# Lab-04

Consider any code and draw its CFG by defining its paths and checking the whole code by white box testing.

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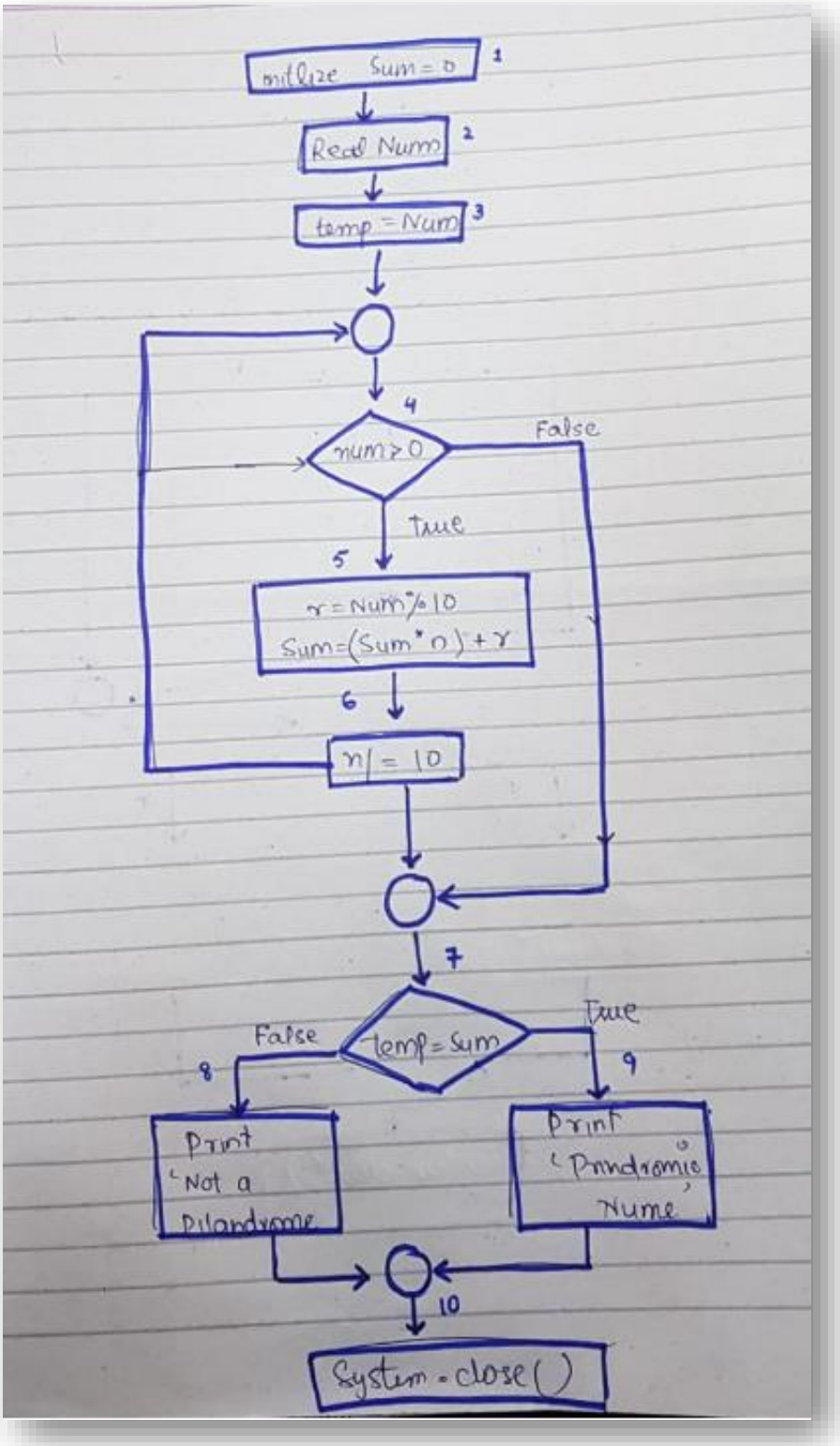
Code to check whether a number is palindrome or not?

## Code:

```
import java.util.Scanner;

class PalindromeExample {
    public static void main(String args[]) {
        int r, sum = 0, temp;

        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n = scanner.nextInt();

        temp = n;
        while (n > 0) {
            r = n % 10;  //getting remainder
            sum = (sum * 10) + r;
            n = n / 10;
        }

        if (temp == sum)
            System.out.println("Palindrome number ");
        else
            System.out.println("Not palindrome");

        scanner.close();
    }
}
```

## Control Flow Graph:



## Paths:

**Path 1:** 1 2 3 4(T) 5 6 7(T) 9 10

**Path 2:** 1 2 3 4(T) 5 6 7(F) 8 10

**Path 3:** 1 2 3 4(F) 7(T) 9 10

**Path 4:** 1 2 3 4(F) 7(F) 8 10

## Test cases

| Test ID | Test Case Description | Input Data | Actual | Expected | Verdict |
|---|---|---|---|---|---|
| 1 | Palindrome number | 12321 | Palindrome number | Palindrome number | Pass |
| 2 | Non-palindrome number | 12345 | Not palindrome | Not palindrome | Pass |
| 3 | Single-digit palindrome | 7 | Palindrome number | Palindrome number | Pass |
| 4 | Negative palindrome number | -121 | Palindrome number | Not palindrome | Fail |
| 5 | Large palindrome number | 1234560654321 | Palindrome number | Palindrome number | Pass |
| 6 | Zero | 0 | Palindrome number | Palindrome number | Pass |