King Saud University
College of Computer & Information Sciences
Department of Computer Science

CSC111: Computer Programming - I Assignment 2 **Due date: 27-11-2025**

Consider the following class**:**

FlightTicket
- numOfTickets: int - passengerName: String - ticketID: String - classType: char - daysBeforeFlight: int
+ FlightTicket(passengerName:String, classType:char, daysBeforeFlight:int) - generateTicketID(): String + calculateTicketPrice(): double + toString(): String + setters & getters

Attributes:

Attribute	**Type**	**Description**
numOfTickets	static int	The total number of created tickets.
passengerName	String	The name of the passenger.
ticketID	String	A unique ID for each ticket.
classType	char	Type of ticket class: Economy ('E'), Business ('B'), or First ('F').
daysBeforeFlight	int	The number of days remaining before the flight.

Methods:

1. **FlightTicket(passengerName:String, classType:char, daysBeforeFlight:int)**
   Parameterized Constructor. Use the argument values to initialize passengerName, classType, and daysBeforeFlight. Then generate a value for ticketID and increase numOfTickets by 1.
2. **generateTicketID()**
   Generates a unique ticket ID in the following format:

   - First two letters of the class type name (in uppercase)
   - Followed by the last two letters of passenger name (in uppercase)
   - Followed by the current number of tickets.

   For example:
   If passenger name = **"Ahmed"**, classType = **'F'** (First) and **numOfTickets = 0** then the ticket ID would be **"FIED0"**.

3. **calculateTicketPrice()**
   Calculates and returns the ticket price based on the class type and days before flight as follows:

Class Type	Base Fare (SAR)	Additional per Day Before Flight (SAR)
Economy ('E')	850	10
Business ('B')	1500	15
First ('F')	2500	20

   Example:
   If the passenger chooses Business class with 10 days remaining before flight date,
   Total Price = 1500 + (15 × 10) = 1650 SAR

4. **toString()**
   Overrides the default toString() method to return a formatted string containing passenger name, ticket ID, class type, days before flight, and total price. This allows the ticket information to be displayed directly when the object is printed.

   Example:

```
FlightTicket t1 = new FlightTicket("Ahmed", 'F', 5);

System.out.println(t1);
```

   Output:
   Passenger: Ahmed, ID: FIED0, Class: F, Days Before Flight: 5, Total: 2600.00 SAR

Questions

- Implement class **FlightTicket**

- Implement a class **called FlightTicketDemo with the following methods:**

1. **isValidClassType(char type):** Checks if the ticket type is valid (either 'E', 'B', or 'F').
2. **main method** does the following:
   a) Reads user input for passenger name, ticket class, and days before flight.
   b) Ensures the class type is valid before creating the object.
   c) Creates an object using the parameterized constructor with user inputs.
   d) Prints all ticket information using toString().
   e) Repeat the process until the user types exit (as the passenger name).

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Submission Rules:

- Submit your solution as `FlightTicket.java and FlightTicketDemo.java` on LMS
- Code must compile and run
- Code style:
    - Use clear variable names
    - Indent properly
    - Add short comments for key parts

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Sample run

```
Enter passenger name (or ‘exit’ to quit): Ahmed
Enter ticket class ('E', 'B', 'F'): F
Enter days before flight: 5
Passenger: Ahmed, ID: FIED0, Class: F, Days Before Flight: 5, Total: 2600.00 SAR
============================
Enter passenger name (or ‘exit’ to quit): Sara
Enter ticket class ('E', 'B', 'F'): e
Enter days before flight: 12
Passenger: Sara, ID: ECRA1, Class: E, Days Before Flight: 12, Total: 970.00 SAR
============================
Enter passenger name (or ‘exit’ to quit): Bilal
Enter ticket class ('E', 'B', 'F'): b
Enter days before flight: 7
Passenger: Bilal, ID: BUAL2, Class: B, Days Before Flight: 7, Total: 1605.00 SAR
============================
Enter passenger name (or ‘exit’ to quit): Aisha
Enter ticket class ('E', 'B', 'F'): e
Enter days before flight: 3
Passenger: Aisha, ID: ECHA3, Class: E, Days Before Flight: 3, Total: 880.00 SAR
============================
Enter passenger name (or ‘exit’ to quit): A
Enter ticket class ('E', 'B', 'F'): e
Enter days before flight: 0
Passenger: A, ID: ECA4, Class: E, Days Before Flight: 0, Total: 850.00 SAR
============================
Enter passenger name (or ‘exit’ to quit): Omar
Enter ticket class ('E', 'B', 'F'): x
ERROR: Invalid class type. Must be 'E', 'B', or 'F'.
Enter ticket class ('E', 'B', 'F'): b
Enter days before flight: 5
Passenger: Omar, ID: BUAR5, Class: B, Days Before Flight: 5, Total: 1575.00 SAR
============================
Enter passenger name (or ‘exit’ to quit): exit
Goodbye!
```