

National University of Computer and Emerging Sciences, Lahore Campus



Course:	Introduction to Data Science	Course Code:	DS-2001
Program:	BS(Data Science)	Semester:	Fall 2023
Duration:	30 Minutes	Total Marks:	10
Due Date:	13-Sep-23	Weight	3.33%
Section:	A	Page(s):	2
Exam:	Assignment 1	Roll No.	

- Instruction/Notes:**
- You are required to submit your assignment before the specified deadline.
 - Late submissions will incur a penalty of -1 point for each day of delay.
 - Please note that any form of plagiarism will result in a grade of ZERO.
 - Do not change the names of the given functions.
 - Ensure that you submit your assignment in the form of a Python notebook file.

Problem:

Your assignment is to develop Airplane seat reservation system using python. There are 12 rows and 7 seats in a row i.e., total 84 seats. First two rows (14 seats) are for first class, next two rows (14) seats are for the business class and the remaining 8 rows (56 seats) are for the economy class. First class fair is 18000, business class fair is 14000 and economy class fair is 10000. Create a 2D array to store the information of reserve seats. 0 indicates available and 1 indicates reserved. Store the same in a text file and update it after each operation. Your system should be able to perform all the tasks as given in below snapshot. Implement all the functions as given below.

```
-----  
Welcome To Airplane Reservation System  
-----
```

1. Book First Class Seats
2. Book Business Class Seats
3. Book Economy Class Seats
4. View Airplane Seating Plan
5. Know Fare
6. System Reset
7. Exit from the Booking System

```
def readWriteData(filename, operation):
```

```
#take the name of file and type of operation as input and load/update the contents of the file
```

```
Pass
```

```
def bookFirstClass(noOfSeats):
```

```
#take the number of seats as input and reserves them in first class
```

```
pass
```

```
def bookBusinessClass(noOfSeats):
```

```
#take the number of seats as input and reserves them in business class
```

```
pass
```

```

def bookEconomyClass(noOfSeats):
    #take the number of seats as input and reserves them in economy class
    pass

def checkAvailableSeats(className):
    #checks how many seats are available. this function will be helpful in above listed functions for booking the seats
    pass

def getFare():
    #print the fair for each class
    pass

def viewSeatingPlan():
    #display seating plan, a matrix of 12x7. 0 represents available and 1 booked.
    pass

def systemReset():
    #reset all values of 12x7 matrix to 0's
    pass

```

Test Run

```

-----
Welcome To Air Plane Resesrvation System
-----
1. Book First Class Seats.
2. Book Business Class seats.
3. Book Economy Class Seats.
4. View Airplane Seating Plane.
5. Know Fair.
6. System Reset
7. Exit From The Booking System.
Enter Your Choice...: 1
Enter How Many Seats You Want To Book : 8
Your 8 First Class Tickets are booked.
Your Fair is Rs. 144000

```

Welcome To Air Plane Resesrvation System

1. Book First Class Seats.
2. Book Business Class seats.
3. Book Economy Class Seats.
4. View Airplane Seating Plane.
5. Know Fair.
6. System Reset
7. Exit From The Booking System.

Enter Your Choice...: 4

1	1	1	1	1	1	1
1	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Welcome To Air Plane Resesrvation System

1. Book First Class Seats.
2. Book Business Class seats.
3. Book Economy Class Seats.
4. View Airplane Seating Plane.
5. Know Fair.
6. System Reset
7. Exit From The Booking System.

Enter Your Choice...: 2

Enter How Many Seats You Want To Book : 15

Sorry !!!, There are only 14 Business Class Seats available.