilm():

    name = input("\n\nEnter name of the movie: ").lower()

    choice = input("Are you sure you want to remove the file for " + name +

                   " (y/n): ").lower()

    if (choice == 'y'):

        file = 'Movies/' + name + '.csv'

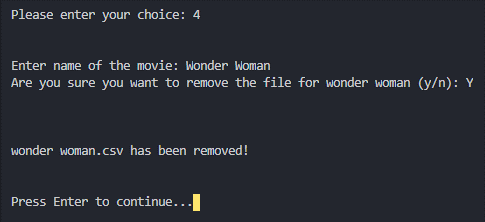
        os.remove(file)

        print("\n\n")

        print(name + ".csv" + " has been removed!")

        input("\n\nPress Enter to continue...")

Output:



def userSignUp():

*New User Sign Up*

    i = 0

    while i == 0:

        clear()

        print("User Sign Up Page\n\n")

        u = str(input("Enter a new username: "))

        data = []

        with open("users.csv") as csvfile:

            reader = csv.reader(csvfile)

            for row in reader:

                data.append(row)

        lookup = u

        col1 = [x[0] for x in data]

        if lookup in col1:

            print("\nUsername already taken")

            time.sleep(1)

            continue

        else:

            username = lookup

            break

    password = getpass.getpass(prompt="Enter a password: ")

    check = getpass.getpass(prompt="Confirm your password: ")

    if password != check:

        print("The entered passwords don't match")

    else:

        input("\n\nPress Enter to confirm...")

        Anim("Creating account")

        clear()

        print("User account successfully created!")

        time.sleep(1)

        with open("users.csv", "a", newline='') as csvfile:

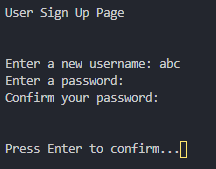
            writer = csv.writer(csvfile)

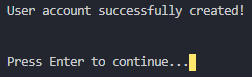
            writer.writerow([username, password])

        input("\n\nPress Enter to continue...")

        userLogin()

Output:





def userLogin():

*User login page*

    clear()

    print("User Login Page\n\n")

    username = input("Enter your username: ")

    data = []

    with open("users.csv") as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            data.append(row)

    lookup = username

    col1 = [x[0] for x in data]

    col2 = [x[1] for x in data]

    x = 5

    if lookup in col1:

        for k in range(0, len(col1)):

            if col1[k] == lookup:

                while x > 0:

                    clear()

                    print("User Login Page\n\n")

                    print("Enter your username:", username)

                    passwd = getpass.getpass(prompt="Enter your password: ")

                    if col2[k] == passwd:

                        Anim("Logging In")

                        time.sleep(1)

                        clear()

                        print("Logged in as", username)

                        x = -5

                        userMenu()

                    else:

                        print("\nIncorrect password!")

                        x -= 1

                        print(str(x) + " tries left\n")

                        time.sleep(2)

                if x != -5:

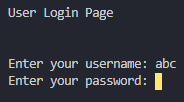
                    clear()

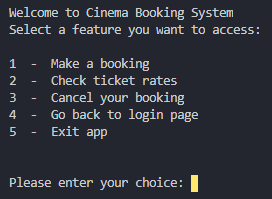
                    sys.exit()

    else:

        print("User not found!")

Output:





def userMenu():

*user menu*

    clear()

    print("Welcome to Cinema Booking System")

    print("Select a feature you want to access: \n")

    print("1  -  Make a booking")

    print("2  -  Check ticket rates")

    print("3  -  Cancel your booking")

    print("4  -  Go back to login page")

    print("5  -  Exit app\n\n")

    choice = int(input("Please enter your choice: "))

    if choice == 1:

        addBooking()

    elif choice == 2:

        filmPricing()

    elif choice == 3:

        delBooking()

    elif choice == 4:

        a = str(input("\n\nAre you sure you want to go back to login? (y/n): ")).lower()

        if a == "y":

            clear()

            print("Taking you back to login.")

            time.sleep(1)

            clear()

            print("Taking you back to login..")

            time.sleep(1)

            login()

        else:

            userMenu()

    elif choice == 5:

        a = str(input("\n\nAre you sure you want to exit the app? (y/n): ")).lower()

        if a == "y":

            clear()

            Anim("Exiting app")

            clear()

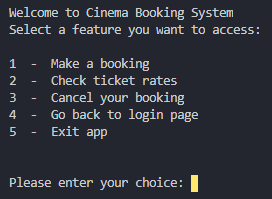
            exit()

        else:

            userMenu()

    else:

        print("Invalid selection!")

Output:

*Make a booking*

def addBooking():

    bookings = []

    pricedata = []

    data = []

    with open("cinema.csv") as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            data.append(row)

    bookingref = random.randint(1, 200)

    bookingref = str(bookingref)

    col2 = [x[0] for x in data]

    clear()

    if bookingref in col2:

        bookingref = int(bookingref)

        bookingref2 = random.randint(1, 1000)

        newbookingref = bookingref \* bookingref2

        newbookingref = str(newbookingref)

        print("The booking ref is:", newbookingref)

        print("\n")

        forename = input("Enter forename: ")

        surname = input("Enter surname: ")

        film = input("Enter film name: ").lower()

        file = "Movies/" + film + ".csv"

        with open(file) as csvfile:

            reader = csv.reader(csvfile)

            for row in reader:

                pricedata.append(row)

        price = pd.read\_csv(file, index\_col="day")

        print("\n")

        print(price)

        print("\n")

        date = str(input("Enter the date(dd-mm-yyyy): "))

        day = input("Enter day: ").lower()

        dcode = dtc(day)

        if dcode == 9:

            exit()

        time = input("Enter time of the day: ").lower()

        tcode = ttc(time)

        if tcode == 9:

            exit()

        quantity = int(

            input("Enter the amount of tickets you want to purchase: "))

        rate = int(pricedata[dcode][tcode])

        cost = int(rate \* quantity)

        print("\n\nConfirm your details:\n")

        print('Your name: ' + forename + ' ' + surname)

        print('Your booking number: ' + bookingref)

        print('Selected film: ' + film)

        print('Chosen date, day and time: ' + date + ' ' + day + ' ' + time)

        print('\nAmount of tickets: ' + str(quantity))

        print('Rate of each ticket: ' + str(rate))

        print('\nTotal booking cost: ' + str(cost))

        choice = input('\n\nAre you sure about your booking (y/n): ').lower()

        if (choice == 'y' or choice == 'yes'):

            bookings.append(newbookingref)

            bookings.append(forename)

            bookings.append(surname)

            bookings.append(film)

            bookings.append(date)

            bookings.append(day)

            bookings.append(time)

            bookings.append(quantity)

            bookings.append(rate)

            bookings.append(cost)

            with open("cinema.csv", "a", newline='') as csvfile:

                writer = csv.writer(csvfile)

                writer.writerow(bookings)

            Anim("Adding your booking")

            clear()

            print("Booking successfull!\n\n")

        else:

            exit()

    else:

        print("The booking ref is:", bookingref)

        print("\n")

        forename = input("Enter forename: ")

        surname = input("Enter surname: ")

        film = input("Enter film name: ").lower()

        file = "Movies/" + film + ".csv"

        with open(file) as csvfile:

            reader = csv.reader(csvfile)

            for row in reader:

                pricedata.append(row)

        price = pd.read\_csv(file, index\_col="day")

        print('\n')

        print(price)

        print('\n')

        date = str(input("Enter the date(dd-mm-yyyy): "))

        day = input("Enter day: ").lower()

        dcode = dtc(day)

        if dcode == 9:

            exit()

        time = input("Enter time of the day: ").lower()

        tcode = ttc(time)

        if tcode == 9:

            exit()

        quantity = int(

            input("Enter the amount of tickets you want to purchase: "))

        rate = int(pricedata[dcode][tcode])

        cost = int(rate \* quantity)

        print("\n\nConfirm your details:\n")

        print('Your name: ' + forename + ' ' + surname)

        print('Your booking number: ' + bookingref)

        print('Selected film: ' + film)

        print('Chosen date: ' + date)

        print('Chosen day and time: ' + day + ' ' + time)

        print('\nAmount of tickets: ' + str(quantity))

        print('Rate of each ticket: ' + str(rate))

        print('\nTotal booking cost: ' + str(cost))

        choice = input('\n\nAre you sure about your booking (y/n): ').lower()

        if (choice == 'y' or choice == 'yes'):

            bookings.append(bookingref)

            bookings.append(forename)

            bookings.append(surname)

            bookings.append(film)

            bookings.append(date)

            bookings.append(day)

            bookings.append(time)

            bookings.append(quantity)

            bookings.append(rate)

            bookings.append(cost)

            with open("cinema.csv", "a", newline='') as csvfile:

                writer = csv.writer(csvfile)

                writer.writerow(bookings)

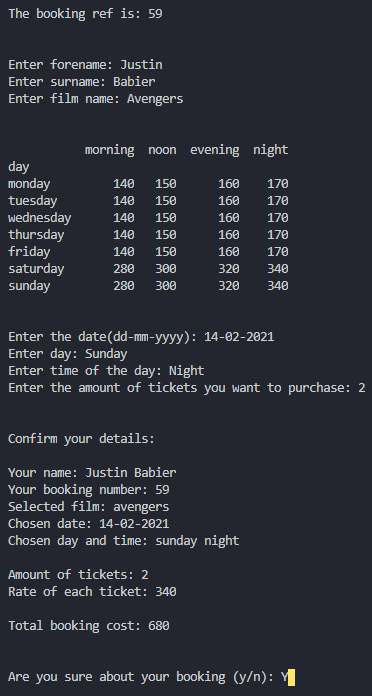
            Anim("Adding your booking")

            clear()

            print("Booking successfull!\n\n")

        else:

            exit()

Output:

*Check rates*

def filmPricing():

    data = []

    filmname = input("Please enter the film name: ").lower()

    file = "Movies/" + filmname + ".csv"

    with open(file) as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            data.append(row)

    day = input("Please enter the day: ").lower()

    if (dtc(day) != 9):

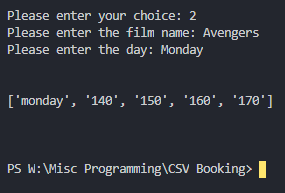
        print("\n")

        print(data[dtc(day)])

        print("\n\n")

    else:

        print("Invalid day entry!")

Output:

*Cancel Booking*

def delBooking():

    df = pd.read\_csv("./cinema.csv", index\_col=0)

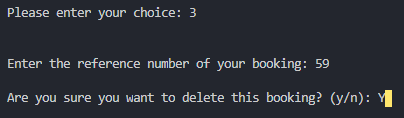
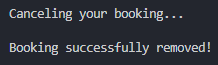
    ref\_no = input("\n\nEnter the reference number of your booking: ")

    df.drop(ref\_no, inplace=True)

    os.remove("cinema.csv")

    df.to\_csv("./cinema.csv")

    print("\nBooking successfully removed!")

Ouput:

*Function to append to film csv (NON-VISUAL)*

def filmappend(a, b, c, d, e, f, g, file):

    with open(file, "a", newline='') as csvfile:

        writer = csv.writer(csvfile)

        writer.writerow(["day", "morning", "noon", "evening", "night"])

        writer.writerow(a)

        writer.writerow(b)

        writer.writerow(c)

        writer.writerow(d)

        writer.writerow(e)

        writer.writerow(f)

        writer.writerow(g)

*Function to animate loading screens*

def Anim(string):

    clear()

    print(string)

    time.sleep(1)

    clear()

    print(string+".")

    time.sleep(1)

    clear()

    print(string+"..")

    time.sleep(1)

    clear()

    print(string+"...")

    time.sleep(1)

def salesGraph():

*Plot a sales graph to show the total earnings*

    data = []

    dataNames = []

    films = []

    earnings = []

    with open("cinema.csv") as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            data.append(row)

    with open("Movies/list.csv") as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            dataNames.append(row)

    Names = [x[0] for x in dataNames]

    for n in Names:

        temp = 0

        lookup = n

        films.append(n)

        colCost = [x[9] for x in data]

        colNames = [x[3] for x in data]

        if lookup in colNames:

            for k in range(0, len(colCost)):

                if colNames[k] == lookup:

                    temp += int(colCost[k])

        earnings.append(temp)

    plt.bar(films, earnings, width=0.4)

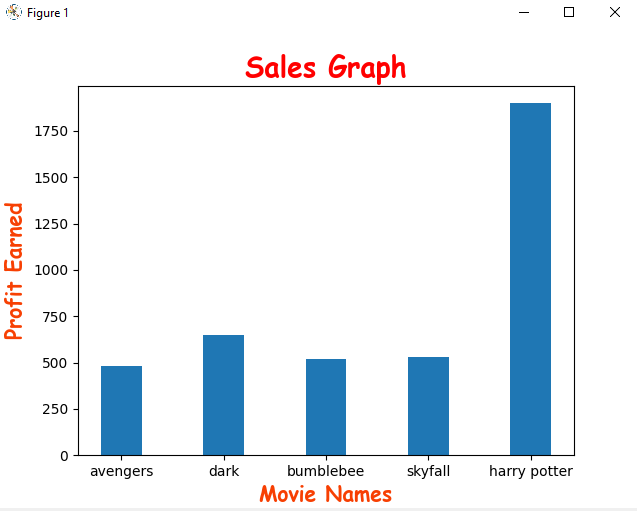
    plt.xlabel("Movie Names", fontdict=font1)

    plt.ylabel("Profit Earned", fontdict=font1)

    plt.title("Sales Graph", fontdict=font2)

    plt.show()

    input("\nPress Enter to continue...")

Ouput:

*plot a pie chart to compare the sales of various movies*

def ticketChart():

    data = []

    dataNames = []

    films = []

    amount = []

    with open(getpath("cinema.csv")) as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            data.append(row)

    with open(getpath("Movies/list.csv")) as csvfile:

        reader = csv.reader(csvfile)

        for row in reader:

            dataNames.append(row)

    Names = [x[0] for x in dataNames]

    for n in Names:

        temp = 0

        lookup = n

        films.append(n)

        colAmnt = [x[7] for x in data]

        colNames = [x[3] for x in data]

        if lookup in colNames:

            for k in range(0, len(colAmnt)):

                if colNames[k] == lookup:

                    temp += int(colAmnt[k])

        amount.append(temp)

    total = 0

    for x in amount:

        total += x

    percentages = []

    for x in amount:

        temp = x / total

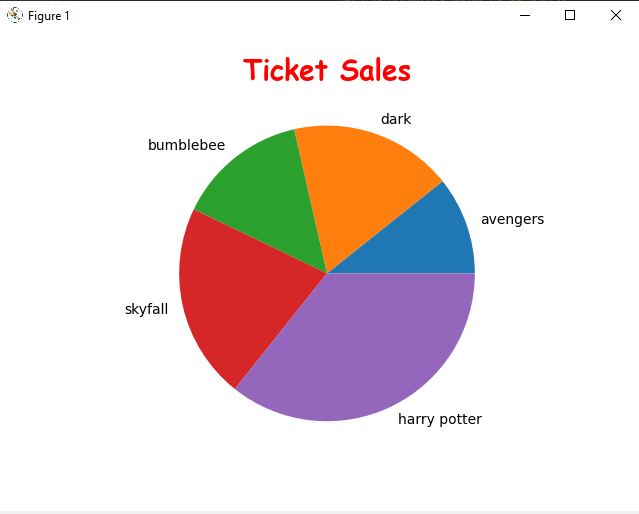
        percentages.append(float(temp))

    plt.pie(percentages, labels=films)

    plt.title("Ticket Sales", fontdict=font2)

    plt.show()

    input("\nPress Enter to continue...")

Ouput: