Java-Week 2

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

```java
package Week2;

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.

```java
package Week2;

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.

```java
package Week2;

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)
        {
```

```java
            System.out.print(t1 + " + ");
            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.

```java
package Week2;

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.

```java
package Week2;

import java.util.Scanner;

public class Number_Process {
```

```java
        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.

```java
package Week2;


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");
```

```java
                        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.

```java
package Week2;

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.

```java
package Week2;

import java.util.Scanner;
```

```java
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.

```java
package Week2;

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.

```java
package Week2;

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.

```java
package Week2;

import java.util.Scanner;

public class LCM {

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

```java
        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.

```java
package Week2;

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.

```java
package Week2;

public class Exponent_Count {


    public static void main(String args[]){
          int base = 3, exponent = 4;
            long result = 1;
            while (exponent != 0)
            {
```

```java
                        result *= base;
                        --exponent;
                    }
                System.out.println("Answer = " + result);
    }

}
```
Answer = 81

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

```java
package Week2;

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.

```java
package Week2;

public class Prime {


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

```java
            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.

```java
package Week2;

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();
```

```java
                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.

```java
package Week2;

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!

```java
package Week2;

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.

```java
package Week2;

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.

```java
package Week2;

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");
```

```java
                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.

```java
package Week2;

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.

```java
package Week2;
```

```java
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


```java
package Week2;

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++)
```

```java
                    {
                        System.out.print(j);
                    }

                    System.out.println();
            }

        }

}
```

24.

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

```java
package Week2;

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


package Week2;

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");
            }
        }
}
```