Week 2

1. Write a Java program to check whether a number is Buzz or not.

```
public class Buzz_no {

        public static void main(String args[]){

              int i = 70;
              if (i%10==0 || i%7==0)
                 System.out.println("Buzz Number");
              else
                 System.out.println("Not a Buzz Number");

            }
}
```

Output: Buzz Number

2. Write a Java program to calculate factorial of 12.

```
public class Factorial_12 {

        public static void main(String args[]){

                int i,sum=1;
                for(i=1;i<=12;i++)
                {
                        sum+=i*sum;
                }
             System.out.println("Factorial of 12 is : "+sum);

            }
}
```

Output: Factorial of 12 is : 1932053504

3. Write a Java program for Fibonacci series.

```
public class Fibonacci {

        public static void main(String args[]){

      int i = 1, n = 10, t1 = 0, t2 = 1;
      System.out.print("First " + n + " terms: ");
      while (i <= n)
```

```
        {
            int sum = t1 + t2;
            t1 = t2;
            t2 = sum;
            i++;
        }
}

}
```

Output: First 10 terms: 0 + 1 + 1 + 2 + 3 + 5 + 8 + 13 + 21 + 34

4. Write a Java program to reverse a number.

```
public class Reverse {

        public static void main(String args[]){

      int i =199,j,k=0;
      while (i !=0)
      {
         j=i%10;
         k=k*10+j;
         i=i/10;

      }
      System.out.println("Answer is :"+k);
}

}
```

Output: Answer is :991

5. Admission to a professional course is subject to the following conditions:

(a) marks in Mathematics >= 60 (b) marks in Physics >=50

(c) marks in Chemistry >=40 (d) Total in all 3 subjects >=200

(Or)

Total in Maths & Physics>=150

Given the marks in the 3 subjects of n (user input) students, write a program to process the applications to list the eligible candidates.

```
import java.util.Scanner;

public class Number_Process {
```

```
        public static void main(String args[]){

                int m,p,c;
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter marks of math :");
                m=sc.nextInt();
                System.out.println("Enter marks of phy :");
                p=sc.nextInt();
                System.out.println("Enter marks of chem :");
                c=sc.nextInt();

                if((m+p)>=150 || (p+c+m)>=200 )
                {
                        System.out.println("Eligable");
                }
                else
                {
                        System.out.println("Not Eligable");
                }
}

}
```

Output:

```
Enter marks of math :
60
Enter marks of phy :
95
Enter marks of chem :
45
Eligible
```

6. Write a Java program to find all roots of a quadratic equation.

```
import static java.lang.Math.*;
public class Root {

        public static void main(String args[])
          {
            int a = 1, b = -7, c = 12;

                if (a == 0)
                {
                  System.out.println("Invalid");
                  return;
                }

                int d  = b*b - 4*a*c;
```

```
                    double sqrt_val = sqrt(abs(d));

                      System.out.println("Roots are real and different \n");

                      System.out.println((double)(-b + sqrt_val) / (2 * a) + "\n"
                                  + (double)(-b - sqrt_val) / (2 * a));

            }
        }
```
Roots are real and different

4.0
3.0

7. Write a Java program to calculate the sum of natural numbers up to a certain range.

```
public class Root {

        public static void main(String args[])
          {

                int sum=0;
                for(int i=0;i<=10;i++)
                {
                        sum+=i;
                }
                System.out.println("Sum is : "+sum);

          }
        }
```
Output: Sum is : 55

8. Write a Java program to print all multiple of 10 between a given interval.

```
import java.util.Scanner;

public class Sum_of_Natural {

        public static void main(String args[])
          {
                Scanner scanner=new Scanner(System.in);
                System.out.println("Enter the range : ");
                 int N = scanner.nextInt();

                    for(int i=1;i<=N;i++)
                    {
```

```
                    System.out.println(N+" x "+i+" = "+(10*i));
                }
            }
        }
```

Output: Enter the range :
10
10 x 1 = 10
10 x 2 = 20
10 x 3 = 30
10 x 4 = 40
10 x 5 = 50
10 x 6 = 60
10 x 7 = 70
10 x 8 = 80
10 x 9 = 90
10 x 10 = 100

9. Write a Java program to generate multiplication table.

```
import java.util.Scanner;

public class Mult_Table {

        public static void main(String args[])
        {
                System.out.print("Enter the number: ");
                Scanner scanner=new Scanner(System.in);
         int N = scanner.nextInt();

                    for(int i=1;i<=10;i++)
                    {
                       System.out.println(N+" x "+i+" = "+(N*i));
                    }
        }
}
```

OP: Enter the number: 5
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50

10. Write a Java program to find HCF of two Numbers.

```
import java.util.Scanner;

public class HCF {

        public static void main(String args[])
        {
                int n1 = 81, n2 = 153;
            while(n1 != n2)
            {
               if(n1 > n2)
                  n1 -= n2;
               else
                  n2 -= n1;
            }
            System.out.println("Answer is = " + n1);
        }
}
```

Output: Answer is = 9

11. Write a Java program to find LCM of two Numbers.

```
import java.util.Scanner;

public class LCM {

        public static void main(String args[])
        {
                int n1 = 72, n2 = 120, gcd = 1;
            for(int i = 1; i <= n1 && i <= n2; ++i)
            {
               if(n1 % i == 0 && n2 % i == 0)
                  gcd = i;
            }
            int lcm = (n1 * n2) / gcd;
            System.out.printf("The LCM of %d and %d is %d.", n1, n2, lcm);
        }
}
```

Output: The LCM of 72 and 120 is 360.

12. Write a Java program to count the number of digits of an integer.

```
public class Count_Digits {
```

```
    public static void main(String args[]){

    int i =5555,counter=0;
    while (i !=0)
    {

      i=i/10;
      counter++;
    }
    System.out.println("Count is :"+counter);
}

}
```

Output: Count is :4

13. Write a Java program to calculate the exponential of a number.

```
public class Exponent_Count {


    public static void main(String args[]){
          int base = 3, exponent = 4;
        long result = 1;
        while (exponent != 0)
        {
            result *= base;
            --exponent;
        }
        System.out.println("Answer = " + result);
}

}
```

Answer = 81

14. Write a Java program to check whether a number is palindrome or not.

```
public class Palindrome {


    public static void main(String args[]){

    int num = 121, reversedInteger = 0, remainder, originalInteger;
    originalInteger = num;

    while( num != 0 )
    {
```

```
            remainder = num % 10;
            reversedInteger = reversedInteger * 10 + remainder;
            num  /= 10;
        }
        if (originalInteger == reversedInteger)
            System.out.println(originalInteger + " is a palindrome.");
        else
            System.out.println(originalInteger + " is not a palindrome.");
}

}
```
Outout: 121 is a palindrome.

15. Write a Java program to check whether a number is prime or not.

```
public class Prime {


        public static void main(String args[]){
                    int i,m=0,flag=0;
                     int n=19;
                     m=n/2;
                     if(n==0||n==1){
                      System.out.println(n+" is not prime number");
                     }else{
                      for(i=2;i<=m;i++){
                       if(n%i==0){
                        System.out.println(n+" is not prime number");
                        flag=1;
                        break;
                       }
                      }
                      if(flag==0)  { System.out.println(n+" is prime number"); }
                     }
}

}
```
Output: 19 is prime number

16. Write a Java program to convert a Binary Number to Decimal and Decimal to Binary.

```
import java.util.Scanner;

public class Binary_Decimal {


        public static void main(String args[]){
```

```
        int n, count = 0, a;
        String x = "";
        Scanner s = new Scanner(System.in);
        System.out.print("Enter any decimal number:");
        n = s.nextInt();
        while(n > 0)
        {
            a = n % 2;

            x = x + "" + a;
            n = n / 2;
        }
        System.out.println("Binary number:"+x);

        int base = 1,dec_value=0;
        System.out.print("Enter any Binary number:");
       int  num= s.nextInt();
        int temp = num;
        while (temp!=0) {
            int last_digit = temp % 10;
            temp = temp / 10;

            dec_value += last_digit * base;

            base = base * 2;
        }
        System.out.println("Decimal number:"+dec_value);
}

}
```

Output:

```
Enter any decimal number:5
Binary number:101
Enter any Binary number:101
Decimal number:5
```

17. Write a Java program to find median of a set of numbers.

```
public class Median {


    public static void main(String args[]){

        int a[] = { 1,2,3,4,5,6,7,8};
    int n = 8;
    if (n % 2 != 0)
    {
        System.out.println("Median is = "+a[n / 2]);
```

```
        }
        else
        {
           System.out.println("Median is = "+(a[(n - 1) / 2] + a[n / 2]) / 2.0);
        }
}

}
```
Ouput: Median is = 4.5

18. Write a program to compute the value of Euler's number that is used as the base of natural logarithms. Use the following formula.

e= 1+ 1/1! +1 /2! + 1/3+..... 1/n!

```
public class Eular_Log {


        public static void main(String args[]){

                double term = 1.0;
                double sum = 1.0;
                int n = 0;
                while (term >= 0.0000001)
                {
                        n++;
                        term = term/n;
                        sum = sum + term;
                }
                  System.out.println(" Approximate value of e is: "+sum);

}

}
```
Ouput: Approximate value of e is: 2.718281826198493

19. Write a Java program to generate all combination of 1, 2, or 3 using loop.

```
public class Combination {


        public static void main(String args[]){


        int i, j, k;
```

```
        for (i=1; i<=3; i++)

        {
        for (j=1; j<=3; j++)

        {
        for (k=1; k<=3; k++)

        System.out.println(i+"  "+j+"  "+k);
        }

}

}}
1 1 1
1 1 2
1 1 3
1 2 1
1 2 2
1 2 3
1 3 1
1 3 2
1 3 3
2 1 1
2 1 2
2 1 3
2 2 1
2 2 2
2 2 3
2 3 1
2 3 2
2 3 3
3 1 1
3 1 2
3 1 3
3 2 1
3 2 2
3 2 3
3 3 1
3 3 2
3 3 3
```

20. Write a Java program to read two integer values m and n and to decide and print whether m is multiple of n.

```
import java.util.Scanner;

public class Multiple_Find {

        public static void main(String args[])
        {
                System.out.print("Enter M: ");
                Scanner scanner=new Scanner(System.in);
         int M = scanner.nextInt();
                System.out.print("Enter M: ");
```

```
        int N = scanner.nextInt();

                if(M%N==0)
                        System.out.println("Yes");
                else
                        System.out.println("No");
        }
}
```

Output: Enter M: 10
Enter M: 5
Yes

21. Write a Java program to display prime numbers between a given interval.

```
public class Prime {


        public static void main(String args[]){
                int i,m=0,flag=0;
                 int n=19;
                 m=n/2;
                 if(n==0||n==1){
                  System.out.println(n+" is not prime number");
                 }else{
                  for(i=2;i<=m;i++){
                   if(n%i==0){
                    System.out.println(n+" is not prime number");
                    flag=1;
                    break;
                   }
                  }
                  if(flag==0)  { System.out.println(n+" is prime number"); }
                 }
}

}
```

Enter Up: 10
Enter Down: 20
11 is prime number
13 is prime number
17 is prime number
19 is prime number

22. Write a Java program to check whether a given number is Armstrong Number or not.

```
import java.util.Scanner;

public class Amstrong {


        public static void main(String args[]){
                int c=0,a,temp;
           int n=153;
           temp=n;
           while(n>0)
           {
           a=n%10;
           n=n/10;
           c=c+(a*a*a);
           }
           if(temp==c)
           System.out.println("armstrong number");
           else
              System.out.println("Not armstrong number");
         }

}
```

armstrong number

Write Java programs for the patterns given bellow: (23-25)

23.

1

2 3 4

5 6 7 8 9

```
import java.util.Scanner;

public class Pattern1 {


        public static void main(String args[]){

                int i,j;
                for(i=1;i<5;i++)
                {
                        for(j=1;j<=i;j++)
                        {
                                System.out.print(j);
```

```
                }

                System.out.println();
            }

        }

}
```

24.

```
       1
   2 3 2
  3 4 5 4 3
4 5 6 7 6 5 4
```

```
public class Pattern3 {


    public static void main(String args[]){
            int i, space, rows, k=0, count = 0, count1 = 0;
             rows=4;
              for(i=1; i<=rows; ++i)
              {
                 for(space=1; space <= rows-i; ++space)
                 {
                   System.out.print("  ");
                    ++count;
                 }
                 while(k != 2*i-1)
                 {
                    if (count <= rows-1)
                    {
                            System.out.print(i+k+" ");
                       ++count;
                    }
                    else
                    {
                       ++count1;
                       System.out.print(i+k-2*count1);
                    }
                    ++k;
                 }
                 count1 = count = k = 0;
                 System.out.println();
              }
        }
```

}

25.

1 1

2 2

3 3

4

```
public class Pattern2 {

        public static void main(String args[]){
                int n=5;
                  int i, j;
            for (i = n - 1; i >= 0; i--)
            {
                for (j = n - 1; j > i; j--)
                {
                    System.out.print(" ");
                }


                System.out.print(i );

                for (j = 1; j < (i * 2); j++)
                    System.out.print(" ");

                if (i >= 1)
                    System.out.print(i);
                System.out.print("\n");
            }
          }

}
```