Computer Science Project File - "SEATBOOK"

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S7D

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ACKNOWLEDGEMENT

TO WHOM SO EVER IT MAY CONCERN

We convey our sincere gratitude to our Computer Science teacher Mr Gautam Sarkar for his continuous guidance and help . Without his support, the completion of our Python Project - SEATBOOK would not have been possible.

IKSHA JAIN
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CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the Python Project File - "SEATBOOK "has been designed and developed by HIMNISH CHHABRA and IKSHA JAIN of class S7D under my guidance and supervision .

GAUTAM SARKAR
Head , Computer Science Department

ABOUT THE PROJECT - “SEATBOOK”

We , Himnish and Iksha ,were assigned a project in which we had to create something that is tangible and useful using Python Programming Language with the aim to find a real world problem that is worthwhile to solve. So we have created this filing system using CSV files for booking seats.

In this system, there will be a total of 1000 tickets. There will be three categories : GOLD , PLATINUM and DIAMOND , Diamond being the most exclusive. Platinum will have 700 seats , Gold will have 250 seats and Diamond 50 seats.

A table will be created using Comma Separated Values. There are 7 Columns in the table for seats .

1. TICKET NO. - It will store the unique ticket number of each person booking the seat.
2. NAME - It will store the name of the person who has booked that seat.
3. AGE - It will store the age of the person booking the seat.
4. PASSPORT NO. - It will store the passport number pf the person booking the seat.
5. DATE OF BIRTH - It will store the Date of Birth of the person booking the seat in DD/MM/YYYY format.
6. SEAT TYPE - This stores the seat category of the seat booked by the person.
7. SEAT NO. - It will store the seat number of the seat booked by the person.

USES AND ADVANTAGES:

- It makes the collection and storage of data more efficient.
- It offers a systematic way to perform the task (in this case, booking seats).
- It makes the process to manage the data easier.
- It provides an interface for the user input and see the data.

TECHNICAL DETAILS

In this program, we have used CSV files to store data for booking seats for a particular event.
We have used seven user-defined functions :

1. SEATS_LEFT() - To calculate and return the number of seats left in each category i.e. Platinum,Gold and Diamond.
   First , the file is read and then the data in the sixth column of each row is checked and number is calculated according to that.
   This function has been used in the following functions to check if there are seats left in the category being booked.

2. CREATE() - To create a CSV file to store the details of the ticket buyers.
   Firstly, a new CSV file is created and the user is asked "Enter number of people you wish to book for : " and this value is assigned to n . Then 'n' number of records are added by asking the details from the user.

3. MODIFY() - To modify the record of a ticket holder by taking the ticket number from the user.
   First, the CSV file is opened in read mode and read and assigned to a list 'ALLROWS'. Then, the user is asked to input the ticket number of the record to be modified. Then one by one all records are checked using a 'for' loop to look for the record matching the ticket number.After that if the record is found then user is asked which field is to be modified and the modified value is input and changed in the list 'ALLROWS'. The file is then closed and opened in write mode and the records are written onto the file.If no record matches the given ticket number then a message is displayed indicating that.

4. SEARCH() - To search for a given ticket holder by taking the ticket number from the user.
   The CSV file is opened in read mode and read and assigned to a list 'ALLROWS'. The user is then asked the ticket number of the record he/she wants to see. The records are checked one by one using a 'for' loop and the record matching the input ticket number is displayed.If

no record matches the given ticket number then a message is displayed indicating that.

5. DISPLAY() - To Display the records of all the ticket holder or to display the records of all ticket holders of a particular seat category(e.g. Platinum).
   The CSV file is opened in read mode and read and assigned to a list 'ALLROWS'.Then the user is asked if he/she wants to see all the records or only of a particular seat category. If the user wants to all the records then all of them are printed using a 'for' loop (traverses the list 'ALLROWS'). The number of seats occupied and left in each category and in total are also printed.If the user wants to see only the records of a particular seat type then the data in the sixth column of each record is checked and only those matching that seat category are displayed.

6. ADD() - To add records of more ticket buyers.
   Firstly, a CSV file is opened in the append mode.It creates a new file if the file is not already present. Then the user is asked "Enter number of people you wish to book for : " and this value is assigned to n . Then 'n' number of records are added by asking the details from the user.

7. REMOVE() - To remove the record of a given ticket holder by taking the ticket number from the user.
   Firstly, the file is opened in read mode and read and assigned to a list 'ALLROWS'. Then the user is asked "Enter TICKET NUMBER of person to be removed : ".Then is list is traversed using a 'for' loop and the record matching the input ticket number is looked for. If the record is found then it is displayed and the user is asked if he/she wants to delete it or not. If the user chooses 'yes' then that record is removed from the list and the file is closed.After that the file is opened in write mode and the changed list is written onto the file. If the user chooses 'no' then no change is made to the list and the file is closed.

In the end, a Menu Driven Program is made using a 'while' loop. It displays all the options(create, display, etc.) to work with the data to the user . Then the user chooses an option and the function required to do that is called and executed. This loop keeps going on until the user enters the exit option. When the user exits it displays a message and the program ends.

SOURCE CODE

```
import csv

HEADER=['TICKET NO.','NAME','AGE','PASSPORT NO.','DATE OF
BIRTH','SEAT TYPE','SEAT NO.']
#=================================================================
==
def SEATS_LEFT():
    file = open("seatbook.csv","r",newline = "\n")
    READER = csv.reader(file)

    NP = 0
    NG = 0
    ND = 0
    for i in READER:
        if i[5][0] == "P":
            NP += 1
        elif i[5][0] == "G":
            NG += 1
        elif i[5][0] == "D":
            ND += 1
        else:
            pass
    file.close()


    return NP,NG,ND
#=================================================================
==
def CREATE():
    file = open("seatbook.csv","w",newline="\n")
    seats = csv.writer(file)
    n = int(input("\nEnter number of people you wish to book for :
"))
    seats.writerow(HEADER)

    for i in range(n):
        print('\nPERSON',i+1)

print('---------------------------------------------------------
-')
        ticket_no =input("Enter TICKET NUMBER : ")
        Name = input("Enter person's NAME : ")
        age = input("Enter AGE : ")
        passport_no = input("Enter PASSPORT NUMBER : ")
        DOB = input("Enter DATE OF BIRTH (dd/mm/yyyy) : ")

        while True:
            x = SEATS_LEFT()
```

```
            seat_type = input("Enter SEAT TYPE (Platinum, Gold or
Diamond) : ")
            if x[0]>700 and seat_type[0] == "P":
                print("\nAll PLATINUM SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE PLATINUM SEATS")
            elif x[1]>250 and seat_type[0] == "G":
                print("\nALL GOLD SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE GOLD SEATS")
            elif x[2]>50 and seat_type[0] == "D":
                print("\nALL DIAMOND SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE DIAMOND SEATS")
            else:
                break
        while True:
            seat_no = int(input("Enter SEAT NO. : "))
            if seat_no > 1000:
                print("\nSeat number cannot be greater than 1000")

            else:
                break


seats.writerow([ticket_no,Name.title(),age,passport_no,DOB,seat_type
.title(),str(seat_no)])
        print('\nTicket with Ticket No.',ticket_no,'has been
booked')

    file.close()

#=================================================================
==

def MODIFY():
    try:
        File=open('seatbook.csv','r',newline='\n')
        ALLROWS=csv.reader(File)
        ticket_no=input('\nEnter TICKET NO. : ')

        Found=0
        NEWROWS=[]

        for row in ALLROWS:
            if ticket_no==row[0]:
                Found=1

                print('\nWe have found the person, the information
is : ')
                print('TICKET NO.    : ',row[0])
                print('NAME          : ',row[1])
                print('AGE           : ',row[2])
                print('PASSPORT NO.  : ',row[3])
                print('DATE OF BIRTH : ',row[4])
                print('SEAT TYPE     : ',row[5])
```

```
                print('SEAT NO.      : ',row[6])
                while True:
                    print('\n+-----------------------------------
+')
                    print('|    Select field to be modified     |')
                    print('+-----------------------------------+')
                    print('| 1. NAME                           |')
                    print('| 2. AGE                            |')
                    print('| 3. PASSPORT NO.                   |')
                    print('| 4. DATE OF BIRTH                  |')
                    print('| 5. SEAT TYPE                      |')
                    print('| 6. SEAT NO.                       |')
                    print('| 7. EXIT                           |')
                    print('+-----------------------------------+')


                    CH=int(input('\nEnter your choice (1-7) : '))

                    if CH==1:
                        row[1]=input('\nEnter NAME : ').title()

                    elif CH==2:
                        row[2]=input('\nEnter AGE : ')

                    elif CH==3:
                        row[3]=input('\nEnter PASSPORT NO. : ')

                    elif CH==4:
                        row[4]=input('\nEnter DATE OF BIRTH (dd/mm/
yyyy) : ')

                    elif CH==5:
                        while True:
                            x = SEATS_LEFT()
                            seat_type = input("Enter SEAT TYPE
(Platinum, Gold or Diamond) : ")
                            if x[0]>700 and seat_type[0] == "P":
                                print("\nAll PLATINUM SEATS ARE
OCCUPIED")
                                print("CANNOT ADD MORE PLATINUM
SEATS")
                            elif x[1]>250 and seat_type[0] == "G":
                                print("\nALL GOLD SEATS ARE
OCCUPIED")
                                print("CANNOT ADD MORE GOLD SEATS")
                            elif x[2]>50 and seat_type[0] == "D":
                                print("\nALL DIAMOND SEATS ARE
OCCUPIED")
                                print("CANNOT ADD MORE DIAMOND
SEATS")
                            else:
                                row[5]=seat_type.title()
                                break
```

```
                    elif CH==6:
                        while True:
                            seat_no = int(input("Enter SEAT NO. :
"))
                            if seat_no > 1000:
                                print("\nSeat number cannot be
greater than 1000")

                            else:
                                row[6]=str(seat_no)
                                break


                    elif CH==7:
                        NEWROWS.append(row)
                        break

                else:
                    print('\nINVALID CHOICE')
                    KEY=input('Press any key to continue...')

            else:
                NEWROWS.append(row)

        File.close()

        if Found==0:
            print('\nNO TICKET EXISTS WITH THE NUMBER',ticket_no)


        File=open('seatbook.csv','w',newline='\n')

        Pen=csv.writer(File)

        for row in NEWROWS:
            Pen.writerow(row)

        File.close()

    except:
        print('\nFile NOT FOUND ')

#=================================================================
==

def SEARCH():
    try:
        File=open('seatbook.csv','r',newline='\n')
        ALLROWS=csv.reader(File)
        ticket_no=input('\nEnter TICKET NO. : ')
        Found=0
```

```
        for row in ALLROWS:
            if ticket_no==row[0]:
                Found +=1
                print('\nWe have found the person, the information
is : ')
                print('TICKET NO.    : ',row[0])
                print('NAME         : ',row[1])
                print('AGE          : ',row[2])
                print('PASSPORT NO.  : ',row[3])
                print('DATE OF BIRTH : ',row[4])
                print('SEAT TYPE     : ',row[5])
                print('SEAT NO.      : ',row[6])
        if Found==0:
            print('\nNO TICKET EXISTS WITH THE NUMBER',ticket_no)

        File.close()

    except:
        print('\nFile NOT FOUND')

#=================================================================
==

def DISPLAY():
    try:
        File=open('seatbook.csv','r',newline='\n')
        ALLROWS=csv.reader(File)

        print('\n+-------------------------------------+')
        print('|              SELECT                 |')
        print('+-------------------------------------+')
        print('| 1. Display all                      |')
        print('| 2. Display Particular SEAT TYPE     |')
        print('+-------------------------------------+')

        Ch=int(input('\nEnter the choice : '))

        if Ch==1:

            NP=0
            NG=0
            ND=0

            for a_row in ALLROWS:
                print(*a_row,sep=' | ')
                seat_type=a_row[5]
                if seat_type[0] in ['P']:
                    NP+=1

                elif seat_type[0] in ['G']:
                    NG+=1
```

```
                elif seat_type[0] in ['D']:
                    ND+=1

            Total_occupied=NP+ND+NG

            print('\n\nNumber of Platinum Seats occupied : ',NP)
            print('Number of Gold Seats occupied : ',NG)
            print('Number of Diamond Seats occupied : ',ND)
            print('Total number of Seats occupied :
',Total_occupied)

            print('\n\nNumber of Platinum Seats left : ',700-NP)
            print('Number of Gold Seats left : ',250-NG)
            print('Number of Diamond Seats left : ',50-ND)
            print('Number of Seats left : ',1000-Total_occupied)

        elif Ch==2:

            S_T=input('\nEnter the Seat Type to be displayed : ')
            S_T=S_T.title()

            if S_T in ['Platinum','Gold','Diamond']:
                print()
                print(*HEADER,sep=' | ')
                N=0

                for a_row in ALLROWS:
                    seat_type=a_row[5].title()
                    if seat_type==S_T:
                        print(*a_row,sep=' | ')
                        N+=1

                print('\nNumber of',S_T,'Seats occupied : ',N)

            else:
                print('\nINVALID INPUT')
                Key=input('Press any key to continue...')

        else:
            print('\nINVALID INPUT')
            Key=input('Press any key to continue...')

        File.close()

    except:
        print('\nFile NOT FOUND')

#=================================================================
==

def ADD():
    file = open("seatbook.csv","a",newline="\n")
    seats = csv.writer(file)
```

```
    n = int(input("\nEnter number of people you wish to book for:
"))

    for i in range(n):
        print('\nPERSON',i+1)

print('-----------------------------------------------------------------
-')
        ticket_no = input("Enter TICKET NUMBER : ")
        Name = input("Enter person's NAME : ")
        age = input("Enter AGE : ")
        passport_no = input("Enter PASSPORT NUMBER : ")
        DOB = input("Enter DATE OF BIRTH (dd/mm/yyyy) : ")
        while True:
            x = SEATS_LEFT()
            seat_type = input("Enter SEAT TYPE (Platinum, Gold or
Diamond) : ")
            if x[0]>700 and seat_type[0] == "P":
                print("\nAll PLATINUM SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE PLATINUM SEATS")
            elif x[1]>250 and seat_type[0] == "G":
                print("\nALL GOLD SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE GOLD SEATS")
            elif x[2]>50 and seat_type[0] == "D":
                print("\nALL DIAMOND SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE DIAMOND SEATS")
            else:
                break
        while True:
            seat_no = int(input("Enter SEAT NO. : "))
            if seat_no > 1000:
                print("\nSeat number cannot be greater than 1000")

            else:
                break

        print('\nRecord added')


seats.writerow([ticket_no,Name.title(),age,passport_no,DOB,seat_type
.title(),str(seat_no)])

    file.close()

#=================================================================
==
def REMOVE():
    try:
        file = open("seatbook.csv","r",newline = "\n")
        seats = csv.reader(file)
        ticket = input("\nEnter TICKET NUMBER of person to be
removed: ")
```

```
        count = 0
        newrows = []
        for i in seats:
            if ticket == i[0]:
                count += 1

                print("\nWe have found the person, their information
is : ")
                print('TICKET NO.    : ',i[0])
                print('NAME         : ',i[1])
                print('AGE          : ',i[2])
                print('PASSPORT NO.  : ',i[3])
                print('DATE OF BIRTH : ',i[4])
                print('SEAT TYPE     : ',i[5])
                print('SEAT NO.      : ',i[6])

                choice = int(input("""\n Would you like to remove
this ticket :
1. Yes
2. No : \n"""))
                if choice == 1:
                    pass

                elif choice == 2:
                    newrows.append(i)

                else:
                    print("\nInvalid option")
                    newrows.append(i)

            else:
                newrows.append(i)

        file.close()

        if count == 0:
            print("\nNo match found!")
        else:
            print("\nRecord deleted")
            Nfile = open("seatbook.csv","w",newline = "\n")
            Ntable = csv.writer(Nfile)
            for j in newrows:
                Ntable.writerow(j)

            Nfile.close()

    except:
        print('\nFile NOT FOUND')

#=================================================================
==
```

```
print('''-------------------------------------------------------------
----
                WELCOME TO SEATBOOK PROGRAM
-------------------------------------------------------------''')
while True:
    option =
int(input("""\n+=====================================================+
| Please pick an operation to perform on seatbook   |
+---------------------------------------------------+
| 1. CREATE NEW FILE                                |
| 2. ADD TICKETS                                    |
| 3. REMOVE TICKET                                  |
| 4. MODIFY TICKET                                  |
| 5. SEARCH TICKET                                  |
| 6. DISPLAY TICKET                                 |
| 7. EXIT                                           |
+===================================================+
\nEnter the choice : """))

    if option==1:
        CREATE()
    elif option == 2:
        ADD()
    elif option == 3:
        REMOVE()
    elif option == 4:
        MODIFY()
    elif option == 5:
        SEARCH()
    elif option == 6:
        DISPLAY()
    elif option == 7:
        print('\nYou have exited')
        break
    else:
        print("\nInvalid option")
        key=input('Press any key to continue…')
```

```
import csv

HEADER=['TICKET NO.','NAME','AGE','PASSPORT NO.','DATE OF BIRTH','SEAT TYPE','SEAT NO.']
#=============================================================================================
def SEATS_LEFT():
    file = open("seatbook.csv","r",newline = "\n")
    READER = csv.reader(file)

    NP = 0
    NG = 0
    ND = 0
    for i in READER:
        if i[5][0] == "P":
            NP += 1
        elif i[5][0] == "G":
            NG += 1
        elif i[5][0] == "D":
            ND += 1
        else:
            pass
    file.close()


    return NP,NG,ND
#=============================================================================================
def CREATE():
    file = open("seatbook.csv","w",newline="\n")
    seats = csv.writer(file)
    n = int(input("\nEnter number of people you wish to book for: "))
    seats.writerow(HEADER)

    for i in range(n):
        print('\nPERSON',i+1)
        print('-------------------------------------------------------------')
        ticket_no =input("Enter TICKET NUMBER : ")
        Name = input("Enter person's NAME : ")
        age = input("Enter AGE : ")
        passport_no = input("Enter PASSPORT NUMBER : ")
        DOB = input("Enter DATE OF BIRTH (dd/mm/yyyy) : ")

        while True:
            x = SEATS_LEFT()
            seat_type = input("Enter SEAT TYPE (Platinum, Gold or Diamond) : ")
            if x[0]>700 and seat_type[0] == "P":
                print("\nAll PLATINUM SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE PLATINUM SEATS")
            elif x[1]>250 and seat_type[0] == "G":
                print("\nALL GOLD SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE GOLD SEATS")
            elif x[2]>50 and seat_type[0] == "D":
                print("\nALL DIAMOND SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE DIAMOND SEATS")
            else:
                break
        while True:
            seat_no = int(input("Enter SEAT NO. : "))
            if seat_no > 1000:
                print("\nSeat number cannot be greater than 1000")

            else:
                break

        seats.writerow([ticket_no,Name.title(),age,passport_no,DOB,seat_type.title(),str(seat_no)])
        print('\nTicket with Ticket No.',ticket_no,'has been booked')

    file.close()

#=============================================================================================
```

```
def MODIFY():
    try:
        File=open('seatbook.csv','r',newline='\n')
        ALLROWS=csv.reader(File)
        ticket_no=input('\nEnter TICKET NO. : ')

        Found=0
        NEWROWS=[]

        for row in ALLROWS:
            if ticket_no==row[0]:
                Found=1

                print('\nWe have found the person, the information is : ')
                print('TICKET NO.    : ',row[0])
                print('NAME          : ',row[1])
                print('AGE           : ',row[2])
                print('PASSPORT NO.  : ',row[3])
                print('DATE OF BIRTH : ',row[4])
                print('SEAT TYPE     : ',row[5])
                print('SEAT NO.      : ',row[6])
                while True:
                    print('\n+-------------------------------------+')
                    print('|    Select field to be modified      |')
                    print('+-------------------------------------+')
                    print('| 1. NAME                             |')
                    print('| 2. AGE                              |')
                    print('| 3. PASSPORT NO.                     |')
                    print('| 4. DATE OF BIRTH                    |')
                    print('| 5. SEAT TYPE                        |')
                    print('| 6. SEAT NO.                         |')
                    print('| 7. EXIT                             |')
                    print('+-------------------------------------+')


                    CH=int(input('\nEnter your choice (1-7) : '))

                    if CH==1:
                        row[1]=input('\nEnter NAME : ').title()

                    elif CH==2:
                        row[2]=input('\nEnter AGE : ')

                    elif CH==3:
                        row[3]=input('\nEnter PASSPORT NO. : ')

                    elif CH==4:
                        row[4]=input('\nEnter DATE OF BIRTH (dd/mm/yyyy) : ')

                    elif CH==5:
                        while True:
                            x = SEATS_LEFT()
                            seat_type = input("Enter SEAT TYPE (Platinum, Gold or Diamond) : ")
                            if x[0]>700 and seat_type[0] == "P":
                                print("\nAll PLATINUM SEATS ARE OCCUPIED")
                                print("CANNOT ADD MORE PLATINUM SEATS")
                            elif x[1]>250 and seat_type[0] == "G":
                                print("\nALL GOLD SEATS ARE OCCUPIED")
                                print("CANNOT ADD MORE GOLD SEATS")
                            elif x[2]>50 and seat_type[0] == "D":
                                print("\nALL DIAMOND SEATS ARE OCCUPIED")
                                print("CANNOT ADD MORE DIAMOND SEATS")
                            else:
                                row[5]=seat_type.title()
                                break
```

```
                elif CH==6:
                    while True:
                        seat_no = int(input("Enter SEAT NO. : "))
                        if seat_no > 1000:
                            print("\nSeat number cannot be greater than 1000")

                        else:
                            row[6]=str(seat_no)
                            break


                elif CH==7:
                    NEWROWS.append(row)
                    break

            else:
                print('\nINVALID CHOICE')
                KEY=input('Press any key to continue...')

        else:
            NEWROWS.append(row)

    File.close()

    if Found==0:
        print('\nNO TICKET EXISTS WITH THE NUMBER',ticket_no)


    File=open('seatbook.csv','w',newline='\n')

    Pen=csv.writer(File)

    for row in NEWROWS:
        Pen.writerow(row)

    File.close()

except:
    print('\nFile NOT FOUND ')

#=============================================================================================

def SEARCH():
    try:
        File=open('seatbook.csv','r',newline='\n')
        ALLROWS=csv.reader(File)
        ticket_no=input('\nEnter TICKET NO. : ')
        Found=0

        for row in ALLROWS:
            if ticket_no==row[0]:
                Found +=1
                print('\nWe have found the person, the information is : ')
                print('TICKET NO.    : ',row[0])
                print('NAME          : ',row[1])
                print('AGE           : ',row[2])
                print('PASSPORT NO.  : ',row[3])
                print('DATE OF BIRTH : ',row[4])
                print('SEAT TYPE     : ',row[5])
                print('SEAT NO.      : ',row[6])
        if Found==0:
            print('\nNO TICKET EXISTS WITH THE NUMBER',ticket_no)

        File.close()

    except:
        print('\nFile NOT FOUND')
```

```
def DISPLAY():
    try:
        File=open('seatbook.csv','r',newline='\n')
        ALLROWS=csv.reader(File)

        print('\n+-------------------------------------+')
        print('|              SELECT                 |')
        print('+-------------------------------------+')
        print('| 1. Display all                      |')
        print('| 2. Display Particular SEAT TYPE     |')
        print('+-------------------------------------+')

        Ch=int(input('\nEnter the choice : '))

        if Ch==1:

            NP=0
            NG=0
            ND=0

            for a_row in ALLROWS:
                print(*a_row,sep=' | ')
                seat_type=a_row[5]
                if seat_type[0] in ['P']:
                    NP+=1

                elif seat_type[0] in ['G']:
                    NG+=1

                elif seat_type[0] in ['D']:
                    ND+=1

            Total_occupied=NP+ND+NG

            print('\n\nNumber of Platinum Seats occupied : ',NP)
            print('Number of Gold Seats occupied : ',NG)
            print('Number of Diamond Seats occupied : ',ND)
            print('Total number of Seats occupied : ',Total_occupied)

            print('\n\nNumber of Platinum Seats left : ',700-NP)
            print('Number of Gold Seats left : ',250-NG)
            print('Number of Diamond Seats left : ',50-ND)
            print('Number of Seats left : ',1000-Total_occupied)

        elif Ch==2:

            S_T=input('\nEnter the Seat Type to be displayed : ')
            S_T=S_T.title()

            if S_T in ['Platinum','Gold','Diamond']:
                print()
                print(*HEADER,sep=' | ')
                N=0

                for a_row in ALLROWS:
                    seat_type=a_row[5].title()
                    if seat_type==S_T:
                        print(*a_row,sep=' | ')
                        N+=1

                print('\nNumber of',S_T,'Seats occupied : ',N)

            else:
                print('\nINVALID INPUT')
                Key=input('Press any key to continue...')

        else:
            print('\nINVALID INPUT')
            Key=input('Press any key to continue...')

        File.close()

    except:
        print('\nFile NOT FOUND')
```

```
#=============================================================================================

def ADD():
    file = open("seatbook.csv","a",newline="\n")
    seats = csv.writer(file)

    n = int(input("\nEnter number of people you wish to book for: "))

    for i in range(n):
        print('\nPERSON',i+1)
        print('-----------------------------------------------------------------')
        ticket_no = input("Enter TICKET NUMBER : ")
        Name = input("Enter person's NAME : ")
        age = input("Enter AGE : ")
        passport_no = input("Enter PASSPORT NUMBER : ")
        DOB = input("Enter DATE OF BIRTH (dd/mm/yyyy) : ")
        while True:
            x = SEATS_LEFT()
            seat_type = input("Enter SEAT TYPE (Platinum, Gold or Diamond) : ")
            if x[0]>700 and seat_type[0] == "P":
                print("\nAll PLATINUM SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE PLATINUM SEATS")
            elif x[1]>250 and seat_type[0] == "G":
                print("\nALL GOLD SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE GOLD SEATS")
            elif x[2]>50 and seat_type[0] == "D":
                print("\nALL DIAMOND SEATS ARE OCCUPIED")
                print("CANNOT ADD MORE DIAMOND SEATS")
            else:
                break
        while True:
            seat_no = int(input("Enter SEAT NO. : "))
            if seat_no > 1000:
                print("\nSeat number cannot be greater than 1000")

            else:
                break

        print('\nRecord added')

        seats.writerow([ticket_no,Name.title(),age,passport_no,DOB,seat_type.title(),str(seat_no)])

    file.close()

#=============================================================================================
def REMOVE():
    try:
        file = open("seatbook.csv","r",newline = "\n")
        seats = csv.reader(file)
        ticket = input("\nEnter TICKET NUMBER of person to be removed: ")

        count = 0
        newrows = []
        for i in seats:
            if ticket == i[0]:
                count += 1

                print("\nWe have found the person, their information is : ")
                print('TICKET NO.     : ',i[0])
                print('NAME           : ',i[1])
                print('AGE            : ',i[2])
                print('PASSPORT NO.   : ',i[3])
                print('DATE OF BIRTH  : ',i[4])
                print('SEAT TYPE      : ',i[5])
                print('SEAT NO.       : ',i[6])

                choice = int(input("""\n Would you like to remove this ticket :
1. Yes
2. No : \n"""))
                if choice == 1:
                    pass

                elif choice == 2:
                    newrows.append(i)
```

```
                else:
                    print("\nInvalid option")
                    newrows.append(i)

            else:
                newrows.append(i)

        file.close()

        if count == 0:
            print("\nNo match found!")
        else:
            print("\nRecord deleted")
            Nfile = open("seatbook.csv","w",newline = "\n")
            Ntable = csv.writer(Nfile)
            for j in newrows:
                Ntable.writerow(j)

            Nfile.close()

    except:
        print('\nFile NOT FOUND')

#=============================================================================================

print('''-----------------------------------------------------------------
                WELCOME TO SEATBOOK PROGRAM
-----------------------------------------------------------------''')
while True:
    option = int(input("""\n+=================================================+
| Please pick an operation to perform on seatbook   |
+-------------------------------------------------+
| 1. CREATE NEW FILE                              |
| 2. ADD TICKETS                                  |
| 3. REMOVE TICKET                                |
| 4. MODIFY TICKET                                |
| 5. SEARCH TICKET                                |
| 6. DISPLAY TICKET                               |
| 7. EXIT                                         |
+=================================================+
\nEnter the choice : """))

    if option==1:
        CREATE()
    elif option == 2:
        ADD()
    elif option == 3:
        REMOVE()
    elif option == 4:
        MODIFY()
    elif option == 5:
        SEARCH()
    elif option == 6:
        DISPLAY()
    elif option == 7:
        print('\nYou have exited')
        break
    else:
        print("\nInvalid option")
        key=input('Press any key to continue...')
```

OUTPUTS

```
------------------------------------------------------------
               WELCOME TO SEATBOOK PROGRAM
------------------------------------------------------------

+================================================+
| Please pick an operation to perform on seatbook  |
+------------------------------------------------+
| 1. CREATE NEW FILE                             |
| 2. ADD TICKETS                                 |
| 3. REMOVE TICKET                               |
| 4. MODIFY TICKET                               |
| 5. SEARCH TICKET                               |
| 6. DISPLAY TICKET                              |
| 7. EXIT                                        |
+================================================+

Enter the choice : 1

Enter number of people you wish to book for: 3

PERSON 1
------------------------------------------------------------
Enter TICKET NUMBER : 001
Enter person's NAME : Samuel
Enter AGE : 21
Enter PASSPORT NUMBER : H986542
Enter DATE OF BIRTH (dd/mm/yyyy) : 04/03/2000
Enter SEAT TYPE (Platinum, Gold or Diamond) : Platinum
Enter SEAT NO. : 1

Ticket with Ticket No. 001 has been booked

PERSON 2
------------------------------------------------------------
Enter TICKET NUMBER : 003
Enter person's NAME : Sarah
Enter AGE : 30
Enter PASSPORT NUMBER : R865468
Enter DATE OF BIRTH (dd/mm/yyyy) : 09/11/1990
Enter SEAT TYPE (Platinum, Gold or Diamond) : Gold
Enter SEAT NO. : 5

Ticket with Ticket No. 003 has been booked

PERSON 3
------------------------------------------------------------
Enter TICKET NUMBER : 002
Enter person's NAME : Rohan
Enter AGE : 24
Enter PASSPORT NUMBER : E535607
Enter DATE OF BIRTH (dd/mm/yyyy) : 19/12/1997
Enter SEAT TYPE (Platinum, Gold or Diamond) : Diamond
Enter SEAT NO. : 8

Ticket with Ticket No. 002 has been booked

+================================================+
| Please pick an operation to perform on seatbook  |
+------------------------------------------------+
| 1. CREATE NEW FILE                             |
| 2. ADD TICKETS                                 |
| 3. REMOVE TICKET                               |
| 4. MODIFY TICKET                               |
| 5. SEARCH TICKET                               |
| 6. DISPLAY TICKET                              |
| 7. EXIT                                        |
+================================================+

Enter the choice : 6
```

```
+-----------------------------------+
|              SELECT               |
+-----------------------------------+
| 1. Display all                    |
| 2. Display Particular SEAT TYPE   |
+-----------------------------------+

Enter the choice : 1
TICKET NO. | NAME | AGE | PASSPORT NO. | DATE OF BIRTH | SEAT TYPE | SEAT NO.
001 | Samuel | 21 | H986542 | 04/03/2000 | Platinum | 1
003 | Sarah | 30 | R865468 | 09/11/1990 | Gold | 5
002 | Rohan | 24 | E535607 | 19/12/1997 | Diamond | 8


Number of Platinum Seats occupied :  1
Number of Gold Seats occupied :  1
Number of Diamond Seats occupied :  1
Total number of Seats occupied :  3


Number of Platinum Seats left :  699
Number of Gold Seats left :  249
Number of Diamond Seats left :  49
Number of Seats left :  997

+================================================+
| Please pick an operation to perform on seatbook  |
+------------------------------------------------+
| 1. CREATE NEW FILE                             |
| 2. ADD TICKETS                                 |
| 3. REMOVE TICKET                               |
| 4. MODIFY TICKET                               |
| 5. SEARCH TICKET                               |
| 6. DISPLAY TICKET                              |
| 7. EXIT                                        |
+================================================+

Enter the choice : 2

Enter number of people you wish to book for: 6

PERSON 1
-----------------------------------------------------------------
Enter TICKET NUMBER : 678
Enter person's NAME : Freddy
Enter AGE : 34
Enter PASSPORT NUMBER : T945762
Enter DATE OF BIRTH (dd/mm/yyyy) : 28/09/1987
Enter SEAT TYPE (Platinum, Gold or Diamond) : Gold
Enter SEAT NO. : 678

Record added

PERSON 2
-----------------------------------------------------------------
Enter TICKET NUMBER : 232
Enter person's NAME : Harry
Enter AGE : 50
Enter PASSPORT NUMBER : J046234
Enter DATE OF BIRTH (dd/mm/yyyy) : 16/07/1971
Enter SEAT TYPE (Platinum, Gold or Diamond) : Diamond
Enter SEAT NO. : 232

Record added

PERSON 3
-----------------------------------------------------------------
Enter TICKET NUMBER : 531
Enter person's NAME : Derek
Enter AGE : 18
Enter PASSPORT NUMBER : E532560
Enter DATE OF BIRTH (dd/mm/yyyy) : 30/10/2001
Enter SEAT TYPE (Platinum, Gold or Diamond) : Platinum
Enter SEAT NO. : 531
```

```
PERSON 4
------------------------------------------------------------
Enter TICKET NUMBER : 811
Enter person's NAME : Gauri
Enter AGE : 32
Enter PASSPORT NUMBER : Y408645
Enter DATE OF BIRTH (dd/mm/yyyy) : 22/01/1990
Enter SEAT TYPE (Platinum, Gold or Diamond) : Gold
Enter SEAT NO. : 811

Record added

PERSON 5
------------------------------------------------------------
Enter TICKET NUMBER : 008
Enter person's NAME : Hanah
Enter AGE : 22
Enter PASSPORT NUMBER : X623653
Enter DATE OF BIRTH (dd/mm/yyyy) : 07/02/1999
Enter SEAT TYPE (Platinum, Gold or Diamond) : Diamond
Enter SEAT NO. : 004

Record added

PERSON 6
------------------------------------------------------------
Enter TICKET NUMBER : 500
Enter person's NAME : John
Enter AGE : 37
Enter PASSPORT NUMBER : R311134
Enter DATE OF BIRTH (dd/mm/yyyy) : 25/04/1986
Enter SEAT TYPE (Platinum, Gold or Diamond) : Gold
Enter SEAT NO. : 500

Record added

+=================================================+
| Please pick an operation to perform on seatbook |
+-------------------------------------------------+
| 1. CREATE NEW FILE                              |
| 2. ADD TICKETS                                  |
| 3. REMOVE TICKET                                |
| 4. MODIFY TICKET                                |
| 5. SEARCH TICKET                                |
| 6. DISPLAY TICKET                               |
| 7. EXIT                                         |
+=================================================+

Enter the choice : 7

You have exited
```

TICKET NO.	NAME	AGE	PASSPORT NO.	DATE OF BIRTH	SEAT TYPE	SEAT NO.
1	Samuel	21	H986542	04/03/2000	Platinum	1
3	Sarah	30	R865468	09/11/1990	Gold	5
2	Rohan	24	E535607	19/12/1997	Diamond	8
678	Freddy	34	T945762	28/09/1987	Gold	678
232	Harry	50	J046234	16/07/1971	Diamond	232
531	Derek	18	E532560	30/10/2001	Platinum	531
811	Gauri	32	Y408645	22/01/1990	Gold	811
8	Hanah	22	X623653	07/02/1999	Diamond	4
500	John	37	R311134	25/04/1986	Gold	500

```
+=====================================================+
| Please pick an operation to perform on seatbook     |
+-----------------------------------------------------+
| 1. CREATE NEW FILE                                  |
| 2. ADD TICKETS                                      |
| 3. REMOVE TICKET                                    |
| 4. MODIFY TICKET                                    |
| 5. SEARCH TICKET                                    |
| 6. DISPLAY TICKET                                   |
| 7. EXIT                                             |
+=====================================================+

Enter the choice : 5

Enter TICKET NO. : 008

We have found the person, the information is :
TICKET NO.     :  008
NAME           :  Hanah
AGE            :  22
PASSPORT NO.   :  X623653
DATE OF BIRTH  :  07/02/1999
SEAT TYPE      :  Diamond
SEAT NO.       :  4

+=====================================================+
| Please pick an operation to perform on seatbook     |
+-----------------------------------------------------+
| 1. CREATE NEW FILE                                  |
| 2. ADD TICKETS                                      |
| 3. REMOVE TICKET                                    |
| 4. MODIFY TICKET                                    |
| 5. SEARCH TICKET                                    |
| 6. DISPLAY TICKET                                   |
| 7. EXIT                                             |
+=====================================================+

Enter the choice : 6

+-------------------------------------+
|              SELECT                 |
+-------------------------------------+
| 1. Display all                      |
| 2. Display Particular SEAT TYPE     |
+-------------------------------------+

Enter the choice : 2

Enter the Seat Type to be displayed : Diamond

TICKET NO. | NAME | AGE | PASSPORT NO. | DATE OF BIRTH | SEAT TYPE | SEAT NO.
002 | Rohan | 24 | E535607 | 19/12/1997 | Diamond | 8
232 | Harry | 50 | J046234 | 16/07/1971 | Diamond | 232
008 | Hanah | 22 | X623653 | 07/02/1999 | Diamond | 4

Number of Diamond Seats occupied :  3
```

```
+=================================================+
| Please pick an operation to perform on seatbook |
+-------------------------------------------------+
| 1. CREATE NEW FILE                              |
| 2. ADD TICKETS                                  |
| 3. REMOVE TICKET                                |
| 4. MODIFY TICKET                                |
| 5. SEARCH TICKET                                |
| 6. DISPLAY TICKET                               |
| 7. EXIT                                         |
+=================================================+

Enter the choice : 4

Enter TICKET NO. : 232

We have found the person, the information is :
TICKET NO.     :  232
NAME           :  Harry
AGE            :  50
PASSPORT NO.   :  J046234
DATE OF BIRTH  :  16/07/1971
SEAT TYPE      :  Diamond
SEAT NO.       :  232

+-----------------------------------+
|    Select field to be modified    |
+-----------------------------------+
| 1. NAME                           |
| 2. AGE                            |
| 3. PASSPORT NO.                   |
| 4. DATE OF BIRTH                  |
| 5. SEAT TYPE                      |
| 6. SEAT NO.                       |
| 7. EXIT                           |
+-----------------------------------+

Enter your choice (1-7) : 5
Enter SEAT TYPE (Platinum, Gold or Diamond) : Platinum

+-----------------------------------+
|    Select field to be modified    |
+-----------------------------------+
| 1. NAME                           |
| 2. AGE                            |
| 3. PASSPORT NO.                   |
| 4. DATE OF BIRTH                  |
| 5. SEAT TYPE                      |
| 6. SEAT NO.                       |
| 7. EXIT                           |
+-----------------------------------+

Enter your choice (1-7) : 7

+=================================================+
| Please pick an operation to perform on seatbook |
+-------------------------------------------------+
| 1. CREATE NEW FILE                              |
| 2. ADD TICKETS                                  |
| 3. REMOVE TICKET                                |
| 4. MODIFY TICKET                                |
| 5. SEARCH TICKET                                |
| 6. DISPLAY TICKET                               |
| 7. EXIT                                         |
+=================================================+

Enter the choice : 3
```

```
Enter the choice : 3

Enter TICKET NUMBER of person to be removed: 008

We have found the person, their information is :
TICKET NO.     :  008
NAME           :  Hanah
AGE            :  22
PASSPORT NO.   :  X623653
DATE OF BIRTH  :  07/02/1999
SEAT TYPE      :  Diamond
SEAT NO.       :  4

 Would you like to remove this ticket :
1. Yes
2. No :
1

Record deleted

+=================================================+
| Please pick an operation to perform on seatbook |
+-------------------------------------------------+
| 1. CREATE NEW FILE                              |
| 2. ADD TICKETS                                  |
| 3. REMOVE TICKET                                |
| 4. MODIFY TICKET                                |
| 5. SEARCH TICKET                                |
| 6. DISPLAY TICKET                               |
| 7. EXIT                                         |
+=================================================+

Enter the choice : 6

+-----------------------------------+
|              SELECT               |
+-----------------------------------+
| 1. Display all                    |
| 2. Display Particular SEAT TYPE   |
+-----------------------------------+

Enter the choice : 1
TICKET NO. | NAME | AGE | PASSPORT NO. | DATE OF BIRTH | SEAT TYPE | SEAT NO.
001 | Samuel | 21 | H986542 | 04/03/2000 | Platinum | 1
003 | Sarah | 30 | R865468 | 09/11/1990 | Gold | 5
002 | Rohan | 24 | E535607 | 19/12/1997 | Diamond | 8
678 | Freddy | 34 | T945762 | 28/09/1987 | Gold | 678
232 | Harry | 50 | J046234 | 16/07/1971 | Platinum | 232
531 | Derek | 18 | E532560 | 30/10/2001 | Platinum | 531
811 | Gauri | 32 | Y408645 | 22/01/1990 | Gold | 811
500 | John | 37 | R311134 | 25/04/1986 | Gold | 500


Number of Platinum Seats occupied :  3
Number of Gold Seats occupied :  4
Number of Diamond Seats occupied :  1
Total number of Seats occupied :  8


Number of Platinum Seats left :  697
Number of Gold Seats left :  246
Number of Diamond Seats left :  49
Number of Seats left :  992
```

TICKET NO.	NAME	AGE	PASSPORT NO.	DATE OF BIRTH	SEAT TYPE	SEAT NO.
1	Samuel	21	H986542	04/03/2000	Platinum	1
3	Sarah	30	R865468	09/11/1990	Gold	5
2	Rohan	24	E535607	19/12/1997	Diamond	8
678	Freddy	34	T945762	28/09/1987	Gold	678
232	Harry	50	J046234	16/07/1971	Platinum	232
531	Derek	18	E532560	30/10/2001	Platinum	531
811	Gauri	32	Y408645	22/01/1990	Gold	811
500	John	37	R311134	25/04/1986	Gold	500

SCOPE OF IMPROVEMENT

There is a lot of scope of improvement in this program. It has been made by school students as a part of their project file so it is a very basic version of the program.

For improvement the following things can be considered:

- Graphics can be added which will make the interface more pleasing to the eye.
- Unique ticket numbers can be generated to make the program more reliable.
- Unique Seat numbers can be generated to avoid people from getting the same seat number which can lead to problems.
- A pictorial representation of the seat arrangement can be given for the user to choose from.

BIBLIOGRAPHY

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- NCERT Computer Science Class XII
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