**Software Development 3**

In this exercise you are required to write a set of classes to store passenger details about a set of flights.

The Flight class contains an inner class called Passenger. The requirements for each of the classes you need to create are documented below.

**Flight class (Outer Class)**

The Flight class has 3 member variables:

* + capacity (int) and duration (double) of the flight
  + a list of passengers (ArrayList)

Create a suitable constructor to intialise the capacity and duration

Create a method that takes a reference variable of type Passenger as a parameter and adds it to the list.

Create a print() method that prints the name and age of each passenger on a flight.

Create a method that calculates and returns the number of seats (int) still available on the flight.

Create a method that calculates and returns the name and age of the oldest person on the flight. Both details can be returned as a string.

**Passenger class (Inner Class)**

The Passenger class has two member variables name (String), and age (int)

Create a suitable constructor to intialise the member variables using the parameter list.

**Test Class**

Create a collection of Flight objects (2 will be appropriate)

Fill the Flight array list as follows:

* ask the user to enter the capacity of the flight
* ask the user to enter the duration of the flight
* Write code to call the constructor to create a flight object and add it to the array list

Note: Before you start creating passenger objects please note that the number of passengers on a flight is randomly generated for each flight i.e. each flight should have a different number of passengers (from 1 to 2)

For each flight you need to:

* ask the user to enter the name
* ask the user to enter the age
* Call the constructor to create a passenger object (inner class)
* Call the method to add the Passenger object to the array list in the Flight class

Display the passenger list for each of the 2 flights

Call the method to display the number of seats still available

Call the method to display the details of the oldest passenger on each flight

**Exception Handling**

Amend your code in the test class to catch the InputMismatchException when the user enters invalid values for flight capacity, duration and age. See sample output on page 4

**Sample Output (Without Exception Handling):**

Enter the flight capacity for flight:1

100

Enter the duration for flight:1

1.5

Enter the name for passenger:1

Pat

Enter the age for passenger:1

34

Enter the name for passenger:2

John

Enter the age for passenger:2

45

Enter the flight capacity for flight:2

200

Enter the duration for flight:2

2.5

Enter the name for passenger:1

Kim

Enter the age for passenger:1

33

Enter the name for passenger:2

Jane

Enter the age for passenger:2

77

Passenger List for Flight Number1

Pat,34

John,45

Number seats available:98

Oldest Person is:John age:45 on flight number:1

Passenger List for Flight Number2

Kim,33

Jane,77

Number seats available:198

Oldest Person is:Jane age:77 on flight number:2

**Sample Output (With Exception Handling)**

Enter the flight capacity for flight:1

f

Data Entry error - please re try

Enter the flight capacity for flight:1

100

Enter the duration for flight:1

d

Data Entry error - please re try

Enter the duration for flight:1

3.5

Number Passengers:2

Enter the name for passenger:1

Pat

Enter the age for passenger:1

d

Data Entry error - please re try

Enter the age for passenger:1

34

Enter the name for passenger:2

John

Enter the age for passenger:2

d

Data Entry error - please re try

Enter the age for passenger:2

44

Enter the flight capacity for flight:2

f

Data Entry error - please re try

Enter the flight capacity for flight:2

300

Enter the duration for flight:2

d

Data Entry error - please re try

Enter the duration for flight:2

3.5

Number Passengers:2

Enter the name for passenger:1

Damian

Enter the age for passenger:1

s

Data Entry error - please re try

Enter the age for passenger:1

23

Enter the name for passenger:2

Ali

Enter the age for passenger:2

d

Data Entry error - please re try

Enter the age for passenger:2

34

Passenger List for Flight Number1

Pat,34

John,44

Number seats available:98

Oldest Person is:John age:44 on flight number:1

Passenger List for Flight Number2

Damian,23

Ali,34

Number seats available:298

Oldest Person is:Ali age:34 on flight number:2