

Assignment-3

21. Write a program to print the following pattern,

```
Scanner input = new Scanner(System.in);
char c = input.next().charAt(0);
int n = input.nextInt();
for (int i = 1; i <= n; i++)
{
    for (int j = 1; j <= i; j++)
    {
        System.out.print(c);
    }
    System.out.print("\n");
}
```

22. Find the year of the given date is leap year or not?

```
import java.util.Scanner;
public class ak
{
    public static void main (String[] args)
    {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter year: ");
        String year = input.next();
        String a[] = year.split("/");
        String d = a[2];
        int num = Integer.parseInt(d);
        if ((num % 4 == 0 && num % 100 != 0) || num % 400 == 0)
            System.out.println("It is a leap year");
        else
            System.out.println("It is not a leap year");
    }
}
```

23. Find the number of factors for the given number.

```
Scanner input = new Scanner(System.in);  
int n = input.nextInt();  
for (int i = 1; i <= n; i++)  
{  
    if (n % i == 0)  
        factors = factors + 1;  
}  
System.out.print("Number of factors = " + factors);
```

```
1. Scanner input = new Scanner(System.in);  
int n = input.nextInt();  
int factors = 0;  
for (int i = 1; i <= n; i++)  
{  
    if (n % i == 0)  
        factors++;  
}  
System.out.print(factors);
```

24. Write a program to print the given number is perfect number or not?

```
Scanner input = new Scanner(System.in);  
int n = input.nextInt();  
int factors = 0;  
for (int i = 1; i < n; i++)  
{  
    if (n % i == 0)  
        factors = factors + i;  
}  
if (n == factors)  
    System.out.print("It's a perfect number");
```


25. Write a program to print the number of vowels in the given statement?

```
Scanner input = new Scanner(System.in);
String name = input.nextLine();
int len = name.length();
char a[] = new char[len];
int vow = 0;
for (int i = 0; i < len; i++)
{
    a[i] = name.charAt(i);
    if (a[i] == 'a' || a[i] == 'e' || a[i] == 'i' || a[i] == 'o' ||
        a[i] == 'u' || a[i] == 'A' || a[i] == 'E' || a[i] == 'I' || a[i] == 'O' ||
        a[i] == 'U')
        vow = vow + 1;
}
System.out.println(vow);
```

26. Write a program to print hollow square symbol pattern?

```
Scanner input = new Scanner(System.in);
int n = 5;
char c = input.next().charAt(0);
for (int i = 1; i <= n; i++)
{
    for (int j = 1; j <= n; j++)
    {
        if (i == 1 || j == 1 || i == n || j == n)
            System.out.print(c + " ");
        else
            System.out.print(" ");
    }
    System.out.println();
}
```

27. Write a program to print Fibonacci Series;

```
Scanner input = new Scanner(System.in);  
int n = input.nextInt();  
int a1 = 0; a2 = 1;  
for (int i = 0; i < n; i++)  
{  
    System.out.print(a1 + " ");  
    int a3 = a1 + a2;  
    a1 = a2;  
    a2 = a3;  
}
```

28. Write a program to print the pattern;

```
Scanner input = new Scanner(System.in);  
int n = input.nextInt();  
for (int i = 1; i <= n; i++)  
{  
    for (int j = 1; j <= i; j++)  
    {  
        System.out.print(i);  
    }  
    System.out.println();  
}
```

29. Write a program to find the square, cube of the decimal number;

```
Scanner input = new Scanner(System.in);  
float n = input.nextFloat();  
System.out.print("Square : " + (n * n));  
System.out.print("Cube : " + (n * n * n));
```


80. Write a program to find the frequency of each element in the array?

```
import java.util.Arrays;
import java.util.Scanner;
public class Q80 {
    public static void main (String [] args)
    {
        Scanner input = new Scanner (System.in);
        int a[] = new int [] {1,2,8,3,2,2,2,5,1};
        int t[] = new int [a.length];
        for (int i=0; i<a.length; i++)
        {
            int Count = 1;
            for (int j=i+1; j<a.length; j++)
            {
                if (a[i]==a[j])
                {
                    Count++;
                    t[j] = visited;
                }
            }
            if (t[i] != visited)
                t[i] = Count;
        }
        for (int i=0; i<a.length; i++)
        {
            if (t[i] != visited)
                t[i] = Count;
        }
        for (int i=0; i<a.length; i++)
        {
            if (t[i] != visited)
                System.out.print (a[i] + " " + t[i]);
        }
    }
}
```