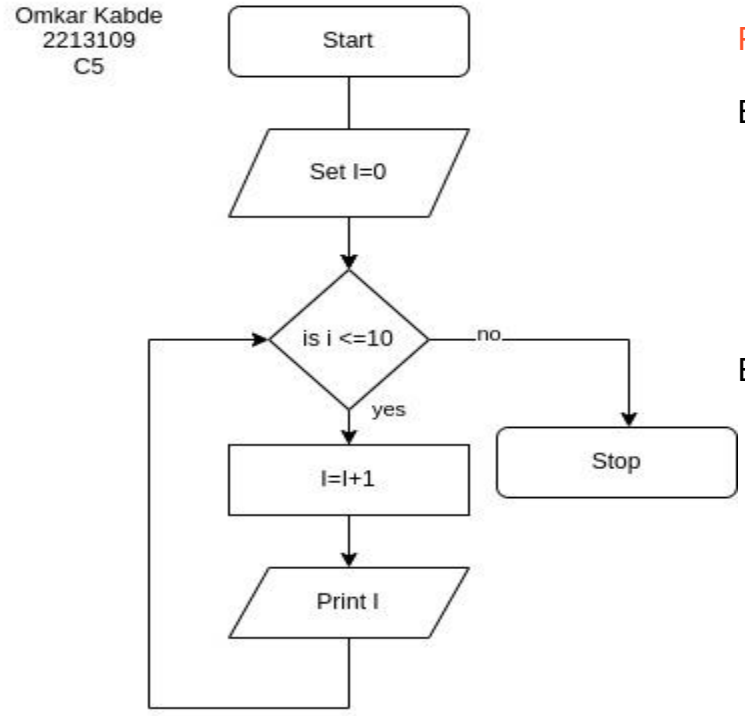
Flowcharts and Algorithms
Date – 25-10-2022

1. Draw a flowchart and write a pseudocode to print the first 10 natural numbers.

Flowchart:

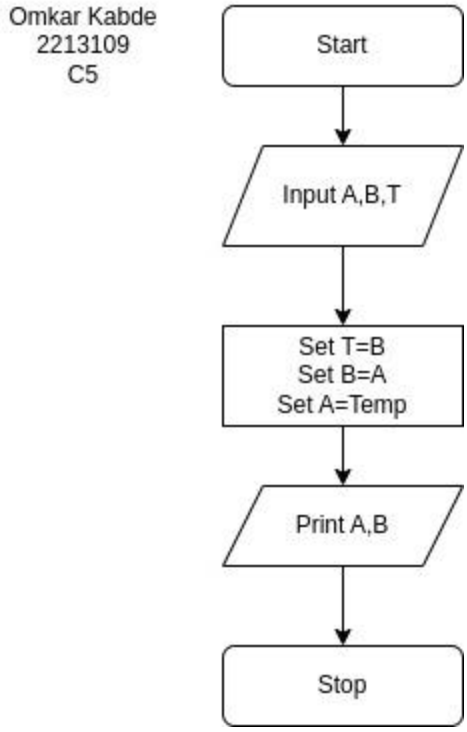


Pseudocode:

```
Begin
        Set I=0
        While(I<=10)
                I=I+1
                Print I
        Else
                End While
End
```

2.Write an algorithm to exchange two values.

Flowchart:

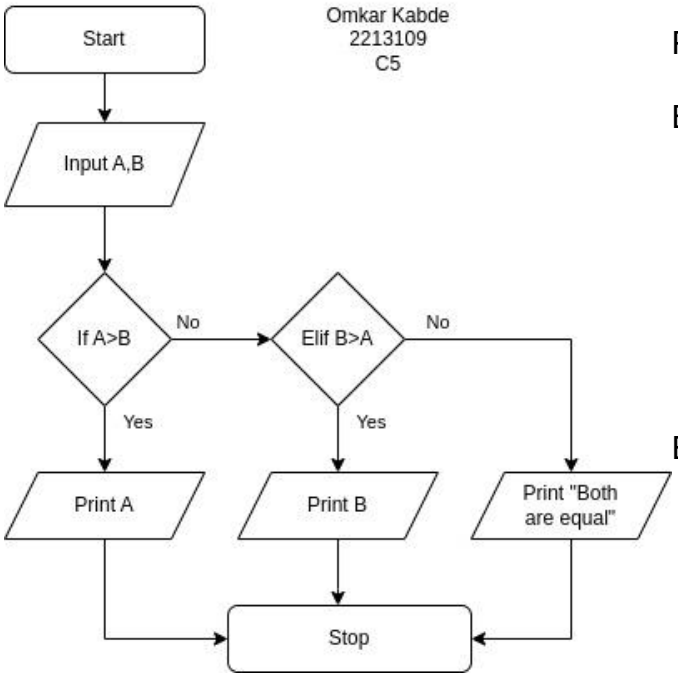


Pseudocode:

```
Begin
        Input A,B,T
        Set T=B
        Set B=A
        Set A=T
        Print A,B
End
```

3. Find largest of two numbers

Flowchart:

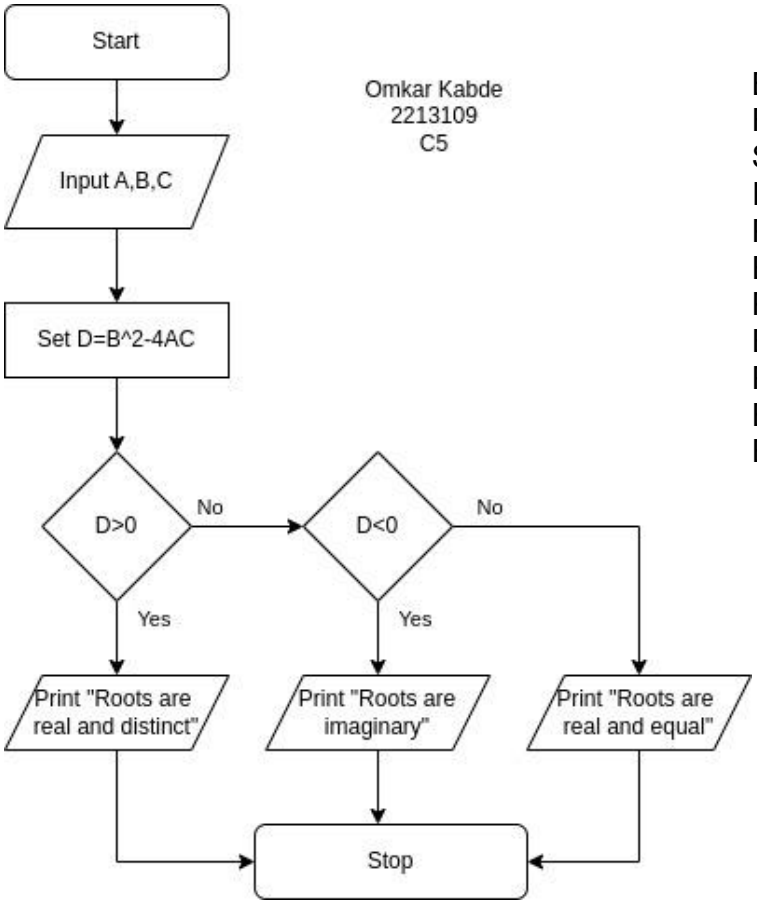


Pseudocode:

```
Begin
        Read A,B
        If(A>B)
                Print A
        Elif(A<B)
                Print B
        Else
                Print “Both are equal”
        End If
End
```

4.Find nature of roots of an quadratric equation

Flowchart:

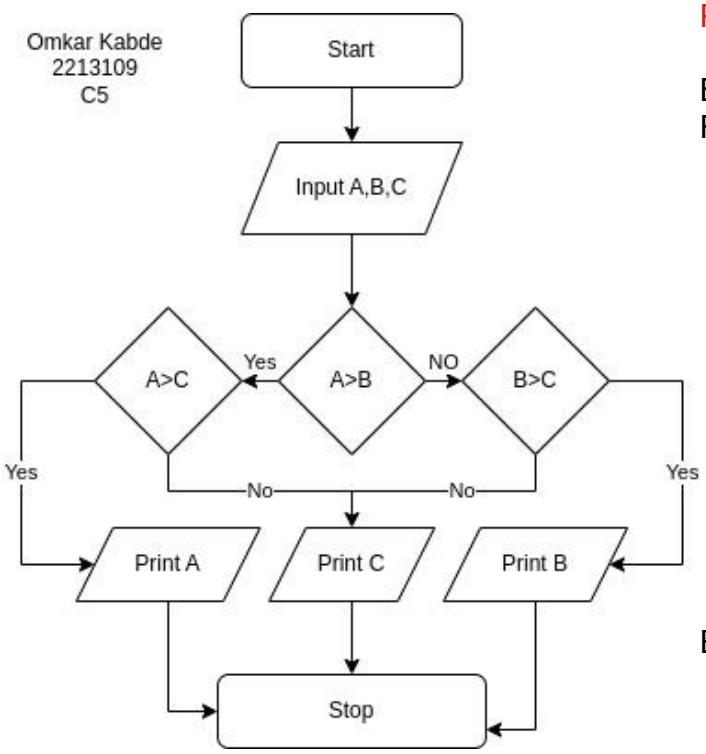


Pseudocode:

```
Begin
Read A,B,C
Set D=B^2-4AC
If(D>0)
Print “Roots are real and distinct”
Elif(D<0)
Print “Roots are imaginary”
Else
Print “Roots are real and equal”
End If
End
```

5. Find Largest of 3 numbers

Flowchart:

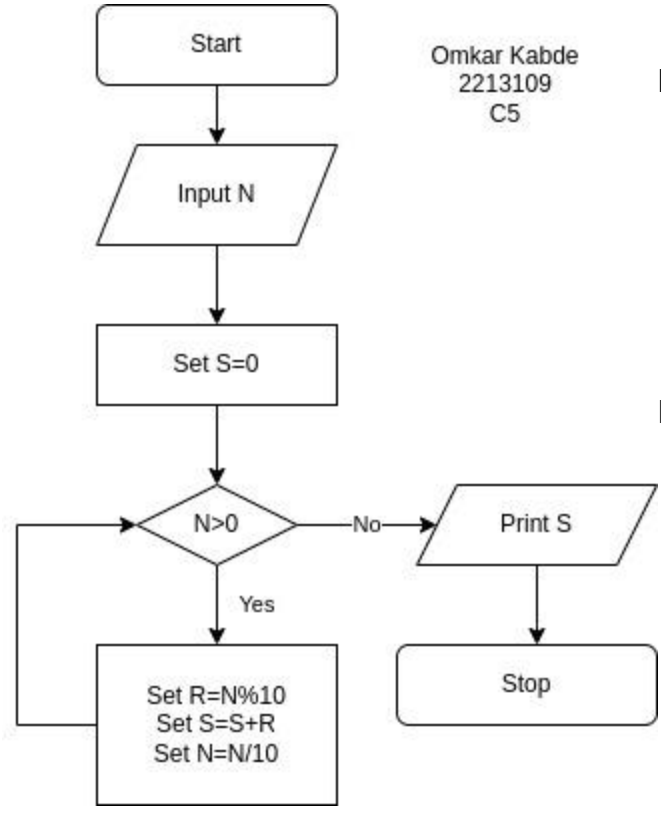


Pseudocode:

```
Begin
Read A,B,C
        If(A>B)
                If(A>C)
                        Print A
                Else
                        Print C
                End If
        Else
                If(B>C)
                        Print B
                Else
                        Print C
                End If
        End If
End
```

6. Find Sum of digits of a number

Flowchart:

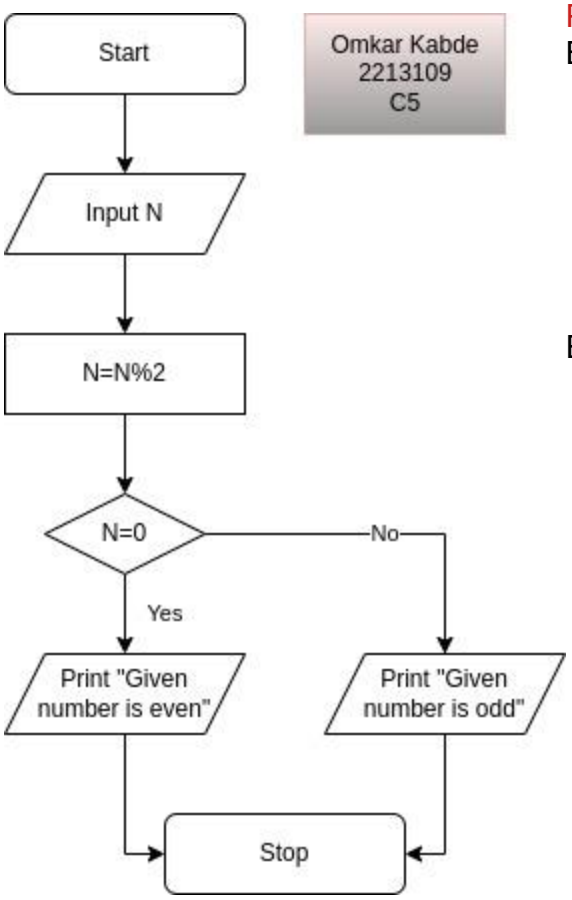


Pseudocode:

```
Begin
        Read N
        Set S=0
        While(N>0)
                Set R=N%10
                Set S=S+R
                Set N=N/10
        End While
        Print S
End
```

7.Test whether given number is even or odd

Flowchart:

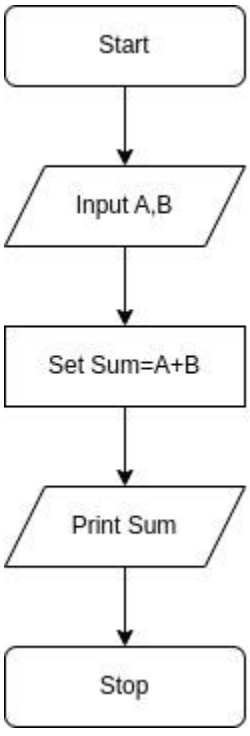


Pseudocode:

```
Begin
        Read N
        N=N%2
        If(N=0)
                Print “Given number is even”
        Else
                Print “Given number is odd”
        End If
End
```

8. Add two numbers

Flowchart:

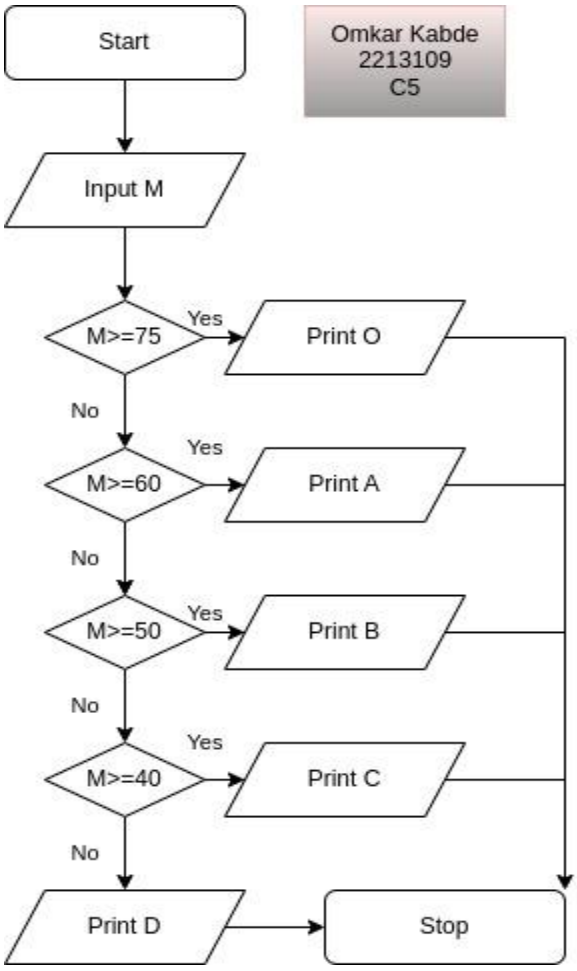


Pseudocode:

```
Begin
        Read A,B
        Set Sum = A+B
        Print Sum
End
```

9.Print Letter Grades based on marks

Flowchart:

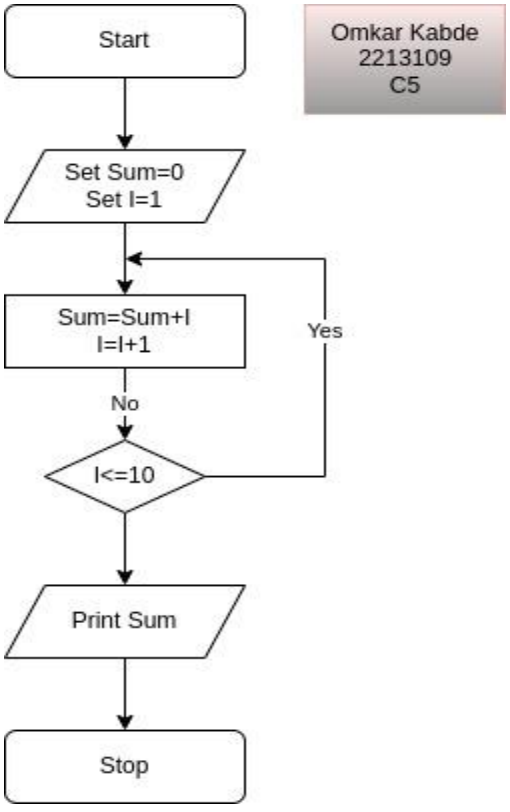


Pseudocode:

```
Begin
        Input M
        If(M>=75)
                Print O
        Elif(M>=60)
                Print A
        Elif(M>=50)
                Print B
        Elif(M>=40)
                Print C
        Else
                Print D
        End If
End
```

10. Find Sum of first 10 natural numbers

Flowchart:

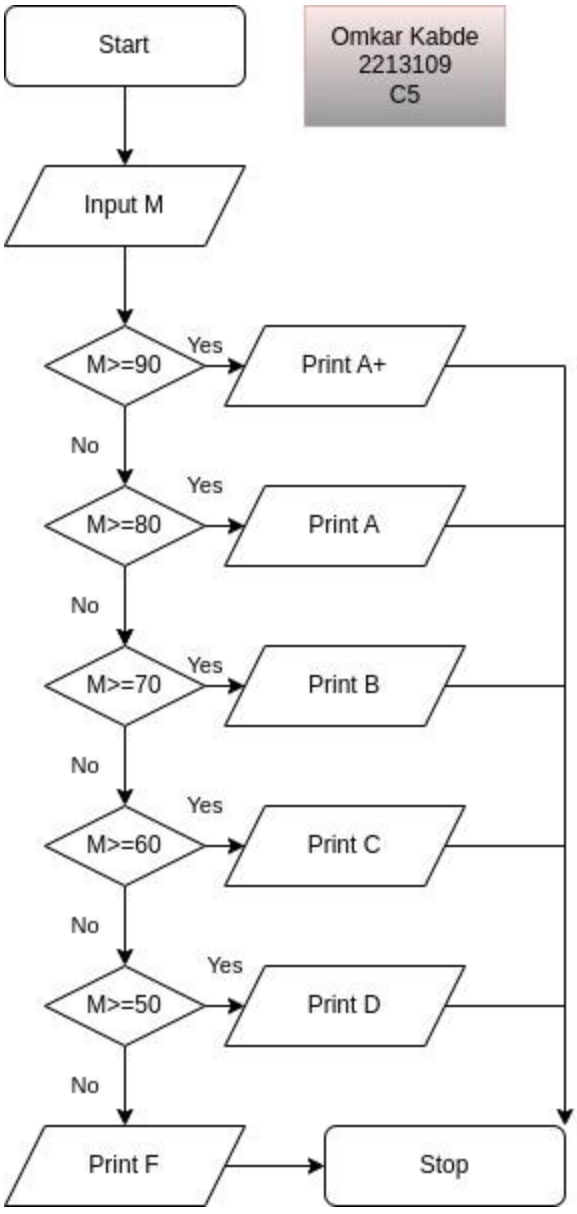


Pseudocode:

```
Begin
    Set Sum=0
    Set I=1
    While(I<=10)
            Sum=Sum+I
            I=I+1
    End While
    Print Sum
End
```

11. Assign Letter Grades based on marks

Flowchart:

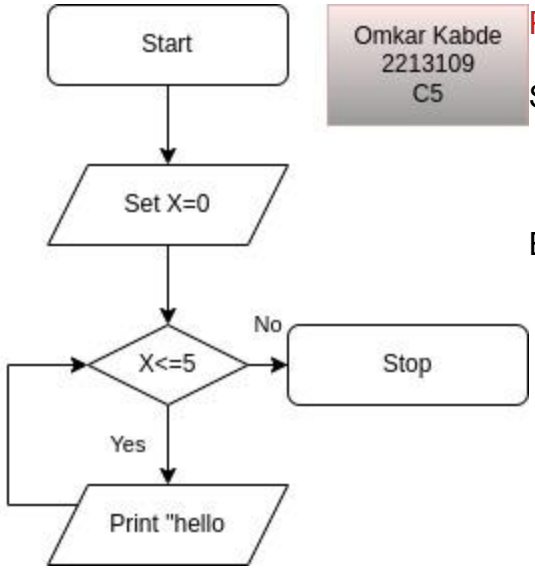


Pseudocode:

```
Begin
        Read M
        If(M>=90)
                Print A+
        Elif(M>=80)
                Print A
        Elif(M>=70)
                Print B
        Elif(M>=60)
                Print C
        Elif(M>=50)
                Print D
        Else
                Print F
        End If
End
```

12. Print Hello 5 times

Flowchart:

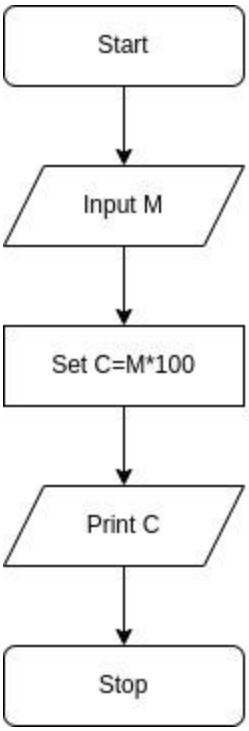


Pseudocode :

```
Set X=0
   While(X<=5)
            Print “hello”
   End While
End
```

13.Convert Meter to Centimeter

Flowchart:



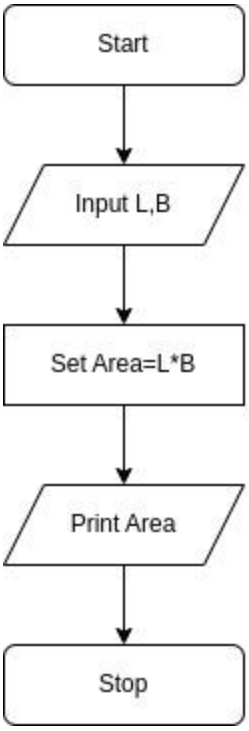
Omkar Kabde
2213109
C5

Pseudocode:

```
Begin
        Read M
        Set C=M*100
        Print C
End
```

14.Find Area of rectangle

Flowchart:



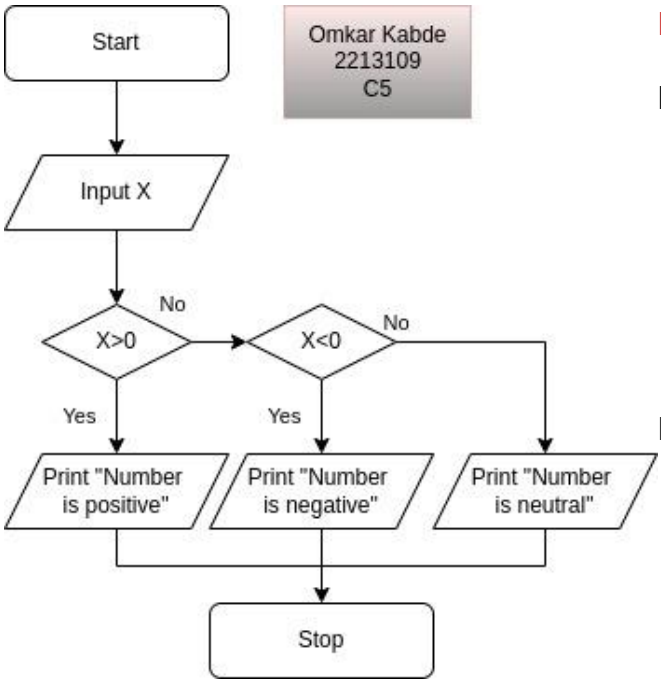
Omkar Kabde
2213109
C5

Pseudocode:

```
Begin
        Read L,B
        Set Area=L*B
        Print Area
End
```

15. Find out whether given number is positive or negative

Flowchart:

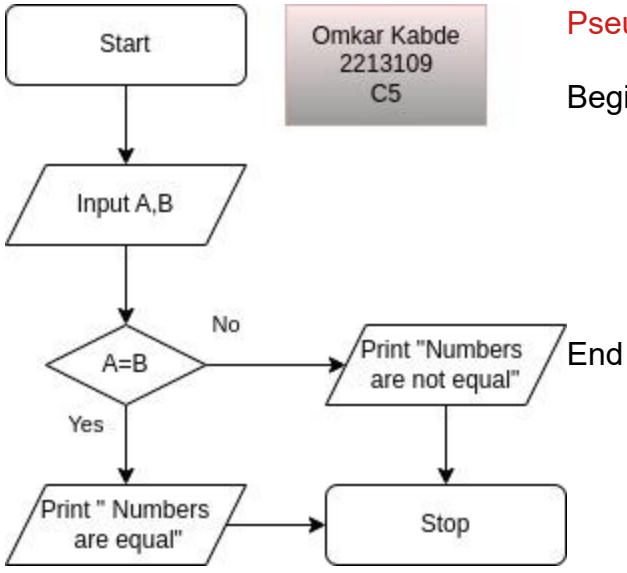


Pseudocode:

```
Begin
        Read X
        If(X>0)
                Print “Number is positive”
        Elif(X<0)
                Print “ Number is negative”
        Else
                Print “ Number is neutral”
        End If
End
```

16.Test Equality of two numbers

Flowchart:

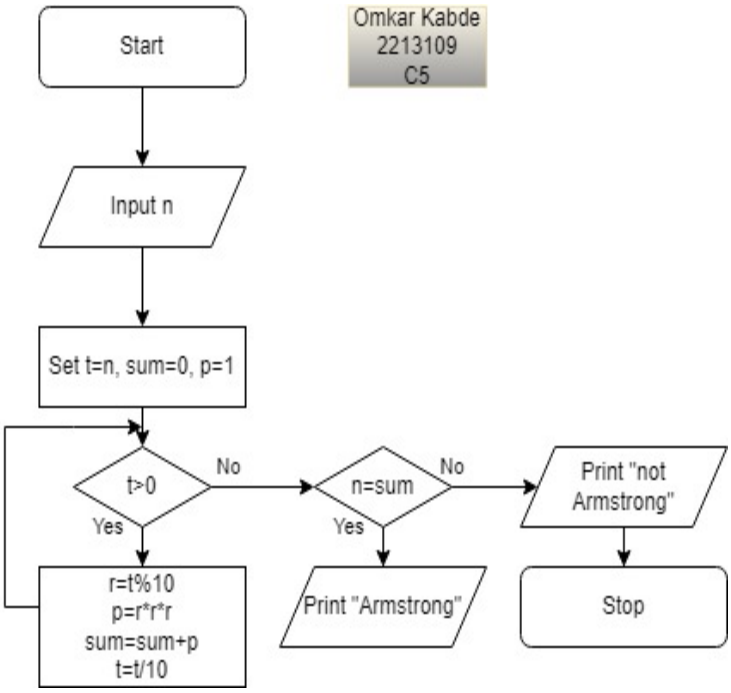


Pseudocode:

```
Begin
        Read A,B
        If(A=B)
                Print “Numbers are equal”
        Else
                Print “ Numbers are not equal”
        End If
End
```

17.Test whether the number is an Armstrong number

Flowchart:



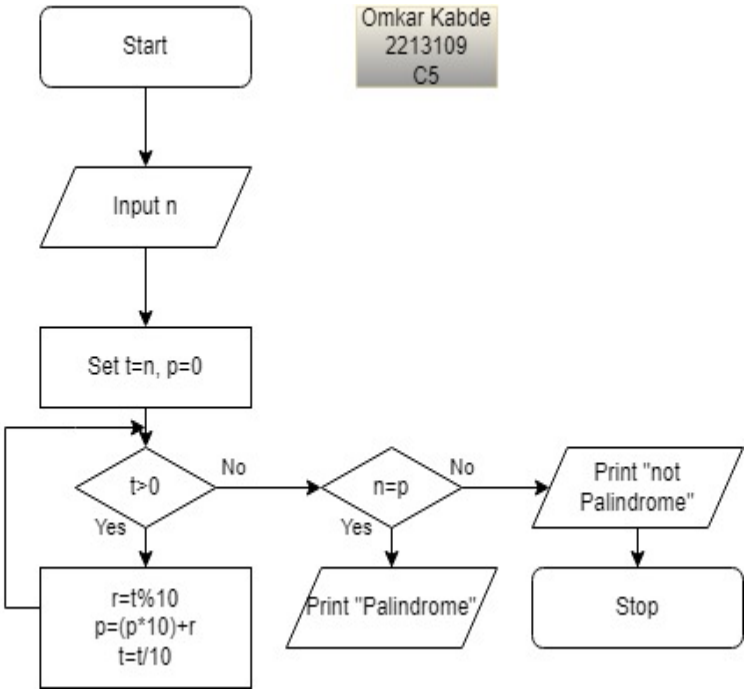
Pseudocode:

```
Begin
        Read n
        Set t=n
        Set sum=0
        Set p=1
        While(t>0) do
                Set r=t&10
                Set p=r*r*r
                Set sum=sum+p
                Set t=t/10
        End While
        If(n=sum)
                Print “Armstrong”
        Else
                Print “Not Armstrong”
        End If
End
```

18. Test whether the number is a palindrome

Flowchart:

Pseudocode:




```
Begin
        Read n
        Set t=n, p=0
        While(t>0) do
                Set r=t%10
                Set p=(p*10)+r
                Set t=t/10
        End While
        If(n=p)
                Print “Palindrome”
        Else
                Print “Not palindrome”
        End If
End
```