CS23333-Object Oriented Programming Using Java-2023

Quiz navigation

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Status	Finished
Started	Saturday, 5 October 2024, 3:40 PM
Completed	Saturday, 5 October 2024, 3:45 PM
Duration	4 mins 36 secs

Question **1**

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 %)

```
interface RBI {
    // Variable declaration
    String parentBank = "RBI";

    // Abstract method
    double rateOfInterest();

    // Default method
    default void policyNote() {
        System.out.println("RBI has a new Policy issued in 2023");
    }

    // Static method
    static void regulations() {
        System.out.println("RBI has updated new regulations in 2024.");
    }
}

// SBI class implementing RBI interface
class SBI implements RBI {
    // Implementing the abstract method
    public double rateOfInterest() {
        return 7.6;
    }
}

// Karur class implementing RBI interface
class Karur implements RBI {
    // Implementing the abstract method
    public double rateOfInterest() {
        return 7.4;
    }
}

// Main class to test the functionality
public class Main {
    public static void main(String[] args) {
        // RBI policies and regulations
        RBI rbi = new SBI();  // Can be any class implementing RBI
        rbi.policyNote();     // Default method
        RBI.regulations();    // Static method

        // SBI bank details
```

```
        SBI sbi = new SBI();
        System.out.println("SBI rate of interest: " + sbi.rateOfInterest() + " per annum.");

        // Karur bank details
        Karur karur = new Karur();
        System.out.println("Karur rate of interest: " + karur.rateOfInterest() + " per ann
    }
}
```

	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 **2**

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 %)

```
import java.util.Scanner;

// Define the Playable interface
interface Playable {
    // Abstract method to play the respective sport
    void play();
}

// Football class implementing Playable interface
class Football implements Playable {
    String name;

    // Constructor
    public Football(String name) {
        this.name = name;
    }

    // Override the play method
    public void play() {
        System.out.println(name + " is Playing football");
    }
}

// Volleyball class implementing Playable interface
class Volleyball implements Playable {
    String name;

    // Constructor
    public Volleyball(String name) {
        this.name = name;
    }
```

```
32
33      // Override the play method
34      public void play() {
35          System.out.println(name + " is Playing volleyball");
36      }
37  }
38
39  // Basketball class implementing Playable interface
40  class Basketball implements Playable {
41      String name;
42
43      // Constructor
44      public Basketball(String name) {
45          this.name = name;
46      }
47
48      // Override the play method
49      public void play() {
50          System.out.println(name + " is Playing basketball");
51      }
52  }
53
54  // Main class to test the functionality
55  public class Main {
56      public static void main(String[] args) {
57          Scanner scanner = new Scanner(System.in);
58  // Input for Football player
59
60          String footballPlayerName = scanner.nextLine();
61          Football footballPlayer = new Football(footballPlayerName);
62
63          // Input for Volleyball player
64
65          String volleyballPlayerName = scanner.nextLine();
66          Volleyball volleyballPlayer = new Volleyball(volleyballPlayerName);
67
68          // Input for Basketball player
69
70          String basketballPlayerName = scanner.nextLine();
71          Basketball basketballPlayer = new Basketball(basketballPlayerName);
72
73          // Call the play method for each player
74          footballPlayer.play();
75          volleyballPlayer.play();
76          basketballPlayer.play();
77
78          scanner.close();
79      }
80  }
81
```

	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!

Question **3**

Correct

Marked out of 5.00

Flag question

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	Rajalakshmi 22 scored

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

Answer: (penalty regime: 0 %)

Reset answer

```java
import java.util.Scanner;

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

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

class College implements Football {
    private String homeTeam;
    private String visitingTeam;
    private int homeTeamPoints = 0;
    private int visitingTeamPoints = 0;

    public void setHomeTeam(String name) {
        this.homeTeam = name;
    }

    public void setVisitingTeam(String name) {
        this.visitingTeam = name;
    }

    public void homeTeamScored(int points) {
        homeTeamPoints += points;
        System.out.println(homeTeam + " " + points + " scored");
    }

    public void visitingTeamScored(int points) {
        visitingTeamPoints += points;
        System.out.println(visitingTeam + " " + points + " scored");
    }

    public void winningTeam() {
        if (homeTeamPoints > visitingTeamPoints) {
            System.out.println(homeTeam + " is the winner!");
        } else if (homeTeamPoints < visitingTeamPoints) {
            System.out.println(visitingTeam + " is the winner!");
        } else {
            System.out.println("It's a tie match.");
        }
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // Get home team name
        String hname = sc.nextLine();

        // Get visiting team name
        String vteam = sc.nextLine();

        // Create College object
        College match = new College();
        match.setHomeTeam(hname);
        match.setVisitingTeam(vteam);

        // Get points scored by home team
        int htpoints = sc.nextInt();
        match.homeTeamScored(htpoints);

        // Get points scored by visiting team
        int vtpoints = sc.nextInt();
        match.visitingTeamScored(vtpoints);

        // Determine and print the winning team
        match.winningTeam();

        sc.close();
    }
}
```

	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	Anna 21 scored	Anna 21 scored

	Test	Input	Expected	Got	
		Balaji 21 21	Balaji 21 scored It's a tie match.	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!

Finish review

◄ Lab-07-MCQ

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Generate series and find Nth element ►