OOJ lab exercise-2

Extra questions:

1. Develop a Java program to create a class Player with variables id, name, scores, no_matches_played with default access specifier. Include the following:

a. Constructors

b. appropriate methods that calculates the average scores of the player and displays the same.

Create two player objects and display the player details who has the greater average score

```
import java.util.*;

class Player{
   String id;
   String name;
   int scores[];
   int no_matches_played;

   Player(){}

   Player(String id1, String name1, int scores1[], int n){
      id = id1;
      name = name1;
      scores = scores1;
```

```
        no_matches_played = n;
    }

    void getDetails(){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter player details:");
        System.out.println("Enter ID:");
        id = sc.next();
        System.out.println("Enter Name:");
        name = sc.next();
        System.out.println("Enter number of matches played:");
        no_matches_played = sc.nextInt();
        scores = new int[no_matches_played];
        for(int i = 0; i < no_matches_played; i++){
            System.out.println("Enter the score of match " + (i+1) + ":");
            scores[i] = sc.nextInt();
        }
    }
    void printDetails(){
        System.out.println("\nThe player details are:");
        System.out.println("ID: " + id + "\nName: " + name + "\nNo of matches
played: " + no_matches_played);
        for(int i = 0; i < no_matches_played; i++){
            System.out.println("The score of the match " + (i+1) +": " + scores[i]);
        }
    }
    double avg(){
```

```
        int scoreSum = 0;
        for(int i = 0; i < no_matches_played; i++){
            scoreSum += scores[i];
        }
        return (scoreSum / (no_matches_played + 0.0));
    }
}


public class Playermain {
    public static void main(String[] args){
        int[] score = {3, 4, 7};
        double p1avg, p2avg;
        Player p1 = new Player();
        Player p2 = new Player("123", "Rahul", score,  3);
        p1.getDetails();
        p1avg = p1.avg();
        p2avg = p2.avg();
        p1.printDetails();
        p2.printDetails();
           System.out.println("The Average score of Player1 is "+p1avg);
           System.out.println("The Average score of Player2 is "+p2avg);

        if (p1avg > p2avg){
            System.out.println("\nPlayer 1 has the greatest average score.");
               p1.printDetails();
```

```
        }
        else if(p2avg > p1avg){
            System.out.println("\nPlayer 2 has the greatest average score.");
               p2.printDetails();
        }
        else{
            System.out.println("\nBoth player 1 and player 2 have equal average
score. ");
                p1.printDetails();
                p2.printDetails();
        }
    }
}
```

```
C:\Users\win10\Documents\Java lab programs>javac Playermain.java

C:\Users\win10\Documents\Java lab programs>java Playermain
Enter player details:
Enter ID:
1
Enter Name:
Ajay
Enter number of matches played:
2
Enter the score of match 1:
5
Enter the score of match 2:
6

The player details are:
ID: 1
Name: Ajay
No of matches played: 2
The score of the match 1: 5
The score of the match 2: 6

The player details are:
ID: 123
Name: Rahul
No of matches played: 3
The score of the match 1: 3
The score of the match 2: 4
The score of the match 3: 7
The Average score of Player1 is 5.5
The Average score of Player2 is 4.666666666666667

Player 1 has the greatest average score.

The player details are:
ID: 1
Name: Ajay
No of matches played: 2
The score of the match 1: 5
The score of the match 2: 6
```

2. Develop a Java program to create a class Book with members – bookid, booktitle, no_of_pages, year_of_pub, author, publisher and price. Create three objects of book class. Include methods in Book class that do the following:

a. Accepting the book details

b. Displaying the book details

c. Accept the author name and display the book details.

d. Display the booktitle of the most expensive book

e. Display the count of the books published in the year 2020.

f. Display the book details of the book with the least number of pages.

```
import java.util.*;
class Book{
	int bookid;
	String booktitle;
	int no_of_pages;
	int year_of_pub;
	String author;
	String publisher;
	double price;

	void accept()
	{
	Scanner s=new Scanner(System.in);
	System.out.println("\nEnter the Book details:");
	System.out.println("Enter Book ID:");
	bookid=s.nextInt();
	System.out.println("Enter Book title:");
	booktitle=s.next();
	System.out.println("Enter number of pages of the book:");
	no_of_pages=s.nextInt();
	System.out.println("Enter year of publication of the book:");
	year_of_pub=s.nextInt();
	System.out.println("Enter the name of author of the book:");
```

```
        author=s.next();
        System.out.println("Enter the publisher name of the book:");
        publisher=s.next();
        System.out.println("Enter price of the book:");
        price=s.nextInt();
        }

        void display()
        {
        System.out.println("\nThe Book details are as below:");
        System.out.println("The Book ID:"+bookid);
        System.out.println("The Book title:"+booktitle);
        System.out.println("The number of pages of the book:"+no_of_pages);
        System.out.println("The year of publication of the book:"+year_of_pub);
        System.out.println("The name of author of the book:"+author);
        System.out.println("The name of publisher name of the
book:"+publisher);
        System.out.println("The price of the book:"+price);
        }
}

class BookMain{
public static void main(String ss[]){
Scanner s=new Scanner(System.in);
String authorname;
boolean i,j,k;
int n=0;
```

```
Book b1=new Book();
b1.accept();
Book b2=new Book();
b2.accept();
Book b3=new Book();
b3.accept();
b1.display();
b2.display();
b3.display();
System.out.println("\nEnter the author name:");
authorname=s.next();
i=authorname.equals(b1.author);
j=authorname.equals(b2.author);
k=authorname.equals(b3.author);
if(i==true)
{
System.out.println("\nThe details of the book written by "+authorname+" are as follows:");
b1.display();
}
if(j==true)
{
System.out.println("\nThe details of the book written by "+authorname+" are as follows:");
b2.display();
}
if(k==true)
```

```
{
System.out.println("\nThe details of the book written by "+authorname+" are as follows:");
b3.display();
}
if((b1.price>b2.price)&&(b1.price>b3.price))
System.out.println("\nThe most expensive book among the three is "+b1.booktitle);
if((b2.price>b1.price)&&(b2.price>b3.price))
System.out.println("\nThe most expensive book among the three is "+b2.booktitle);
if((b3.price>b1.price)&&(b3.price>b2.price))
System.out.println("\nThe title of the most expensive book among the three is "+b3.booktitle);

if(b1.year_of_pub==2020)
n++;
if(b2.year_of_pub==2020)
n++;
if(b3.year_of_pub==2020)
n++;
System.out.println("\nNumber of books published in the year 2020 are "+n);
if((b1.no_of_pages<b2.no_of_pages)&&(b1.no_of_pages<b3.no_of_pages))
{
System.out.println("\nThe details of the book with the least number of pages among the three are as follows:");
b1.display();
}
```

```
if((b2.no_of_pages<b1.no_of_pages)&&(b2.no_of_pages<b3.no_of_pages))
{
System.out.println("The details of the book with the least number of pages among the three are as follows:");
b2.display();
}
if((b3.no_of_pages<b1.no_of_pages)&&(b3.no_of_pages<b2.no_of_pages))
{
System.out.println("The details of the book with the least number of pages among the three are as follows:");
b3.display();
}
}
}
```

```
C:\Users\win10\Documents\Java lab programs>java BookMain

Enter the Book details:
Enter Book ID:
1
Enter Book title:
Stars
Enter number of pages of the book:
100
Enter year of publication of the book:
1998
Enter the name of author of the book:
John
Enter the publisher name of the book:
Tata
Enter price of the book:
300

Enter the Book details:
Enter Book ID:
2
Enter Book title:
King
Enter number of pages of the book:
1000
Enter year of publication of the book:
2020
Enter the name of author of the book:
Peter
Enter the publisher name of the book:
Ben
Enter price of the book:
1500

Enter the Book details:
Enter Book ID:
3
Enter Book title:
Weapon
Enter number of pages of the book:
400
Enter year of publication of the book:
2013
Enter the name of author of the book:
Henry
Enter the publisher name of the book:
Grill
Enter price of the book:
600
```

```
The Book details are as below:
The Book ID:1
The Book title:Stars
The number of pages of the book:100
The year of publication of the book:1998
The name of author of the book:John
The name of publisher name of the book:Tata
The price of the book:300.0

The Book details are as below:
The Book ID:2
The Book title:King
The number of pages of the book:1000
The year of publication of the book:2020
The name of author of the book:Peter
The name of publisher name of the book:Ben
The price of the book:1500.0

The Book details are as below:
The Book ID:3
The Book title:Weapon
The number of pages of the book:400
The year of publication of the book:2013
The name of author of the book:Henry
The name of publisher name of the book:Grill
The price of the book:600.0
```

```
Enter the author name:
John

The details of the book written by John are as follows:

The Book details are as below:
The Book ID:1
The Book title:Stars
The number of pages of the book:100
The year of publication of the book:1998
The name of author of the book:John
The name of publisher name of the book:Tata
The price of the book:300.0

The most expensive book among the three is King

Number of books published in the year 2020 are 1

The details of the book with the least number of pages among the three are as follows:

The Book details are as below:
The Book ID:1
The Book title:Stars
The number of pages of the book:100
The year of publication of the book:1998
The name of author of the book:John
The name of publisher name of the book:Tata
The price of the book:300.0
```