Lab Assignment1_Aditi_Mehre_KH

1. **Check Positive Number:**

```
public class CheckPositive {
    public static void main(String[] args) {
        int number = 5;         if (number > 0) {
            System.out.println("Positive");
        } else {
            System.out.println("Not Positive");
        }
    }
}
```

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2. **Check Negative Number:**

```
public class CheckNegative {
    public static void main(String[] args) {
        int number = -3; // predefined number
        if (number < 0) {
            System.out.println("Negative");
        } else {
            System.out.println("Not Negative");
        }
    }
}
```

Check Odd or Even Number:

- **Flowchart:** Start -> Input Number -> Is Number % 2 == 0? -> Yes -> Print "Even" -> End; No -> Print "Odd" -> End.
- **Java Program:**

```
public class CheckOddEven {
    public static void main(String[] args) {
        int number = 7; // predefined number
```

```
        if (number % 2 == 0) {
            System.out.println("Even");
        } else {
            System.out.println("Odd");
        }
    }
}
```

Display Good Morning Message Based on Time:

- **Flowchart:** Start -> Input Time -> Is Time >= 5 AM and <= 12 PM? -> Yes -> Print "Good Morning" -> End; No -> Print "Not Morning" -> End.
- **Java Program:**

```
public class GoodMorning {
    public static void main(String[] args) {
        int time = 9; // predefined time in hours
        if (time >= 5 && time <= 12) {
            System.out.println("Good Morning");
        } else {
            System.out.println("Not Morning");
        }
    }
}
```

Print Area of a Square:

- **Flowchart:** Start -> Input Side -> Calculate Area = Side * Side -> Print Area -> End.
- **Java Program:**

```
public class AreaSquare {
```

```
    public static void main(String[] args) {
        int side = 4; // predefined side length
        int area = side * side;
        System.out.println("Area of Square: " + area);
    }
}
```

Print Area of a Rectangle:

- **Flowchart:** Start -> Input Length and Width -> Calculate Area = Length * Width -> Print Area -> End.
- **Java Program:**

```
public class AreaRectangle {
    public static void main(String[] args) {
        int length = 5; // predefined length
        int width = 3;  // predefined width
        int area = length * width;
        System.out.println("Area of Rectangle: " + area);
    }
}
```

Find the Largest of Three Numbers:

- **Flowchart:** Start -> Input Three Numbers -> Compare Numbers -> Print Largest -> End.
- **Java Program:**

```
public class LargestNumber {
    public static void main(String[] args) {
        int num1 = 8, num2 = 12, num3 = 5; // predefined numbers
```

```
        int largest;
        if (num1 >= num2 && num1 >= num3) {
            largest = num1;
        } else if (num2 >= num1 && num2 >= num3) {
            largest = num2;
        } else {
            largest = num3;
        }
        System.out.println("Largest Number: " + largest);
    }
}
```

Food for Thought:

- History of Java: Java was created by Sun Microsystems in 1995. It was made to be platform-independent and easy to use.
- How Java is Useful: Java solves problems like portability and ease of use. It's used in web apps, mobile apps, and more.
- Role of JVM: JVM lets Java run on any device because it translates Java bytecode to machine code.
- JRE: JRE lets you run Java programs by providing necessary libraries and JVM.
- JDK vs JRE vs JVM: JDK is for development, JRE is for running apps, JVM is the engine that runs the Java bytecode.
- Memory Areas in JVM: JVM has Heap for objects, Stack for method calls, and Method Area for class data.
- Primitive Data Types: Java has 8 primitives: byte, short, int, long, float, double, char, and boolean. They are different from reference types like objects.
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