

Program, which reads two numbers having same number of digits. The program outputs the sum of product of corresponding digits.(Hint Input 327 and 539 output $3 \times 5 + 2 \times 3 + 7 \times 9 = 84$)

```
import java.io.*;
class SumprodDg{
    int num1,num2,sumprod;
    SumprodDg(int n1,int n2){
        num1=n1;
        num2=n2;
        sumprod=0;
    }
    void dispDetails(){
        System.out.println("Numbers and sum of products are:");
        System.out.println("First Number: "+num1);
        System.out.println("Second number: "+num2);
        System.out.println("Result is :"+sumprod);
    }
    void calculate(){
        int temp1,temp2,dgn,dgm;
        temp1=num1;
        temp2=num2;
        while(temp1>0 || temp2 >0){
            dgn=temp1%10;
            dgm=temp2%10;
            sumprod=sumprod+dgn*dgm;
            temp1=temp1/10;
            temp2=temp2/10;
        }
    }
    public static void main(String args[]){
        Console console = System.console();
        System.out.println("Enter first number:");
        String nm1 = console.readLine();
        int lnm1 = nm1.length();
        int n1=Integer.parseInt(nm1);
        System.out.println("Enter second number:");
        String nm2 = console.readLine();
        int lnm2 = nm2.length();
        int n2=Integer.parseInt(nm2);
        if(lnm1 !=lnm2)
            System.out.println("Invalid number of digits");
        else{
```

```
SumprodDg spd = new SumprodDg(n1,n2);  
spd.calculate();  
spd.dispDetails();  
    }  
}  
}
```

Define a class named Pay with data members String name, double salary, double da, double hra, double pf, double grossSal, double netSal and methods: Pay(String n, double s) - Parameterized constructor to initialize the data members, void calculate() - to calculate the following salary components, and void display() - to display the employee name, salary and all salary components.

Dearness Allowance = 15% of salary

House Rent Allowance = 10% of salary

Provident Fund = 12% of salary

Gross Salary = Salary + Dearness Allowance + House Rent Allowance

Net Salary = Gross Salary - Provident Fund

Write a main method to create object of the class and call the methods to compute and display the salary details

```
.
import java.io.*;
public class Pay {
    String name;
    double salary,da,hra,pf,grossSal,netSal;
    Pay(String n,double sal){
        name=n;
        salary=sal;
    }
    void calc(){
        da=0.15*salary;
        hra=0.1*salary;
        pf=0.12*salary;
        grossSal=salary+da+hra;
        netSal=grossSal-pf;
    }
    void disp(){
        System.out.println("Employee details:");
        System.out.println("Employee Name: "+name);
        System.out.println("Employee salary:"+salary);
        System.out.println("Employee Dearness allowance:"+da);
        System.out.println("Employee House rent allowance: "+hra);
        System.out.println("Employee Provident fund:"+pf);
        System.out.println("Employee gross Salary:"+grossSal);
        System.out.println("Employee Net salary:"+netSal);
    }
    public static void main(String args[]){
        Console console = System.console();
        System.out.println("Enter the name:");
        String n=console.readLine();
        System.out.println("Enter the salary:");
        double sal = Double.parseDouble(console.readLine());
```

```
    Pay emp = new Pay(n,sal);  
    emp.calc();  
    emp.disp();  
}  
}
```

Program to create a class DISTANCE with the data members feet and inches. Use a constructor to read the data and a member function Sum () to add two distances by using objects as method arguments and show the result. (Input and output of inches should be less than 12.)

```
import java.io.*;
class Distance{
    int feet,inches;
    Distance(){
        Console console = System.console();
        System.out.print("Enter the feet: ");
        feet=Integer.parseInt(console.readLine());
        System.out.print("Enter the inches: ");
        inches=Integer.parseInt(console.readLine());
    }
    Distance(String s1){
        System.out.print("Object created for invoking method sum");
        feet=0;
        inches=0;
    }
    void sum(Distance d1,Distance d2){
        int ft,in;
        ft=d1.feet+d2.feet;
        in=d1.inches+d2.inches;
        if(in>=12){
            ft=ft+(in/12);
            in=in%12;
        }
        feet=ft;
        inches=in;
        System.out.println("Total feet and inches: ");
        System.out.println("Feet: "+feet);
        System.out.println("Inches: "+inches);
    }
    public static void main(String args[]){
        System.out.println("First object");
        Distance dist1=new Distance();
        System.out.println("Second object");
        Distance dist2=new Distance();
        System.out.println("Result object:");
        Distance dist3=new Distance("For result");
        dist3.sum(dist1,dist2);
    }
}
```

Program to create a class “Matrix” that would contain integer values having varied numbers of columns for each row. Print row-wise sum.

```
import java.util.Scanner;
class ArrayDemoVar{
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        int[][] twoD= new int[4][];
        twoD[0] = new int[3];
        twoD[1] = new int[5];
        twoD[2] = new int[4];
        twoD[3] = new int[2];
        int i,j,sum=0;
        for(i=0;i<twoD.length;i++){
            System.out.print("Enter "+i+" row elements: ");
            for(j=0;j<twoD[i].length;j++) {
                twoD[i][j]=sc.nextInt();
            }
        }

        for(i=0;i<twoD.length;i++){
            for(j=0;j<twoD[i].length;j++){
                sum=sum+twoD[i][j];
            }
            System.out.println("Sum of "+i+" row: "+sum);
            sum=0;
        }
        System.out.println();
    }
}
```

Program to extract portion of character string and print extracted string. Assume that 'n' characters extracted starting from mth character position.

```
import java.io.*;
class Extract{
    String strn1=new String();
    String strn2=new String();
    int len,n,m;
    Extract(){
        Console console = System.console();
        System.out.println("Enter the string:");
        strn1=console.readLine();
        len=strn1.length();
    }
    void ExtractChars(){
        int i=0;
        Console console = System.console();
        System.out.println("Enter the number of characters:");
        n=Integer.parseInt(console.readLine());
        System.out.println("From which character:");
        m=Integer.parseInt(console.readLine());
        if(n>len || (m+n)>len){
            System.out.println("Number of characters is more than string
length");
        }
        else{
            strn2=strn1.substring(m,(m+n));
            System.out.println("Substring is "+strn2 );
        }
    }
    public static void main(String args[]){
        Extract e1 = new Extract();
        e1.ExtractChars();
    }
}
```

Program to add, remove and display elements of a Vector

```
import java.util.Vector;
import java.io.*;
class Vectorad{
    public static void main(String args[])throws IOException{
        Vector v= new Vector();
        int ch;
        String name,age,wt,del;
        DataInputStream in = new DataInputStream(System.in);
        do{
            System.out.print("Enter Name:");
            name = in.readLine();
            v.addElement(name);
            System.out.print("Enter age:");
            age = in.readLine();
            v.addElement(age);
            System.out.print("Enter Weight: ");
            wt = in.readLine();
            v.addElement(wt);
            System.out.print("Do you want to continue?(1/0): ");
            ch=Integer.parseInt(in.readLine());
        }while(ch==1);
        System.out.println("Vector elements are: "+v);
        System.out.print("Enter vector element to be delete: ");
        del=in.readLine();
        v.removeElement(del);
        System.out.print("Present vector elements are: "+v);
    }
}
```