Write java program for reading input of various data types from user using scanner class.

```java
/*  Name  : Sandesh Shivaji Shinde
    PRN   : 23620006
    Ques. : Write java program for reading input of various data types from user using
scanner class.
 */
import java.util.*;

public class Student
{
    int rollNo;
    float cgpa;
    String name;
    char grade;

    Scanner sc = new Scanner(System.in);

    public void setData()
    {
        System.out.print("Enter Name    : ");
        name = sc.nextLine();

        System.out.print("Enter Roll No : ");
        rollNo = sc.nextInt();

        System.out.print("Enter CGPA    : ");
        cgpa = sc.nextFloat();

        System.out.print("Enter Grade   : ");
        grade = sc.next().charAt(0);
    }

    public void getData()
    {
        System.out.println("\nName : "+name);
        System.out.println("Roll No. : "+rollNo);
        System.out.println("CGPA : "+cgpa);
        System.out.println("Grade : "+grade);
    }

    public static void main(String args[])
    {
        Student s = new Student();
        s.setData();
        s.getData();
    }
}
```

Write a Java program to convert seconds to hour, minute and seconds.

```java
/*  Name  : Sandesh Shivaji Shinde
    PRN   : 23620006
    Ques. : Write a Java program to convert seconds to hour, minute and seconds.
 */

import java.util.*;

public class hour {
    int second;
    int minute=0;
    int hour=0;

    Scanner sc = new Scanner(System.in);

    void setSeconds()
    {
        System.out.println("Enter Seconds : ");
        second = sc.nextInt();
    }

    void convertHour()
    {
        hour = (second/3600);
        minute = (second - (hour*3600))/60;
        second = (second - (hour*3600)-(minute*60));
    }

    void getData()
    {
        System.out.println("Hour : "+hour+"\tMinute : "+minute+"\tSeconds : "+second);
    }

    public static void main(String args[])
    {
        hour h = new hour();
        h.setSeconds();
        h.convertHour();
        h.getData();
    }
}
```

Write a Java program to check if there is a 10 in a given array of integers

```java
/*  Name  : Sandesh Shivaji Shinde
    PRN   : 23620006
    Ques. : Write a Java program to check if there is a 10 in a given array of integers.
 */
import java.util.*;

public class search {

    Vector<Integer> vec = new Vector<Integer>(10);
    int n;

    Scanner sc = new Scanner(System.in);


    void getElements()
    {
        System.out.println("Enter length of array   : ");
        n = sc.nextInt();
        System.out.println("Enter "+ n +" Elements : ");

        for(int i=0;i<n;i++)
        {
            vec.add(sc.nextInt());
        }
    }

    void dispElements()
    {
        System.out.print("\nArray : "+vec);
    }

    void searchElements()
    {
        int flag = 0;
        for(int i=0;i<n;i++)
        {
            if(vec.get(i)==10)
            {
                System.out.println("\n10 found in array.");
                flag = 1;
                break;
            }
        }

        if(flag == 0) System.out.println("\n10 Not found in array.");

    }

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

```
        search s = new search();
        s.getElements();
        s.dispElements();
        s.searchElements();
    }

}
```

Write a program to calculate the factorial of a number.

```java
/*  Name   : Sandesh Shivaji Shinde
    PRN    : 23620006
    Ques. : Write a program to calculate the factorial of a number. (The number is passed
as the command-line argument whose factorial we need to calculate).
 */
import java.util.*;

public class factorial {
    int num;

    Scanner sc = new Scanner(System.in);

    int fac(int n)
    {
        if(n == 0 || n==1) return n;
        return n*fac(n-1);
    }

    void getNumber()
    {
        System.out.print("Enter number : ");
        num = sc.nextInt();
    }

    void dispFact()
    {
        System.out.println("Factorial : "+fac(num));
    }

    public static void main(String args[])
    {
        factorial f = new factorial();
        f.getNumber();
        f.dispFact();
    }
}
```

Write a Java Program to find transpose of Matrix.

```java
/*  Name  : Sandesh Shivaji Shinde
    PRN   : 23620006
    Ques. : Write a Java Program to find tranpose of Matrix.
 */
import java.util.*;

public class tranpose {

    static int origin[][] = {{1,2,3},{4,5,6},{7,8,9}};
    int tranpose[][] = new int[3][3];

    void dispMatrix(int arr[][])
    {
        for(int i=0;i<3;i++)
        {
            for(int j=0;j<3;j++)
            {
                System.out.print(arr[i][j]+" ");
            }
            System.out.println();
        }
    }

    void tranposeMatrix()
    {
        for(int i=0;i<3;i++)
        {
            for(int j=0;j<3;j++)
            {
                tranpose[i][j] = origin[j][i];
            }

        }
    }

    public static void main(String args[])
    {
        tranpose t = new tranpose();
        System.out.println("Original Matrix  : ");
        t.dispMatrix(origin);
        t.tranposeMatrix();
        System.out.println("\nTranspose Matrix : ");
        t.dispMatrix(t.tranpose);

    }
}
```

Write a program to implement different types of constructors.

```java
/*  Name  : Sandesh Shivaji Shinde
    PRN   : 23620006
    Ques. : Write a program to implement different types of constructors.
 */
import java.util.*;

public class constructor {

    int res=10;

    public constructor() {
        System.out.println("\nDefault Constructor called");
    }


    public constructor(int a,int b) {
        System.out.println("\nParameterized Constructor called");
        res = a + b;
        System.out.println("Addition : "+a+"  +  " +b+ " = "+res);
    }


    public constructor(constructor obj) {
        System.out.println("\nCopy Constructor called");
    }

    public static void main(String[] args) {

        constructor c1 = new constructor();
        constructor c2 = new constructor(10,20);
        constructor c3 = new constructor(c1);
        System.out.println("Accessing same value of result variable of c2 object : "+c3.res);
    }
}
```