

CS23333-Object Oriented Programming Using Java-2023

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Status	Finished
Started	Wednesday, 2 October 2024, 1:16 PM
Completed	Wednesday, 2 October 2024, 1:43 PM
Duration	26 mins 36 secs

Question 1

Correct

Marked out of 5.00

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Create interfaces shown below.

```
interface Sports {  
    public void setHomeTeam(String name);  
    public void setVisitingTeam(String name);  
}
```

```
interface Football extends Sports {  
    public void homeTeamScored(int points);  
    public void visitingTeamScored(int points);  
}
```

create a class College that implements the Football interface and provides the necessary functionality to the abstract methods.

sample Input:

Rajalakshmi
Saveetha
22
21

Output:

Rajalakshmi 22 scored
Saveetha 21 scored
Rajalakshmi is the Winner!

For example:

Test	Input	Result
1	Rajalakshmi Saveetha 22 21	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmi is the winner!

Answer: (penalty regime: 0 %)

[Reset answer](#)

```
1 import java.util.Scanner;  
2  
3 // Sports Interface  
4 interface Sports {  
5     public void setHomeTeam(String name);  
6     public void setVisitingTeam(String name);  
7 }  
8  
9 // Football Interface extending Sports  
10 interface Football extends Sports {  
11     public void homeTeamScored(int points);  
12     public void visitingTeamScored(int points);  
13 }  
14  
15 // College class implementing Football interface  
16 class College implements Football {  
17     private String homeTeam;  
18     private String visitingTeam;  
19     private int homeTeamPoints;  
20     private int visitingTeamPoints;  
21  
22     // Implementing setHomeTeam method  
23     @Override  
24     public void setHomeTeam(String name) {  
25         this.homeTeam = name;  
26     }  
27  
28     // Implementing setVisitingTeam method  
29     @Override  
30     public void setVisitingTeam(String name) {  
31         this.visitingTeam = name;  
32     }  
33  
34     // Implementing homeTeamScored method  
35     @Override  
36     public void homeTeamScored(int points) {  
37         this.homeTeamPoints = points;  
38     }  
39  
40     // Implementing visitingTeamScored method
```

```

41 | @Override
42 | public void visitingTeamScored(int points) {
43 |     this.visitingTeamPoints = points;
44 | }
45 |
46 | // Method to display the result
47 | public void displayResult() {
48 |     System.out.println(homeTeam + " " + homeTeamPoints + " scored");
49 |     System.out.println(visitingTeam + " " + visitingTeamPoints + " scored");
50 |     if (homeTeamPoints > visitingTeamPoints) {
51 |         System.out.println(homeTeam + " is the winner!");
52 |     } else if (visitingTeamPoints > homeTeamPoints) {

```

	Test	Input	Expected	Got	
✓	1	Rajalakshmi Saveetha 22 21	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmi is the winner!	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmi is the winner!	✓
✓	2	Anna Balaji 21 21	Anna 21 scored Balaji 21 scored It's a tie match.	Anna 21 scored Balaji 21 scored It's a tie match.	✓
✓	3	SRM VIT 20 21	SRM 20 scored VIT 21 scored VIT is the winner!	SRM 20 scored VIT 21 scored VIT is the winner!	✓

Passed all tests! ✓

Question 2

Correct

Marked out of
5.00

Flag question

RBI issues all national banks to collect interest on all customer loans.

Create an RBI interface with a variable String parentBank="RBI" and abstract method rateOfInterest().

RBI interface has two more methods default and static method.

default void policyNote() {

System.out.println("RBI has a new Policy issued in 2023.");

}

static void regulations(){

System.out.println("RBI has updated new regulations on 2024.");

}

Create two subclasses SBI and Karur which implements the RBI interface.

Provide the necessary code for the abstract method in two sub-classes.

Sample Input/Output:

RBI has a new Policy issued in 2023

RBI has updated new regulations in 2024.

SBI rate of interest: 7.6 per annum.

Karur rate of interest: 7.4 per annum.

For example:

Test	Result
1	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.

Answer: (penalty regime: 0 %)

```

1 | // RBI Interface
2 | interface RBI {
3 |     String parentBank = "RBI"; // Interface variable
4 |
5 |     // Abstract method
6 |     double rateOfInterest();
7 |
8 |     // Default method
9 |     default void policyNote() {
10 |         System.out.println("RBI has updated new regulations in 2024.");
11 |     }
12 |
13 |     // Static method
14 |     static void regulations() {
15 |         System.out.println("RBI has a new Policy issued in 2023");
16 |     }
17 | }
18 |
19 | // SBI Class implementing RBI Interface
20 | class SBI implements RBI {
21 |     @Override
22 |     public double rateOfInterest() {
23 |         return 7.6;

```

```

24     }
25 }
26
27 // Karur Class implementing RBI Interface
28 class Karur implements RBI {
29     @Override
30     public double rateOfInterest() {
31         return 7.4;
32     }
33 }
34
35 // Main Class to execute the program
36 public class Main {
37     public static void main(String[] args) {
38         // Calling static method from RBI interface
39         RBI.regulations();
40
41         // Creating instances of SBI and Karur
42         SBI sbiBank = new SBI();
43         Karur karurBank = new Karur();
44
45         // Calling default method from RBI interface
46         sbiBank.policyNote();
47         //karurBank.policyNote();
48
49         // Printing rate of interest for each bank
50         System.out.println("SBI rate of interest: " + sbiBank.rateOfInterest() + " per annum.");
51         System.out.println("Karur rate of interest: " + karurBank.rateOfInterest() + " per annum.");
52     }
}

```

	Test	Expected	Got	
✓	1	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

Flag question

create an interface Playable with a method play() that takes no arguments and returns void. Create three classes Football, Volleyball, and Basketball that implement the Playable interface and override the play() method to play the respective sports.

```

interface Playable {
    void play();
}

```

```

class Football implements Playable {
    String name;
    public Football(String name){
        this.name=name;
    }
    public void play() {
        System.out.println(name+" is Playing football");
    }
}

```

Similarly, create Volleyball and Basketball classes.

Sample output:

```

Sadhvin is Playing football
Sanjay is Playing volleyball
Sruthi is Playing basketball

```

For example:

Test	Input	Result
1	Sadhvin Sanjay Sruthi	Sadhvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball
2	Vijay Arun Balaji	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2
3 interface Playable {
4     void play();
5 }
6
7 class Football implements Playable {
8     String name;
9     public Football(String name) {
10         this.name = name;
11     }
12     public void play() {

```

```

13         System.out.println(name + " is Playing football");
14     }
15 }
16
17 class Volleyball implements Playable {
18     String name;
19     public Volleyball(String name) {
20         this.name = name;
21     }
22     public void play() {
23         System.out.println(name + " is Playing volleyball");
24     }
25 }
26
27 class Basketball implements Playable {
28     String name;
29     public Basketball(String name) {
30         this.name = name;
31     }
32     public void play() {
33         System.out.println(name + " is Playing basketball");
34     }
35 }
36
37 public class Main {
38     public static void main(String[] args) {
39         Scanner scanner = new Scanner(System.in);
40
41         // Reading names from input dynamically
42         String footballPlayerName = scanner.nextLine();
43         String volleyballPlayerName = scanner.nextLine();
44         String basketballPlayerName = scanner.nextLine();
45
46         // Create players dynamically based on input
47         Football footballPlayer = new Football(footballPlayerName);
48         Volleyball volleyballPlayer = new Volleyball(volleyballPlayerName);
49         Basketball basketballPlayer = new Basketball(basketballPlayerName);
50
51         // Play the respective sports
52         footballPlayer.play();

```

	Test	Input	Expected	Got	
✓	1	Sadhvin Sanjay Sruthi	Sadhvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball	Sadhvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball	✓
✓	2	Vijay Arun Balaji	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball	✓

Passed all tests! ✓

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