

Assignment 1

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Subject : OOPs with JAVA

PROGRAM 1

CODE -

```
import java.io.*;
import java.util.*;
import java.lang.*;
class ProgramOne
{
    public static void main(String[]args)
    {
        int num,flag=0;
        Scanner venki = new Scanner(System.in);
        System.out.println("\nEnter a number to check if the number is p
ime or not");
        num = venki.nextInt();
        for(int i=2;i<num;i++)
        {
            for(int j=i;j<num;j++)
            {
                if(num%j==0)
                {
                    flag=1;
                    break;
                }
            }
        }
        if(flag==0)
        {
            System.out.println("The number is PRIME");
        }
        else
        {
            System.out.println("\nThe number is NOT A PRIME NUMBER");
        }
    }
}
```

OUTPUT -

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramOne
```

```
Enter a number to check if the number is prime or not  
10
```

```
The number is NOT A PRIME NUMBER
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramOne
```

```
Enter a number to check if the number is prime or not  
9
```

```
The number is NOT A PRIME NUMBER
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramOne
```

```
Enter a number to check if the number is prime or not  
3
```

```
The number is PRIME
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramOne
```

```
Enter a number to check if the number is prime or not  
17
```

```
The number is PRIME
```

PROGRAM 2

CODE -

```
import java.io.*;
import java.util.*;
import java.lang.*;
class ProgramTwo
{
    public static void main(String[]args)
    {
        int n,i,j;
        Scanner venki = new Scanner(System.in);
        System.out.println("\nEnter a number :");
        n = venki.nextInt();
        for(i=1;i<=n;i++)
        {
            for(j=1;j<=i;j++)
            {
                System.out.print(i);
            }
            System.out.println();
        }
    }
}
```

OUTPUT -

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramTwo
```

```
Enter a number :
```

```
7
```

```
1
```

```
22
```

```
333
```

```
4444
```

```
55555
```

```
666666
```

```
7777777
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramTwo
```

```
Enter a number :
```

```
5
```

```
1
```

```
22
```

```
333
```

```
4444
```

```
55555
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramTwo
```

```
Enter a number :
```

```
3
```

```
1
```

```
22
```

```
333
```

```
PS D:\Programming\JAVA\Java\jdk\bin> █
```

PROGRAM 3

CODE –

```
import java.io.*;
import java.util.*;
import java.lang.*;
class
{
    public static void main(String[]args)
    {
        String n;
        int i,j,c=0;
        Scanner venki = new Scanner(System.in);
        System.out.println("\nEnter a sentence :");
        n = venki.nextLine();
        for(i=0;i<n.length();i++)
        {
            switch(n.charAt(i))
            {
                case 'U':
                case 'O':
                case 'I':
                case 'E':
                case 'A':
                case 'u':
                case 'o':
                case 'i':
                case 'e':
                case 'a':
                    c++;
                    break;
            }
        }
        System.out.println("The number of vowels in the sentence : "+c);
    }
}
```

OUTPUT -

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramThree
```

```
Enter a sentence :
```

```
The quick brown fox jumps across the river
```

```
The number of vowels in the sentence : 11
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramThree
```

```
Enter a sentence :
```

```
I am the best
```

```
The number of vowels in the sentence : 4
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramThree
```

```
Enter a sentence :
```

```
I love coding
```

```
The number of vowels in the sentence : 5
```

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramThree
```

```
Enter a sentence :
```

```
Google is the best
```

```
The number of vowels in the sentence : 6
```

```
PS D:\Programming\JAVA\Java\jdk\bin> █
```

PROGRAM 4

CODE –

```
import java.io.*;
import java.util.*;
import java.lang.*;
class ProgramFour
{
    public static void main(String[]args)
    {
        int n;
        int i,j;
        char c;
        Scanner venki = new Scanner(System.in);
        do
        {
            System.out.println("\nEnter number :");
            n = venki.nextInt();
            System.out.println("Do you want to continue ? Press 'y' to continue or 'n' to exit! ");
            c=venki.next().charAt(0);
        }while(c!='n');
    }
}
```

OUTPUT-

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramFour

Enter number :
4
Do you want to continue ? Press 'y' to continue or 'n' to exit!
y

Enter number :
1
Do you want to continue ? Press 'y' to continue or 'n' to exit!
y

Enter number :
900
Do you want to continue ? Press 'y' to continue or 'n' to exit!
y

Enter number :
123
Do you want to continue ? Press 'y' to continue or 'n' to exit!
y

Enter number :
45
Do you want to continue ? Press 'y' to continue or 'n' to exit!
n
PS D:\Programming\JAVA\Java\jdk\bin> █
```

PROGRAM 5 –

CODE –

```
import java.io.*;
import java.util.*;
import java.lang.*;
class ProgramFive
{
    public static void main(String[]args)
    {
        int p,t=5,r;
        Scanner venki = new Scanner(System.in);
        System.out.println("Enter the amount of investment :");
        p=venki.nextInt();
        System.out.println("Enter the rate of interest :");
        r=venki.nextInt();
        float si;
        si=(p*t*r)/100;
        System.out.println("The SI will be : "+si);
    }
}
```

OUTPUT –

```
PS D:\Programming\JAVA\Java\jdk\bin> javac ProgramFive.java
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramFive
Enter the amount of investment :
9000
Enter the rate of interest :
3
The SI will be : 1350.0
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramFive
Enter the amount of investment :
5000
Enter the rate of interest :
13
The SI will be : 3250.0
PS D:\Programming\JAVA\Java\jdk\bin> █
```


PROGRAM 6 –

```
import java.io.*;
import java.util.*;
import java.lang.*;
class ProgramSix
{

    public static void main(String[]args)
    {
        int n,i,flag=0;
        Scanner venki = new Scanner(System.in);
        System.out.println("Enter the array size :");
        n=venki.nextInt();
        System.out.println("Enter the array elements :");
        int a[]=new int[n];
        for(i=0;i<n;i++)
            a[i]=venki.nextInt();
        System.out.println("Enter the search element : ");
        int x = venki.nextInt();
        for(i=0;i<n;i++)
        {
            if(a[i]==x)
            {
                flag=1;
                break;
            }
        }
        if(flag==1)
        {
            System.out.println("Search element found!");
        }
        else
        {
            System.out.println("Search element NOT found!");
        }
    }
}
```

OUTPUT–

```
PS D:\Programming\JAVA\Java\jdk\bin> javac ProgramSix.java
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramSix
Enter the array size :
5
Enter the array elements :
90
8
45
1
100
Enter the search element :
45
Search element found!
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramSix
Enter the array size :
5
Enter the array elements :
1
2
10
-34
9
Enter the search element :
23
Search element NOT found!
PS D:\Programming\JAVA\Java\jdk\bin> 
```

PROGRAM 7 –

CODE –

```
import java.io.*;
import java.util.*;
import java.lang.*;
class ProgramSeven
{
    public static void main(String[]args)
    {
        String s;
        Scanner venki = new Scanner(System.in);
        System.out.println("Enter a sentence :");
        s=venki.nextLine();
        String a[] = s.split(" ");
        System.out.println("The number of words in the entered sentece :
"+a.length);
    }
}
```

OUTPUT –

```
PS D:\Programming\JAVA\Java\jdk\bin> javac ProgramSeven.java
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramSeven
Enter a sentence :
The quick brown fox jumps across the river
The number of words in the entered sentece : 8
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramSeven
Enter a sentence :
I love Google
The number of words in the entered sentece : 3
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramSeven
Enter a sentence :
Google is the best
The number of words in the entered sentece : 4
PS D:\Programming\JAVA\Java\jdk\bin> █
```

PROGRAM 8 –

CODE –

```
import java.io.*;
import java.util.*;
import java.lang.*;

class ProgramEight
{
    public static void main(String[]args)
    {
        int i,n;
        Scanner venki = new Scanner(System.in);
        System.out.println("Enter the array size :");
        n=venki.nextInt();
        String s[] = new String[n];
        System.out.println("Enter the String array elements :");
        for(i=0;i<n;i++)
            s[i]=venki.nextLine();
        Arrays.sort(s);
        System.out.printf("Modified array : \n%s\n\n", Arrays.toString(s));
        System.out.println("Enter the integer array elements : ");
        int a[] = new int[n];
        for(i=0;i<n;i++)
            a[i]=venki.nextInt();
        Arrays.sort(a);
        System.out.printf("Modified array : %s",Arrays.toString(a));
    }
}
```

OUTPUT –

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramEight
Enter the array size :
5
Enter the String array elements :
Venkatesh
Ajay
Sanket
Rohit
Modified array :
[, Ajay, Rohit, Sanket, Venkatesh]

Enter the integer array elements :
10
23
5
100
50
Modified array : [5, 10, 23, 50, 100]
PS D:\Programming\JAVA\Java\jdk\bin> 
```

PROGRAM 9 –

CODE –

```
import java.io.*;
import java.util.*;
import java.lang.*;

class ProgramNine
{
    public static void main(String[]args)
    {
        int i,j,sum=0,avg=0;
        Scanner venki = new Scanner(System.in);
        int m[][]=new int[5][3];
        int a[]= new int[3];
        for(i=0;i<5;i++)
        {
            System.out.println("Enter the 3 subject marks of student "+(i+
1));
            for(j=0;j<3;j++)
            {
                System.out.println("Enter the marks of subject "+(j+1));
                m[i][j]=venki.nextInt();
                a[j]=m[i][j];
            }
            Arrays.sort(a);
            sum=a[2]+a[1]+a[0];
            avg=(sum-a[0])/2;
            System.out.println("Sum :"+sum);
            System.out.println("Avg :"+avg);
        }
    }
}
```

OUTPUT –

```
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramNine
Enter the 3 subject marks of student 1
Enter the marks of subject 1
90
Enter the marks of subject 2
91
Enter the marks of subject 3
95
Sum :276
Avg :93
Enter the 3 subject marks of student 2
Enter the marks of subject 1
99
Enter the marks of subject 2
89
Enter the marks of subject 3
80
Sum :268
Avg :94
Enter the 3 subject marks of student 3
Enter the marks of subject 1
75
Enter the marks of subject 2
100
Enter the marks of subject 3
94
Sum :269
Avg :97
Enter the 3 subject marks of student 4
Enter the marks of subject 1
90
Enter the marks of subject 2
100
Enter the marks of subject 3
67
Sum :257
Avg :95
Enter the 3 subject marks of student 5
Enter the marks of subject 1
78
Enter the marks of subject 2
76
Enter the marks of subject 3
70
Sum :224
Avg :77
```

PROGRAM 10 –

CODE –

```
import java.io.*;
import java.util.*;
import java.lang.*;

class ProgramTen
{
    public static void main(String[]args)
    {
        int i;
        Scanner venki = new Scanner(System.in);
        System.out.println("Enter a string");
        String s = venki.nextLine();
        String str="";
        for(i=s.length()-1;i>=0;i--)
        {
            str+=s.charAt(i);
        }
        if(str.equals(s))
        {
            System.out.println("The string is palindrome ");
        }
        else
        {
            System.out.println("The string is not palindrome");
        }
    }
}
```

OUTPUT –

```
Enter a string
venki
The string is not palindrome
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramTen
Enter a string
mam
The string is palindrome
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramTen
Enter a string
123
The string is not palindrome
PS D:\Programming\JAVA\Java\jdk\bin> java ProgramTen
Enter a string
12321
The string is palindrome
```