**29/7/24 CLASS WORK**

**INHERITANCE**

1. write a java program that craeta class hierarchy for emp of a company the base class should be employee

with subclasses manager developer and

programmer each subclass should have properties such as name address salary and job title

with implement method for calculating code and generating performance of a report

**CODE:**

```java
class Employee {
    String name;
    String address;
    double salary;
    String jobTitle;


    Employee(String name, String address, double salary, String jobTitle) {
        this.name = name;
        this.address = address;
        this.salary = salary;
        this.jobTitle = jobTitle;
    }


    void displayDetails() {
        System.out.println("Name: " + name);
        System.out.println("Address: " + address);
        System.out.println("Salary: $" + salary);
        System.out.println("Job Title: " + jobTitle);
        System.out.println("Bonus: $" + calculateBonus());
        System.out.println();
    }
```

```java
  double calculateBonus() {

    // Basic bonus calculation

    return salary * 0.10;

  }

}


class Manager extends Employee {

  Manager(String name, String address, double salary) {

    super(name, address, salary, "Manager");

  }


  @Override

  double calculateBonus() {

    // Managers get a higher bonus

    return salary * 0.20;

  }

}

class Developer extends Employee {

  Developer(String name, String address, double salary) {

    super(name, address, salary, "Developer");

  }


  @Override

  double calculateBonus() {

    return salary * 0.15;

  }

}

class Programmer extends Employee {

  Programmer(String name, String address, double salary) {

    super(name, address, salary, "Programmer");

  }
```

```java
        @Override
        double calculateBonus() {
            return salary * 0.12;
        }
    }
    public class Main {
        public static void main(String[] args) {
            Employee manager = new Manager("dharu", "123 Main St", 90000);
            Employee developer = new Developer("nandhu", "456 knagar", 80000);
            Employee programmer = new Programmer("riya", "789 Oak st", 70000);


            manager.displayDetails();
            developer.displayDetails();
            programmer.displayDetails();
        }
    }
```

**OUTPUT:**

```
java -cp /tmp/MGealctclj/Main
Name: dharu
Address: 123 Main St
Salary: $90000.0
Job Title: Manager
Bonus: $18000.0

Name: nandhu
Address: 456 knagar
Salary: $80000.0
Job Title: Developer
Bonus: $12000.0

Name: riya
Address: 789 Oak st
Salary: $70000.0
Job Title: Programmer
Bonus: $8400.0


=== Code Execution Successful ===
```

**EXCEPTION HANDLING**

2. written a java program to create method that take on intergers as parameter throws exception if the number is Odd

**CODE:**

import java.util.Scanner;

class OddNumberException extends Exception {

  public OddNumberException(String message) {

    super(message);

  }

```java
}
public class Main {

    public static void checkEvenNumber(int number) throws OddNumberException {

        if (number % 2 != 0) {

            throw new OddNumberException("The number is odd: " + number);

        } else {

            System.out.println("The number is even: " + number);

        }

    }

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter an integer: ");

        int number = scanner.nextInt();

        try {

            checkEvenNumber(number);

        } catch (OddNumberException e) {

            System.out.println("Exception: " + e.getMessage());

        }

        scanner.close();

    }

}
```

**OUTPUT:**

## Output

```
java -cp /tmp/TLMjs3OUum/Main
Enter an integer: 34
The number is even: 34

=== Code Execution Successful ===
```

**CODE:**

3. write a java create method that string as input throws an exception does not contain vowel

**CODE:**

```java
public class Main {
    public static void checkVowel(String input) throws Exception {
        if (!input.matches(".*[AEIOUaeiou].*")) {
            throw new Exception("The string does not contain a vowel: " + input);
        } else {
            System.out.println("The string contains a vowel: " + input);
        }
    }

    public static void main(String[] args) {
```

```java
        try {

            checkVowel("DHARU");

            checkVowel("MOHAN RANI");

        } catch (Exception e) {

            System.err.println(e.getMessage());

        }

    }

}
```

**OUTPUT:**

## Output

```
java -cp /tmp/IMDJhzJwct/Main
The string contains a vowel: DHARU
The string contains a vowel: MOHAN RANI


=== Code Execution Successful ===
```