

```
1  /*Develop a Java program to create a class PLAYER with member variables name,
2  matches_played and average. This class has an abstract method cal_average(String,int,int).
3  Derive two classes BATSMAN and BOWLER from PLAYER. Class BATSMAN has a
4  member variable runs_scored. Class BOWLER has a member variable runs_given. Create m
5  BATSMAN objects and n BOWLER objects. Calculate and display the average runs scored
6  by each BATSMAN and average runs given by each BOWLER.*/
7  import java.util.Scanner;
8  class Player{
9      String name;
10     int matches_played,runs;
11     double average;
12     Scanner ss=new Scanner(System.in);
13     void getdata(){
14         System.out.println("Enter the name:");
15         name=ss.nextLine();
16         System.out.println("Enter the number of matches played:");
17         matches_played=ss.nextInt();
18         System.out.println("Enter the number of runs scored:");
19         runs=ss.nextInt();
20     }
21     void cal_average(String name,int matches_played,int runs){
22         this.name=name;
23         this.matches_played=matches_played;
24         this.runs=runs;
25         average=runs/matches_played;
26     }
27 }
28 class BATSMAN extends Player{
29     int runs_scored;
30     void setdata(){
31         runs_scored=runs;
32     }
33     void display(){
34         System.out.println("Name:"+name);
35         System.out.println("Number of Matches played:"+matches_played);
36         System.out.println("Runs:"+runs_scored);
37         System.out.println("Average score:"+average);
38     }
39 }
40 class BOWLER extends Player{
41     int runs_given;
42     void setdata(){
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37         System.out.println("Average score:"+average);
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```

```
heirarchialih.java  multilevelih.java
40 class BOWLER extends Player{
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44     }
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46         System.out.println("Name:"+name);
47         System.out.println("Number of Matches played:"+matches_played);
48         System.out.println("Runs:"+runs_given);
49         System.out.println("Average score:"+average);
50     }
51 }
52 class Playermain{
53     public static void main(String args[]){
54         Scanner ss=new Scanner(System.in);
55         System.out.println("Enter the number of Batsmen:");
56         int m=ss.nextInt();
57         System.out.println("Enter the number of Bowlers:");
58         int n=ss.nextInt();
59         BATSMAN bt[]=new BATSMAN[m];
60         BOWLER bw[]=new BOWLER[n];
61         for(int i=0;i<m;i++){
62             bt[i]=new BATSMAN();
63             System.out.println("-----Enter the details of Batsman No."+(i+1)+"-----");
64             bt[i].getdata();
65         }
66         for(int i=0;i<n;i++){
67             bw[i]=new BOWLER();
68             System.out.println("-----Enter the details of Bowler No."+(i+1)+"-----");
69             bw[i].getdata();
70         }
71         for(int i=0;i<m;i++){
72             System.out.println("Details of Batsman No."+(i+1));
73             bt[i].cal_average(bt[i].name,bt[i].matches_played,bt[i].runs);
74             bt[i].setdata();
75             bt[i].display();
76         }
77         for(int i=0;i<n;i++){
78             System.out.println("Details of Bowler No."+(i+1));
79             bw[i].cal_average(bw[i].name,bw[i].matches_played,bw[i].runs);
80             bw[i].setdata();
81             bw[i].display();
82         }
83     }
84 }
```

```
multilevelih.java
1 class Player{
2     String name;
3     int matches_played;
4     int runs;
5     float average;
6     void setdata(){
7         name=name;
8         matches_played=matches_played;
9         runs=runs;
10        average=average;
11    }
12    void display(){
13        System.out.println("Name:"+name);
14        System.out.println("Number of Matches played:"+matches_played);
15        System.out.println("Runs:"+runs);
16        System.out.println("Average score:"+average);
17    }
18 }
19 class BATSMAN extends Player{
20     String name;
21     int matches_played;
22     int runs;
23     float average;
24     void setdata(){
25         name=name;
26         matches_played=matches_played;
27         runs=runs;
28         average=average;
29     }
30     void display(){
31         System.out.println("Name:"+name);
32         System.out.println("Number of Matches played:"+matches_played);
33         System.out.println("Runs:"+runs);
34         System.out.println("Average score:"+average);
35     }
36 }
37 class BOWLER extends Player{
38     String name;
39     int matches_played;
40     int runs;
41     float average;
42     void setdata(){
43         name=name;
44         matches_played=matches_played;
45         runs=runs;
46         average=average;
47     }
48     void display(){
49         System.out.println("Name:"+name);
50         System.out.println("Number of Matches played:"+matches_played);
51         System.out.println("Runs:"+runs);
52         System.out.println("Average score:"+average);
53     }
54 }
55 class Playermain{
56     public static void main(String args[]){
57         Scanner ss=new Scanner(System.in);
58         System.out.println("Enter the number of Batsmen:");
59         int m=ss.nextInt();
60         System.out.println("Enter the number of Bowlers:");
61         int n=ss.nextInt();
62         BATSMAN bt[]=new BATSMAN[m];
63         BOWLER bw[]=new BOWLER[n];
64         for(int i=0;i<m;i++){
65             bt[i]=new BATSMAN();
66             System.out.println("-----Enter the details of Batsman No."+(i+1)+"-----");
67             bt[i].getdata();
68         }
69         for(int i=0;i<n;i++){
70             bw[i]=new BOWLER();
71             System.out.println("-----Enter the details of Bowler No."+(i+1)+"-----");
72             bw[i].getdata();
73         }
74         for(int i=0;i<m;i++){
75             System.out.println("Details of Batsman No."+(i+1));
76             bt[i].cal_average(bt[i].name,bt[i].matches_played,bt[i].runs);
77             bt[i].setdata();
78             bt[i].display();
79         }
80         for(int i=0;i<n;i++){
81             System.out.println("Details of Bowler No."+(i+1));
82             bw[i].cal_average(bw[i].name,bw[i].matches_played,bw[i].runs);
83             bw[i].setdata();
84             bw[i].display();
85         }
86     }
87 }
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44     }
45     void display(){
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81             bw[i].display();
82         }
83     }
84 }
```

```

16  System.out.println("Enter the number of matches played:");
17  matches_played=ss.nextInt();
18  System.out.println("Enter the number of runs scored:");
19  runs=ss.nextInt();
20  }
21  void cal_average(String name,int matches_played,int runs){
22      this.name=name;
23      this.matches_played=matches_played;
24      this.runs=runs;
25      average=runs/matches_played;
26  }
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28  class BATSMAN extends Player{
29      int runs_scored;
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33      void display(){
34          System.out.println("Name:"+name);
35          System.out.println("Number of Matches played:");
36          System.out.println("Runs:"+runs_scored);
37          System.out.println("Average score:"+average);
38      }
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40  class BOWLER extends Player{
41      int runs_given;
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44      }
45      void display(){
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49          System.out.println("Average score:"+average);
50      }
51  }
52  class Playermain{
53      public static void main(String args[]){
54          Scanner ss=new Scanner(System.in);
55          System.out.println("Enter the number of Batsmen:");
56          int m=ss.nextInt();
57          System.out.println("Enter the number of Bowlers:");

```

Command Prompt

C:\Program Files\Java\bin\basic&gt;javac heirarchialih.java

C:\Program Files\Java\bin\basic&gt;java Playermain

Enter the number of Batsmen:

3

Enter the number of Bowlers:

3

-----Enter the details of Batsman No.1-----

Enter the name:

harshith

Enter the number of matches played:

344

Enter the number of runs scored:

3453

-----Enter the details of Batsman No.2-----

Enter the name:

suprith

Enter the number of matches played:

34

Enter the number of runs scored:

678

-----Enter the details of Batsman No.3-----

Enter the name:

hemanth

Enter the number of matches played:

5

Enter the number of runs scored:

233

-----Enter the details of Bowler No.1-----

Enter the name:



```

16  System.out.println("Enter the number of matches played:");
17  matches_played=ss.nextInt();
18  System.out.println("Enter the number of runs scored:");
19  runs=ss.nextInt();
20  }
21  void cal_average(String name,int matches_played,int runs_scored){
22      this.name=name;
23      this.matches_played=matches_played;
24      this.runs=runs;
25      average=runs/matches_played;
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28  class BATSMAN extends Player{
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40  class BOWLER extends Player{
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50      }
51  }
52  class Playermain{
53      public static void main(String args[]){
54          Scanner ss=new Scanner(System.in);
55          System.out.println("Enter the number of Batsman");
56          int m=ss.nextInt();
57          System.out.println("Enter the number of Bowlers:");

```

Command Prompt

-----Enter the details of Bowler No.1-----

Enter the name:

sudi

Enter the number of matches played:

56

Enter the number of runs scored:

344

-----Enter the details of Bowler No.2-----

Enter the name:

kiran

Enter the number of matches played:

456

Enter the number of runs scored:

4567

-----Enter the details of Bowler No.3-----

Enter the name:

tarun

Enter the number of matches played:

45

Enter the number of runs scored:

89

Details of Batsman No.1

Name:harshith

Number of Matches played:344

Runs:3453

Average score:10.0

Details of Batsman No.2

Name:suprith

Number of Matches played:34

Runs:678

Average score:19.94

```

16  System.out.println("Enter the number of matches played:");
17  matches_played=ss.nextInt();
18  System.out.println("Enter the number of runs scored:");
19  runs=ss.nextInt();
20  }
21  void cal_average(String name,int matches_played,int runs_scored){
22      this.name=name;
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24      this.runs=runs;
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51  }
52  class Playermain{
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54          Scanner ss=new Scanner(System.in);
55          System.out.println("Enter the number of Batsmen:");
56          int m=ss.nextInt();
57          System.out.println("Enter the number of Bowlers:");

```

Command Prompt

```

Name:harshith
Number of Matches played:344
Runs:3453
Average score:10.0
Details of Batsman No.2
Name:suprith
Number of Matches played:34
Runs:678
Average score:19.0
Details of Batsman No.3
Name:hemanth
Number of Matches played:5
Runs:233
Average score:46.0
Details of Bowler No.1
Name:sudi
Number of Matches played:56
Runs:344
Average score:6.0
Details of Bowler No.2
Name:kiran
Number of Matches played:456
Runs:4567
Average score:10.0
Details of Bowler No.3
Name:tarun
Number of Matches played:45
Runs:89
Average score:1.0

```