CDAC Mumbai
Lab Assignment: Flowchart and Java Programming

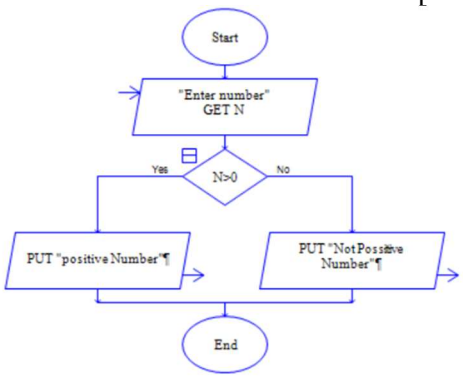
Instructions:

1. For each of the following questions, first **create a flowchart** to outline the logic.
2. After completing the flowchart, **write a Java program** to implement the logic based on your flowchart.
3. Ensure your code follows basic Java syntax and logic.
4. You can explore user input (NOT MANDATORY)

Flowchart + Java Program Questions

1. **Check Positive Number:**

   - **Task**: Create a flowchart to check whether a number is positive.



   - **Next Step**: Write a Java program that checks if a predefined number is positive using an if-else statement and prints the appropriate message.
     Program code:

```
import java.util.*;

public class Positivenumber{

        public static void main(String[] args){

                System.out.println("Enter a number: ");

                Scanner sc = new Scanner(System.in);

                int n = sc.nextInt();

                if(n>0){

                        System.out.println("The given number is positive");

                        }
```

```
            else{
                System.out.println("the given number is negative");
                }
        }
}
```

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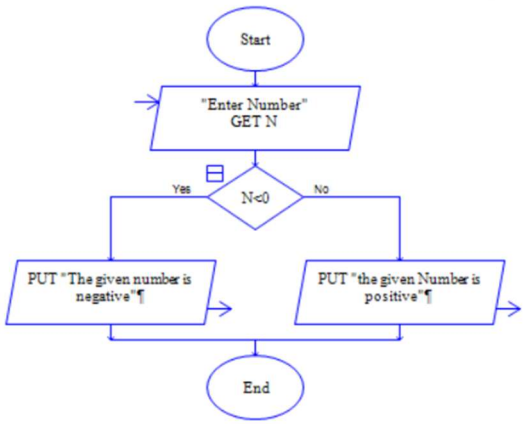
2. **Check Negative Number:**

- **Task**: Create a flowchart to check whether a number is negative.



- **Next Step**: Write a Java program that checks if a predefined number is negative using an if-else statement and displays the result.

Program code:

```
import java.util.*;
public class Positivenumber{
    public static void main(String[] args){
            System.out.println("Enter a number: ");
            Scanner sc = new Scanner(System.in);
            int n = sc.nextInt();
            if(n<0){
                System.out.println("The given number is negative");
                }
            else{
                System.out.println("the given number is positive");
                }
     }
    }
```

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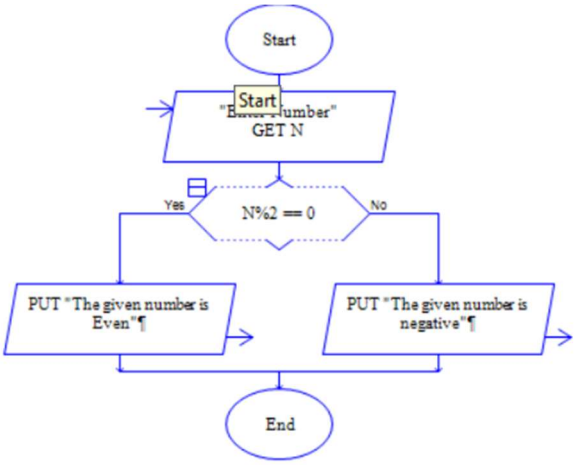
3. **Check Odd or Even Number:**

- **Task**: Create a flowchart to determine whether a number is odd or even.



- **Next Step**: Write a Java program that checks if a predefined number is odd or even. Use an if-else statement and the modulus operator (%) to determine whether the number is divisible by 2 or not.

Program code:

```
import java.util.*;
public class EvenOdd{
    public static void main(String[] args){
        System.out.println("Enter a number: ");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        if(n%2==0){
                System.out.println("The given number is Even");
                }
        else{
                System.out.println("the given number is Odd");
                }
    }
}
```

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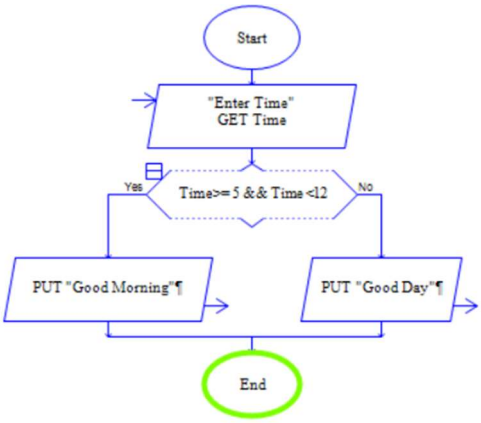
4. **Display Good Morning Message Based on Time:**

- **Task**: Create a flowchart to display a "Good Morning" message based on a given time.



- **Next Step**: Write a Java program that displays a "Good Morning" message if the predefined time is between 5 AM and 12 PM. Use an if statement to implement the logic.

  Program code:

```
import java.util.*;
public class Goodmorning{
        public static void main(String[] args){
                System.out.println("Enter a time in hours: ");
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
                if(n>=5 && n<12){
                        System.out.println("Good Morning");
                }
                else{
                        System.out.println("Good Day");
                }
        }
}
```

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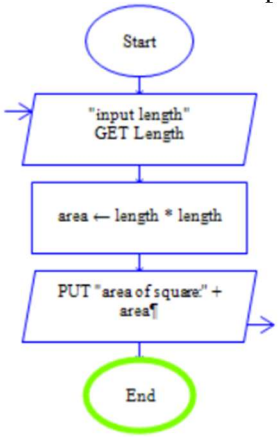
5. **Print Area of a Square:**

- **Task**: Create a flowchart to calculate and print the area of a square.



- **Next Step**: Write a Java program that calculates the area of a square using the formula area = side * side. Use a predefined side length.

Program code:

```
import java.util.Scanner;
public class SquareArea {
      public static void main(String[] args) {
          System.out.println("Enter the length of the side of the square:");
          Scanner sc = new Scanner(System.in);

          int side = sc.nextInt();
          int area = side * side;

          System.out.println("The area of the square with side length " + side + "
      is: " + area);
      }
}
```

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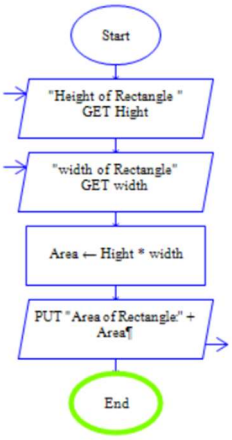
6. **Print Area of a Rectangle:**

- **Task**: Create a flowchart to calculate and print the area of a rectangle.



- **Next Step**: Write a Java program that calculates the area of a rectangle using the formula area = length * width. Use predefined values for length and width.
- **Program code:**

```
import java.util.*;

public class Areaofrectangle{
   public static void main(String[] args) {
        Scanner Sc = new Scanner(System.in);
        System.out.println("Enter the Height of Rectangle :");
        int Height = Sc.nextInt();
```

```
        System.out.println("Enter the Width of Rectangle :");
        int Width = Sc.nextInt();

      int area = Height * Width;

      System.out.println("The area of Rectangle is: " + area);
    }
}
```

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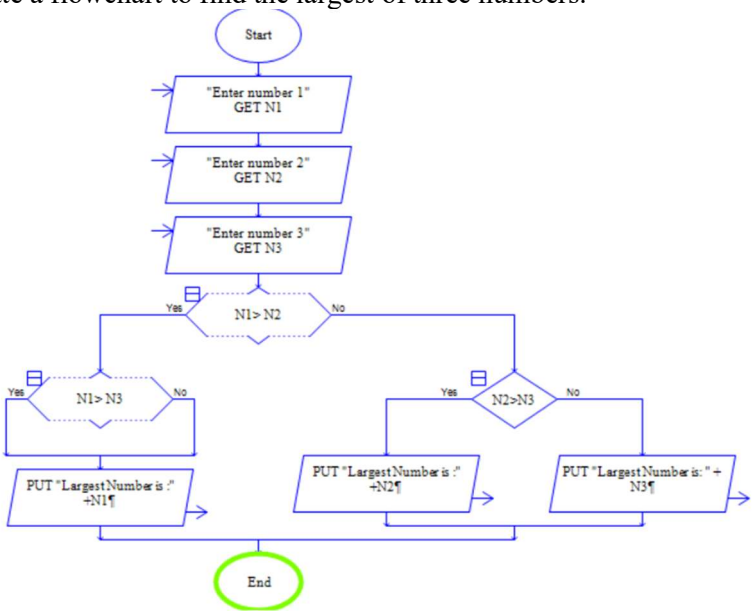
7. **Find the Largest of Three Numbers:**
   - **Task**: Create a flowchart to find the largest of three numbers.



   - **Next Step**: Write a Java program that finds and prints the largest of three predefined numbers using if-else statements.
   - **Program code:**

```
import java.util.*;
public class Positivenumber{
    public static void main(String[] args){
        System.out.println("Enter a number: ");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        if(n>0){
                System.out.println("The given number is positive");
                }
        else{
                System.out.println("the given number is negative");
                }
    }
}
```