**Assignment 1**

**Date : 09.03.2022**

**Submission date: 03.03.2022**

Write Algorithm & Flowchart for following programs.

1. Check the given number is EVEN or ODD.

import java.util.Scanner;

class Hw

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number: ");

int n=sc.nextInt();

String s=(n%2==0)?"Even":"Odd";

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

}

}

2. Write a Java Program to find the Factorial of given number.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

System.out.print("Enter any number: ");

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

long x=1;

if(n==0 ||n==1)

System.out.print(n+"!= 1");

else

{

for(int i=n; i>=2; i--)

x\*=i;

System.out.print(n+"!= "+x);

}

}

}

3. Find the Factorial of a number using Recursion.

4. Swap two numbers without using third variable approach.

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter content of variable 'a': ");

String a=sc.next();

System.out.print("Enter content of variable 'b': ");

String b=sc.next();

String temp;

temp=a;

a=b;

b=temp;

System.out.println("AFTER SWAPPING\nContent in 'a' = "+a);

System.out.println("Content in 'b' = "+b);

}

}

5. How to check the given number is Positive or Negative in Java?

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number:");

int n=sc.nextInt();

if(n<0)

System.out.print(n+ " is a negative number");

else

System.out.print(n+ " is a positive number");

}

}

6. Write a Java Program to find whether given number is Leap year or NOT?

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

System.out.print("Enter any Year: ");

Scanner sc=new Scanner(System.in);

int y=sc.nextInt();

if((y%400==0)||(y%4==0)&&(y%100!=0))

System.out.print("The year "+y+ " is a leap year");

else

System.out.print("The year "+y+ " is NOT a leap year");

}

}

7. Write a Java Program to Print 1 To 10 Without Using Loop.

8. Write a Java Program to print the digits of a Given Number.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number:");

int n=sc.nextInt();

System.out.print("The digits of the given number are ");

while(n>0)

{

System.out.print((n%10)+" ");

n/=10;

}

}

}

9. Write a Java Program to print all the Factors of the Given number.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number:");

int n=sc.nextInt();

System.out.print("The factors of " +n+" are ");

for(int i=1; i<=n/2; i++)

{

if(n%i==0)

System.out.print((i)+" ");

}

System.out.print(n);

}

}

10. Write a Java Program to find sum of the digits of a given number.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number:");

int n=sc.nextInt(), sum=0, m=n;

while(n>0)

{

sum+=(n%10);

n/=10;

}

System.out.print("The sum of digits of "+m+" = "+sum);

}

}

11. Write a Java Program to find the smallest of 3 numbers (a,b,c)

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any 3 numbers:");

int a=sc.nextInt(), b=sc.nextInt(), c=sc.nextInt();

if(a<b)

{

if(a<c)

System.out.print(a+ " is the smallest number");

else

System.out.print(c+ " is the smallest number");

}

else

{

if(b<c)

System.out.print(b+ " is the smallest number");

else

System.out.print(c+ " is the smallest number");

}

}

}

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any 3 numbers:");

int a=sc.nextInt(), b=sc.nextInt(), c=sc.nextInt();

int min= Math.min(a,b);

min= Math.min(min,c);

System.out.print(min+ " is the smallest number");

}

}

12. How to add two numbers without using the arithmetic operators in Java?

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any 2 numbers:");

int a=sc.nextInt(), b=sc.nextInt();

for(a=a;a>0; a--)

b++;

System.out.print("Sum = "+b);

}

}

13. Write a java program to Reverse a given number.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number:");

int n=sc.nextInt(), sum=0, m=n;

while(n>0)

{

sum=(sum\*10)+(n%10);

n/=10;

}

System.out.print("The reverse number is "+sum);

}

}

14. Write a Java Program to find GCD of two given numbers.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any two number:");

int a=sc.nextInt(),b=sc.nextInt(),i;

if(b<a)

{

int temp=a;

a=b; b=temp;

}

if(b%a==0)

System.out.print("The GCD is "+a);

else

{

for(i=a/2; i>0; i--)

{

if(a%i==0 && b%i==0)

break;

}

System.out.print("The GCD is "+i);

}

}

}

15. Write a java program to LCM of TWO given number.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any two number:");

int a=sc.nextInt(),b=sc.nextInt(),i;

if(b<a)

{

int temp=a;

a=b;

b=temp;

}

for(i=1; (i\*a)%b!=0; i++);

System.out.print("The LCM is "+(i\*a));

}

}

16. Write a java program to LCM of TWO given number using Prime Factors method.

17. Check whether the Given Number is a Palindrome or NOT.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number:");

int n=sc.nextInt(), sum=0, m=n;

while(n>0)

{

sum=(sum\*10)+(n%10);

n/=10;

}

if(sum==m)

System.out.print("The given number is a Palindrome");

else

System.out.print("The given number is NOT a Palindrome");

}

}

18. Write a Java Program to print all the Prime Factors of the Given Number.

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter any number:");

int n=sc.nextInt(), c=2, m=n;

System.out.print("The prime factors of " +n+" are ");

while(n>1)

{

if(n%c==0)

{

System.out.print((c)+" ");

n/=c;

}

c+=1;

}

}

}

19. To print the following series EVEN number Series 2 4 6 8 10 12 14 16 .....

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter the maximum number:");

int n=sc.nextInt(), c=2;

System.out.print("The the even numbers are ");

for(int i=2; i<=n; i=i+2)

System.out.print(i+" ");

}

}

20. To print the following series ODD number Series 1 3 5 7 9 11 13 ....

import java.util.Scanner;

class Test

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter the maximum number:");

int n=sc.nextInt();

System.out.print("The the odd numbers are ");

for(int i=1; i<=n; i=i+2)

System.out.print(i+" ");

}

}