

Program : 06

Object:- Write a Java program to print alternate prime numbers.

```
import java.util.*;
class primenumbers
{
    public static void main (String args[])
    {
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter the number, to which we have to check prime");
        int N = sc.nextInt();
        int l = 0; int prime [] = new int [N];
        for (int i = 1; i <= N; i++)
        {
            int counter = 0;
            for (int j = i; j >= i; j--)
            {
                if (i % j == 0)
                {
                    counter++;
                }
            }
            if (counter == 2)
            {
                prime [l] = i;
                l++;
            }
        }
        System.out.println ("Alternate prime numbers upto " + N);
        for (int a = 0; a < l; a++)
        {
            System.out.print (prime [a] + " ");
        }
    }
}
```

Output:

Enter the number, to which we have to check prime:

59

Alternate prime numbers upto 59

2 5 11 17 23 31 41 47 59

Program : 07

Object :- Write a Java program to find square root of a given number without using `sqr()` function.

```
import java.util.*;
class SquareRoot
{
    double square(double n, double i, double j)
    {
        double mid = (i + j) / 2;
        double mul = mid * mid;
        if ((mul == n) || (Math.abs(mul - n) < 0.0001))
        {
            return mid;
        }
        else if (mul < n)
        {
            return square(n, mid, j);
        }
        else
        {
            return square(n, i, mid);
        }
    }

    public static void main (String args[])
    {
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter a number : ");
        double n = sc.nextDouble();
        findsqrt (n);
    }

    void findsqrt (double n)
    {
        double i = 1,
```

```

boolean found = false;
while (found != true)
{
    if (i * i == n)
    {
        System.out.println(i);
        found = true;
    }
    else if (i * i > n)
    {
        double r = square(n, i - 1, i);
        System.out.println(r);
        found = true;
    }
}
else
{
    i++;
}
}
}
}

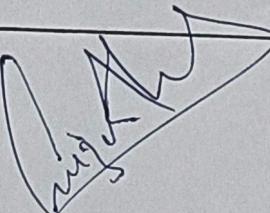
```

Output :-

Enter a number:

3

1.73205



Program 8:

Object :- Write a program to perform addition of two numbers without using + or - operator.

```
import java.util.*;  
class Add  
{  
    public static void main (String [] args)  
    {  
        Scanner in = new Scanner (System.in);  
        int a, b;  
        double s;  
        System.out.println ("Enter a number");  
        a = in.nextInt();  
        System.out.println ("Enter another number");  
        b = in.nextInt();  
        s = Math.log (Math.exp (a) * Math.exp (b));  
        System.out.println ("Sum = " + s);  
    }  
}
```

Output:-

```
Enter a number :  
2  
Enter another number  
3
```

Sum = 5.0

Output :-

Point is (0, 0)

Point is (2, 3)

Rajesh

Program: 09

Object:- Write a Java program to print armstrong NO ?

```
import java.util.*;
public class Armstrong
{
    public static void main (String args[])
    {
        int rem = 0, sum = 0;
        Scanner sc = new Scanner(System.in);
        System.out.println ("Enter a no");
        int a = sc.nextInt();
        int temp = a;
        while (a > 0)
        {
            rem = a % 10;
            int cube = rem * rem * rem;
            sum = sum + cube;
            a = a / 10;
        }
        if (temp == sum)
        {
            System.out.println ("Armstrong");
        }
        else
        {
            System.out.println ("Not armstrong");
        }
    }
}
```

Output:

Enter a no : 153

Armstrong.

Enter a no: 250

Not Armstrong.

QMS
Date

Program : 10

Object :- Write a Java program to print the given pattern, and taken no of rows from user.

```
*# # # #  
* * # # #  
* * * # #  
* * * * #  
* * * * *
```

```
import java.util.Scanner;  
Class pattern
```

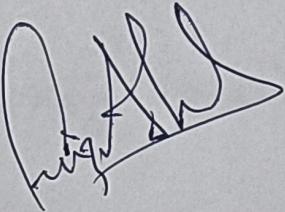
```
{  
    public static void main (String args[])  
    Scanner sc = new Scanner (System.in);  
    System.out.println ("Enter the number of rows :");  
    int n = sc.nextInt();  
    for (int a=1; a<=n; a++)  
    {  
        for (int b=1; b<=a; b++)  
        {  
            System.out.print ("* " + " ");  
        }  
        for (int c=n; c>a; c--)  
        {  
            System.out.print ("# " + " ");  
        }  
        System.out.println (" ");  
    }  
}
```

Output:

Enter the number of rows:

5

```
*# # # #  
* * # # #  
* * * # #  
* * * * #  
* * * * *
```



Program 11 :-

Object :- Write a program on Constructor overloading.

class Point

{

 int x;

 int y;

 Point()

{

 x = 0;

 y = 0;

}

 Point(int x, int y)

{

 this.x = x;

 this.y = y;

}

 void display()

{

 System.out.println("Point is : (" + x + ", " + y + ")");

}

}

Class Test

{

 public static void main(String[] args)

{

 Point origin = new Point();

 Point p = new Point(2, 3);

 origin.display();

 p.display();

}

}

Program 12 :-

Object :- Write a program to calculate Simple Interest of several banks SBI, PNB, HDFC, ICICI using inheritance.

```
class Bank
{
    double p, r, t;
    Bank(double p, double r, double t)
    {
        this.p = p;
        this.r = r;
        this.t = t;
    }
    double interest()
    {
        double i = (p * r * t) / 100;
        return i;
    }
    public void display()
    {
        System.out.println("Principle : " + p);
        System.out.println("Rate : " + r);
        System.out.println("Time : " + t);
        double i = interest();
        System.out.println("Interest = " + i);
        System.out.println("New amount : " + (p + i));
    }
}
```

class SBI extends Bank

{

 SBI (double p, double t)

{

 super (p, 2, t); // rate of interest = 2%

}

}

class PNB extends Bank

{

 PNB (double p, double t)

{

 super (p, 3, t);

}

}

class HDFC extends Bank

{

 HDFC (double p, double t)

{

 super (+, 4, t);

}

}

class ICICI extends Bank

{

 ICICI (double p, double t)

{

 super (p, 4.5, t);

}

}

```
import java.util.*;
class Test
{
    public static void main (String [] args)
    {
        double p, t;
        int ch;
        Scanner in = new Scanner (System.in);
        System.out.println ("Enter Principal amount : ");
        p = in.nextDouble();
        System.out.println ("Enter time (in years) : ");
        t = in.nextDouble();
        System.out.println ("Select Bank");
        System.out.println ("1 : SBI");
        System.out.println ("2 : PNB");
        System.out.println ("3 : HDFC");
        System.out.println ("4 : ICICI");
        ch = in.nextInt();
        switch (ch)
    {
```

Case 1:

```
SBI s = new SBI (p, t);
s.display();
break;
```

Case 2:

```
PNB p = new PNB (p, t);
p.display();
break;
```

Case 3:

```
HDFC h = new HDFC (p, t);
h.display();
break;
```

Case 4 :

```
ICICI i = new ICICI(p,t);
```

```
i.display();
```

```
break;
```

default :

```
System.out.println("Invalid choice");
```

```
}
```

```
}
```

```
}
```

Output :

Enter Principle amount

1000

Enter time (in years)

5

Select Bank

1 : SBI

2 : PNB

3 : HDFC

4 : ICICI

4

Principle : 1000.0

Rate : 4.5

Time : 5.0

Interest : 225.0

New amount : 1225.0

~~Rishabh~~

Program 13:

Object:- Write a program to copy elements of one array to another.

```
import java.util.*;
class CopyArray
{
    public static void main (String [] args)
    {
        int [] a = new int [5];
        int [] b = new int [a.length];
        Scanner in = new Scanner (System.in);
        for (int i = 0; i < a.length; i++)
        {
            a[i] = in.nextInt();
        }
        System.out.println ("Copying to b");
        for (int i = 0; i < a.length; i++)
        {
            b[i] = a[i];
        }
        System.out.println ("Array b");
        for (int i = 0; i < b.length; i++)
        {
            System.out.print (b[i]);
        }
    }
}
```

Rishabh

Output:

Enter 5 elements:
2, 4, 6, 8, 10

Array b
2 4 6 8 10

Copying to b

Program 14:

Object:- Write a program to find smallest element in an array.

```
import java.util.*;
class Smallest
{
    public static void main (String [] args)
    {
        int a[] = new int [5];
        int s;
        Scanner in = new Scanner (System.in);
        System.out.println ("Enter 5 elements");
        for (int i=0; i<a.length; i++)
        {
            a[i] = in.nextInt();
        }
        s = a[0];
        for (int i=0; i<a.length; i++)
        {
            if (a[i] < s)
            {
                s = a[i];
            }
        }
        System.out.println ("Smallest Element = " + s);
    }
}
```

Output:

Enter 5 elements:
5 7 9 -1 0
Smallest element = -1

Dinesh