1. Define a class ‘product’ with data members pcode, pname and price. Create 3 objects of the class and find the product having the lowest price.

class Main

{

int pcode;

String pname;

double price;

double lowest;

void data(int c, String n, double p){

pcode=c;

pname=n;

price=p;

}

void display(){

System.out.println(pcode+"\t\t"+pname+"\t\t"+price);

}

static void findLowest(double price1,double price2, double price3){

if(price1<=price2 && price1<=price3){

System.out.println("\nProduct 1 is of the lowest price!");

}

else if(price2<=price1 && price2<=price3){

System.out.println("\nProduct 2 is of the lowest price!");

}

else{

System.out.println("\nProduct 3 is of the lowest price!");

}

}

public static void main(String[] args){

Main obj1 = new Main();

Main obj2 = new Main();

Main obj3 = new Main();

obj1.data(101,"Product\_1",100.0);

obj2.data(102,"Product\_2",128.40);

obj3.data(103,"Product\_3",790.00);

System.out.println("Product Information:\n Product\_Code\tProduct\_Name\tProduct\_Price");

obj1.display();

obj2.display();

obj3.display();

findLowest(obj1.price,obj2.price,obj3.price);

}

}

**OUTPUT**

**Product Information:**

**Product\_Code Product\_Name Product\_Price**

**101 Product\_1 100.0**

**102 Product\_2 128.4**

**103 Product\_3 790.0**

**Product 1 is of the lowest price!**

1. Read 2 matrices from the console and perform matrix addition.

**import java.util.\*;**

**public class Main {**

**public static void main(String args[])**

**{**

**int row, col,i,j;**

**Scanner in = new Scanner(System.in);**

**System.out.println("Enter the number of rows");**

**row = in.nextInt();**

**System.out.println("Enter the number columns");**

**col = in.nextInt();**

**int mat1[][] = new int[row][col];**

**int mat2[][] = new int[row][col];**

**int res[][] = new int[row][col];**

**System.out.println("Enter the elements of matrix 1");**

**for ( i= 0 ; i < row ; i++ )**

**{**

**for ( j= 0 ; j < col ;j++ )**

**mat1[i][j] = in.nextInt();**

**System.out.println();**

**}**

**System.out.println("Enter the elements of matrix 2");**

**for ( i= 0 ; i < row ; i++ )**

**{**

**for ( j= 0 ; j < col ;j++ )**

**mat2[i][j] = in.nextInt();**

**System.out.println();**

**}**

**for ( i= 0 ; i < row ; i++ )**

**for ( j= 0 ; j < col ;j++ )**

**res[i][j] = mat1[i][j] + mat2[i][j] ;**

**System.out.println("Sum of matrices:-");**

**for ( i= 0 ; i < row ; i++ )**

**{**

**for ( j= 0 ; j < col ;j++ )**

**System.out.print(res[i][j]+"\t");**

**System.out.println();**

**}**

**}**

**}**

**OUTPUT**

**Enter the number of rows**

**3**

**Enter the number columns**

**3**

**Enter the elements of matrix 1**

**1**

**2**

**1**

**2**

**1**

**1**

**1**

**1**

**3**

**Enter the elements of matrix 2**

**2**

**1**

**1**

**2**

**2**

**2**

**2**

**2**

**2**

**Sum of matrices:-**

**3 3 2**

**4 3 3**

**3 3 5**

1. **Add complex numbers**

**public class Main{**

**int r;**

**int i;**

**Main(int real,int img){**

**r=real;**

**i=img;**

**}**

**void display(){**

**System.out.println(r+"+"+i+"i");**

**}**

**static void add(int r1,int i1,int r2,int i2 ){**

**r1=r1+r2;**

**i1=i1+i2;**

**System.out.println("After Addition = "+r1+"+"+i1+"i");**

**}**

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

**Main first=new Main(5,4);**

**Main second=new Main(7,9);**

**System.out.println("Complex Numbers are:");**

**first.display();**

**second.display();**

**add(first.r,first.i,second.r,second.i);**

**}**

**}**

**OUTPUT**

**Complex Numbers are:**

**5+4i**

**7+9i**

**After Addition = 12+13i**

1. Read a matrix from the console and check whether it is symmetric or not.

**import java.util.\*;**

**public class Main {**

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

**Scanner sc = new Scanner(System.in);**

**System.out.println("Enter the Number of rows of the Matrix");**

**int row = sc.nextInt();**

**System.out.println("Enter the Number of Columns of the Matrix");**

**int col = sc.nextInt();**

**int matrix[][] = new int[row][col];**

**int i,j;**

**boolean state=true;**

**for(i=0;i<row;i++){**

**for(j=0;j<col;j++){**

**System.out.println("Enter the Element at M("+i+","+j+")");**

**matrix[i][j] = sc.nextInt();**

**}**

**}**

**for(i=0;i<row;i++){**

**for(j=0;j<col;j++){**

**if(matrix[i][j]!=matrix[j][i]){**

**state=false;**

**break;**

**}**

**}**

**}**

**if(state){**

**System.out.println("Matrix is Symmetric");**

**}**

**else{**

**System.out.println("Matrix is Antisymmetric");**

**}**

**}**

**}**

**OUTPUT**

**Enter the Number of rows of the Matrix**

**2**

**Enter the Number of Columns of the Matrix**

**2**

**Enter the Element at M(0,0)**

**1**

**Enter the Element at M(0,1)**

**0**

**Enter the Element at M(1,0)**

**0**

**Enter the Element at M(1,1)**

**1**

**Matrix is Symmetric**

1. Create CPU with attribute price. Create inner class Processor (no. of cores, manufacturer) and static nested class RAM (memory, manufacturer). Create an object of CPU and print information of Processor and RAM.

|  |
| --- |
| public class cpu{ |
|  | int price; |
|  | class processor{ |
|  | int cores; |
|  | String producer; |
|  | processor(int noC, String manu){ |
|  | cores=noC; |
|  | producer=manu; |
|  | } |
|  | void display(){ |
|  | System.out.println("\nProcessor info"); |
|  | System.out.println("No. of Cores = "+cores); |
|  | System.out.println("Manufacturer = "+producer+"\n"); |
|  | } |
|  | } |
|  | static class ram{ |
|  | int mem; |
|  | String manuf; |
|  | ram(int memory,String producer ){ |
|  | mem=memory; |
|  | manuf=producer; |
|  | } |
|  | void display(){ |
|  | System.out.println("\nRAM info"); |
|  | System.out.println("Memory = "+mem+" GB"); |
|  | System.out.println("Manufacturer = "+manuf+"\n"); |
|  | }} |
|  | public static void main(String[] args) { |
|  | cpu.ram obj1= new cpu.ram(8,"Intel"); |
|  | cpu obj2 = new cpu(); |
|  | cpu.processor obj3 = obj2.new processor(8,"Samsung"); |
|  | obj1.display(); |
|  | obj3.display(); |
|  |  |
|  | } |
|  | } |

**OUTPUT**

**RAM info**

**Memory = 8 GB**

**Manufacturer = Intel**

**Processor info**

**No. of Cores = 8**

**Manufacturer = Samsung**