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.

```
import java.util.*;
class Player {
	static int id,no_matches_played;
	String name;
	int scores[]=new int[no_matches_played];
	Player() {
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter name");
		name=sc.nextLine();
		System.out.println("Enter id");
		id=sc.nextInt();
		System.out.println("Enter number of matches played");
		no_matches_played=sc.nextInt();
		System.out.println("Enter scores");
		scores=new int[no_matches_played];
		for(int i=0;i<no_matches_played;i++) {
			scores[i]=sc.nextInt();
			System.out.println("");
		}
	}
	double calc() {
		int sum=0;
		for(int i=0;i<no_matches_played;i++)
			sum+=scores[i];
		return (sum/no_matches_played);
	}
	void disp() {
		System.out.println("Average score of player "+name+" is:"+calc());
	}
	public static void main(String args[]) {
		Player p1=new Player();
		Player p2=new Player();
		p1.disp();
		p2.disp();
		double a1=p1.calc();
		double a2=p2.calc();
		if(a1>a2) {
			System.out.println("Player with better score is");
			System.out.println("Name:"+p1.name);
			System.out.println("ID:"+p1.id);
			System.out.println("Average score:"+a1);
		}
		else if(a2>a1) {
			System.out.println("Player with better score is");
			System.out.println("Name:"+p2.name);
			System.out.println("ID:"+p2.id);
			System.out.println("Average score:"+a2);
		}
	}
```

```
Enter name
aarya
Enter id
156
Enter number of matches played
4
Enter scores
23

34


878

9

Enter name
prajith
Enter id
243
Enter number of matches played
2
Enter scores
1

234

Average score of player aarya is:28.0
Average score of player prajith is:117.0
Player with better score is
Name:prajith
ID:243
Average score:117.0
}
```

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.Scanner;
class Book{
	private String bookid;
	private String booktitle;
	private int no_of_pages;
	private int year_of_pub;
	private String author;
	private String publisher;
	private double price;
	Scanner sc = new Scanner(System.in);
	void getDetails(){
		System.out.println("Enter book id:");
		bookid = sc.next();
		System.out.println("Enter book title:");
		booktitle = sc.next();
		System.out.println("Enter no of pages:");
		no_of_pages = sc.nextInt();
		System.out.println("Enter year of pub:");
		year_of_pub = sc.nextInt();
		System.out.println("Enter author name:");
		author = sc.next();
		System.out.println("Enter publisher name:");
		publisher = sc.next();
		System.out.println("Enter price:");
		price = sc.nextDouble();
	}

	void printDetails(){
		System.out.println("The book details are:");
		System.out.println("book id: "+ bookid);
		System.out.println("book title: "+ booktitle);
		System.out.println("no of pages: "+ no_of_pages);
		System.out.println("year of publish: "+year_of_pub);
		System.out.println("author name: "+ author);
		System.out.println("publisher: "+ publisher);
		System.out.println("price: "+ price);

	}

	String bookByAuthor(){
		return author;
	}

	double expensive(){
```

```
            return price;
        }

        int count(){
            return year_of_pub;
        }
        int pages(){
            return no_of_pages;
        }
}

public class E_2 {
        public static void main(String[] args){
        Book b1 = new Book();
        Book b2 = new Book();
        Book b3 = new Book();
        Scanner sc = new Scanner(System.in);
        System.out.println("\n\nBook 1");
        b1.getDetails();
        System.out.println("\n\nBook 2");
        b2.getDetails();
        System.out.println("\n\nBook 3");
        b3.getDetails();
        System.out.println("\n\nBook 1");
        b1.printDetails();
        System.out.println("\n\nBook 2");
        b2.printDetails();
        System.out.println("\n\nBook 3");
        b3.printDetails();

        String auth, bk1, bk2, bk3;
        System.out.println("\n\nEnter author name to find his book:");
        auth = sc.next();
        bk1 = b1.bookByAuthor();
        if (bk1.equals(auth)){
            b1.printDetails();
        }
        bk2 = b2.bookByAuthor();
        if (bk2.equals(auth)){
            b2.printDetails();
        }
        bk3 = b3.bookByAuthor();
        if (bk3.equals(auth)){
            b3.printDetails();
        }

        double p1, p2, p3;
        p1 = b1.expensive();
        p2 = b2.expensive();
        p3 = b3.expensive();
        System.out.println("\n\nThe details of most expensive book are:");
        if(p1>p2){
            if(p1>p3){
                b1.printDetails();
            }
            else{
                 b3.printDetails();
```

```
            }
        }
        else {
            if(p2>p3){
                b2.printDetails();
            }
            else{
                b3.printDetails();
            }
        }

        int count = 0,c1, c2, c3;
        c1 = b1.count();
        if(c1==2020){
            count++;
        }
        c2 = b2.count();
        if(c2==2020){
            count++;
        }
        c3 = b3.count();
        if(c3==2020){
            count++;
        }
        System.out.println("\n\nno of books published in 2020: "+ count);

        int page, pg1, pg2, pg3;
        pg1=b1.pages();
        pg2=b2.pages();
        pg3=b3.pages();
        System.out.println("\n\nbook with least pages:");
        if(pg1<pg2){
            if(pg1<pg3){
                b1.printDetails();
            }
            else{
                b3.printDetails();
            }
        }
        else {
            if(pg2<pg3){
                b2.printDetails();
            }
            else{
                b3.printDetails();
            }
        }
    }
    }
```

```
Book 1
Enter book id:
wrt
Enter book title:
fountainhead
Enter no of pages:
704
Enter year of pub:
2020
Enter author name:
aynrand
Enter publisher name:
signet
Enter price:
400


Book 2
Enter book id:
tgh
Enter book title:
atlasshrugged
Enter no of pages:
450
Enter year of pub:
1980
Enter author name:
marcus
Enter publisher name:
deepthi
Enter price:
500


Book 3
Enter book id:
qtwer
Enter book title:
zarathustra
Enter no of pages:
200
Enter year of pub:
1856
Enter author name:
1826
Enter publisher name:
freidrich
Enter price:
170
```

```
Book 1
The book details are:
book id: wrt
book title: fountainhead
no of pages: 704
year of publish: 2020
author name: aynrand
publisher: signet
price: 400.0


Book 2
The book details are:
book id: tgh
book title: atlasshrugged
no of pages: 450
year of publish: 1980
author name: marcus
publisher: deepthi
price: 500.0


Book 3
The book details are:
book id: qtwer
book title: zarathustra
no of pages: 200
year of publish: 1856
author name: 1826
publisher: freidrich
price: 170.0


Enter author name to find his book:
aynrand
The book details are:
book id: wrt
book title: fountainhead
no of pages: 704
year of publish: 2020
author name: aynrand
publisher: signet
price: 400.0


The details of most expensive book are:
The book details are:
book id: tgh
book title: atlasshrugged
no of pages: 450
year of publish: 1980
author name: marcus
publisher: deepthi
price: 500.0


no of books published in 2020: 1
```

```
no of books published in 2020: 1


book with least pages:
The book details are:
book id: qtwer
book title: zarathustra
no of pages: 200
year of publish: 1856
author name: 1826
publisher: freidrich
price: 170.0
```