

CT3: CSE 203 - Object-Oriented Programming I: Java (Sec D)

Time: 30 min

Mark: 20

Name:

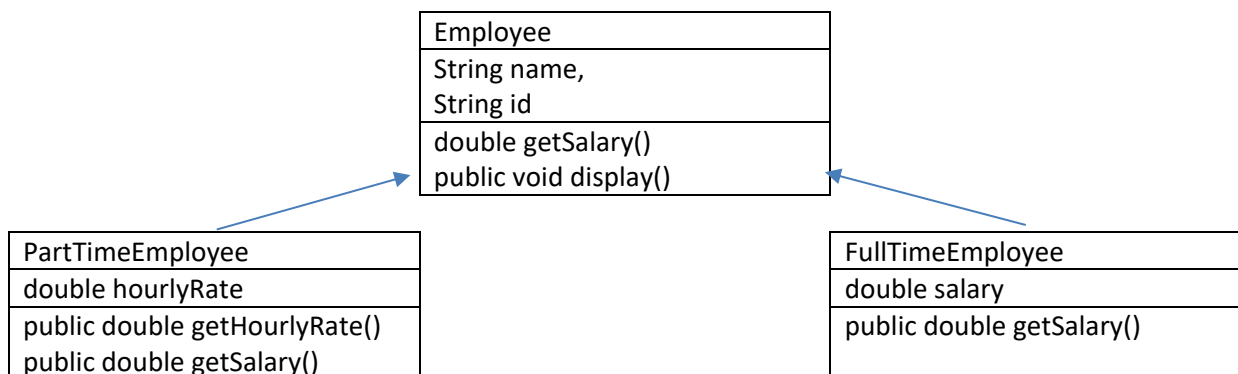
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Question 1: Given the class below create a subclass named Motorbike. Inside the Motorbike class do the following. [12]

- Add an additional attribute **style** of String type.
- Create a constructor and pass parameter for **model**, **enginePower**, **style** and **speed**. Initialize the attributes in proper way.
- Override the **accelerate(double rate)** method and inside the method increase the **speed** by double of the **rate** parameter.

```
public class Vehicle {  
    String model;  
    double enginePower;  
    double speed;  
    public Vehicle(String model, double enginePower) {  
        this.model = model;  
        this.enginePower = enginePower;  
    }  
  
    public void run() {  
        System.out.println("Running at speed: "+ speed);  
    }  
  
    public void accelerate(double rate) {  
        speed += rate;  
    }  
}
```

Question 2: Assume the code of the following 3 classes, **Employee**, **PartTimeEmployee** and **FullTimeEmployee** are available. Here **Employee** is the parent class and the other two are subclass. Now carefully observe the code below: Line#8 and 10 are showing errors. Why are those lines showing error? How can you fix those errors? [6]



```

1 package ct;
2 public class TestEmployee {
3
4     public static void main(String[] args) {
5         Employee emp= new PartTimeEmployee();
6         emp.name = "Haider";
7         emp.id = "111";
8         emp.hourlyRate = 100;
9         System.out.println(emp.getSalary());
10        System.out.println(emp.getHourlyRate());
11    }
12 }
13

```

Question 3: Which of the following are the correct overridden methods of “void test()” method? [2]

1. void test()
2. protected void test()
3. public void test()
4. All of the above

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Question 1: Given the **Employee** class below, create a subclass named **PartTimeEmployee**. In the **PartTimeEmployee** class do the following. [12]

- add an additional attribute named **hourlyRate**.
- Create a constructor and pass parameter for **name**, **id** and **hourlyRate**. Initialize the attributes in proper way.
- Override the **getSalary()** method – return the salary assuming the employee has worked 100 hours per month.

```
package ct3;

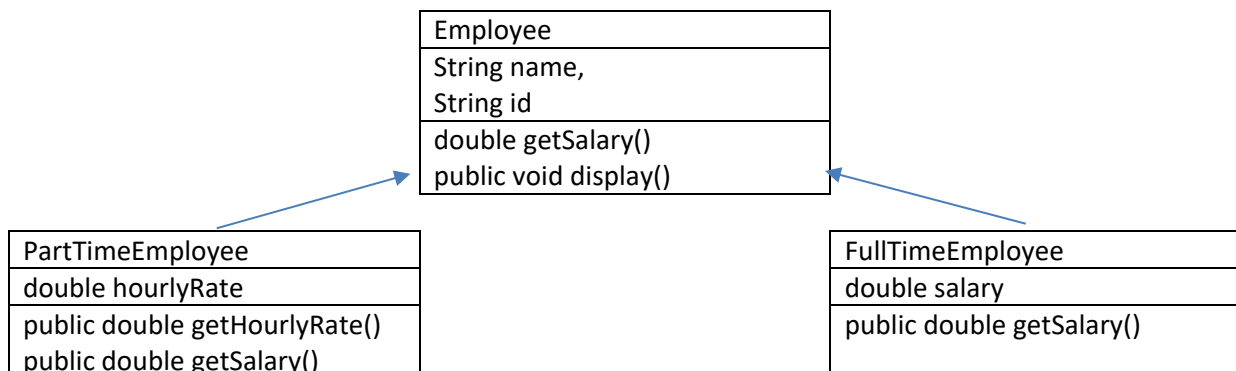
public class Employee {
    String name, id;
    double salary;

    public Employee(String name, String id) {
        this.name = name;
        this.id = id;
    }

    public double getSalary() {
        return salary;
    }

    public void display() {
        System.out.println(name+":"+id);
    }
}
```

Question 2: Assume the code of the following 3 classes, **Employee**, **PartTimeEmployee** and **FullTimeEmployee** are available. Here **Employee** is the parent class and the other two are subclass. Now carefully observe the code below: Line#8 and 10 are showing errors. Why are those lines showing error? How can you fix those errors? [6]



```
1 package ct;
2 public class TestEmployee {
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4     public static void main(String[] args) {
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8         emp.hourlyRate = 100;
9         System.out.println(emp.getSalary());
10        System.out.println(emp.getHourlyRate());
11    }
12 }
13
```

Question 3: Write the headers of 2 overloaded methods where the method name is same as your last name. [2]