**OBJECT ORIENTAL PROGRAMMING LAB**

**Experiment No.: 1**

**Aim**

**Program**

class Product{

String pcode, pname;

double price;

void details(){

System.out.println("PRODUCT DETAILS");

System.out.println("PCode : "+pcode);

System.out.println("PName : "+pname);

System.out.println("Price : "+price);

}

}

public class ProductDetails{

public static void main(String args[]){

Product p1 = new Product();

p1.pcode = "UT2000";

p1.pname = "Mountain Bike";

p1.price = 123999;

System.out.println("\nProduc 1:-");

p1.details();

Product p2 = new Product();

p2.pcode = "XMSH05HM";

p2.pname = "Mi Band 3";

p2.price = 1799;

System.out.println("\nProduc 2:-");

p2.details();

Product p3 = new Product();

p3.pcode = "EPSP5248";

p3.pname = "Camlin Scale";

p3.price = 5;

System.out.println("\nProduc 3:-");

p3.details();

if(p1.price<p2.price && p1.price<p3.price){

System.out.println("\n\nProduct with lowest price is :");

p1.details();

}

else if(p2.price < p3.price){

System.out.println("\nProduct with lowest price is :\n");

p2.details();

}

else

{

System.out.println("\nProduct with lowest price is :\n");

p3.details();

}

}

}

**Output Screenshot**

**Experiment No.: 2**

**Aim**

**Program**

class Student{

int stid,mark1,mark2,mark3;

String stname;

Student(){

stid=15;

stname="libiya";

mark1=100;

mark2=50;

mark3=20;

}

Student(int id,String name,int m1,int m2, int m3){

stid=id;

stname=name;

mark1=m1;

mark2=m2;

mark3=m3;

}

Student(int m1,int m2,int m3){

stid=33;

stname="Sree";

mark1=m1;

mark2=m2;

mark3=m3;

}

void display(){

int tot;

double avg;

tot=mark1+mark2+mark3;

avg=tot/3;

System.out.println("student id:" +stid );

System.out.println("student name:" +stname);

System.out.println("marks of English:" +mark1);

System.out.println("marks of Java:" +mark2);

System.out.println("marks of Maths:" +mark3);

System.out.println("\n");

}

}

public class StudentDetails{

public static void main(String args[]){

Student obj1=new Student();

obj1.display();

Student obj2=new Student(2,"ammu",30,40,50);

obj2.display();

Student obj3=new Student(60,70,80);

obj3.display();

}

}

**Experiment No.: 2**

**Aim**

**Program**

import java.util.\*;

class MatrixAddition{

public static void main(String[] args){

int row, col;

Scanner sc= new Scanner(System.in);

System.out.print("Enter the number of rows for the Matrices : ");

row= sc.nextInt();

System.out.print("Enter the number of columns for the Matrices : ");

col= sc.nextInt();

int[][] matrixA= new int[row][col];

int[][] matrixB= new int[row][col];

int[][] matrixSum= new int[row][col];

System.out.println("Enter the elements for the Matrix A : ");

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

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

matrixA[i][j]= sc.nextInt();

}

}

System.out.println("\n");

System.out.println("Enter the elements for the Matrix B : ");

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

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

matrixB[i][j]= sc.nextInt();

}

}

System.out.println("\n");

System.out.println("Matrix A is : ");

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

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

System.out.print(matrixA[i][j]+" ");

}

System.out.println("\n");

}

System.out.println("Matrix B is : ");

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

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

System.out.print(matrixB[i][j]+" ");

}

System.out.println("\n");

}

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

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

matrixSum[i][j]= matrixA[i][j] + matrixB[i][j];

}

}

System.out.println("Resultant of the Matrix Addition is : ");

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

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

System.out.print(matrixSum[i][j]+" ");

}

System.out.println("\n");

}

}

}

**Experiment No.: 3**

**Aim**

**Program**

import java.util.Scanner;

public class Symmetric

{

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

System.out.println("Enter the no. of rows : ");

int rows = sc.nextInt();

System.out.println("Enter the no. of columns : ");

int cols = sc.nextInt();

int matrix[][] = new int[rows][cols];

System.out.println("Enter the elements :");

for (int i = 0; i < rows; i++)

{

for (int j = 0; j < cols; j++)

{

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

}

}

System.out.println("Printing the input matrix :");

for (int i = 0; i < rows; i++)

{

for (int j = 0; j < cols; j++)

{

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

}

System.out.println();

}

if(rows != cols)

{

System.out.println("Not Square Matrix");

}

else

{

boolean symmetric = true;

for (int i = 0; i < rows; i++)

{

for (int j = 0; j < cols; j++)

{

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

{

symmetric = false;

break;

}

}

}

if(symmetric)

{

System.out.println("The given matrix is symmetric...");

}

else

{

System.out.println("The given matrix is not symmetric...");

}

}

sc.close();

}

**Experiment No.: 4**

**Aim**

**Program**

class Complex {

double real, img;

Complex(int r, int i) {

real = r;

img = i;

}

Complex addComp(Complex C1, Complex C2) {

Complex sum = new Complex(0, 0);

sum.real = C1.real + C2.real;

sum.img = C1.img + C2.img;

return sum;

}

}

class ComplexMain {

public static void main(String[] args) {

Complex C1 = new Complex(2, 3);

Complex C2 = new Complex(5, 6);

Complex C3 = new Complex(0, 0);

System.out.println("Complex number 1 : " + C1.real + " + " + C1.img + "i");

System.out.println("Complex number 2 : " + C2.real + " + " + C2.img + "i");

C3 = C3.addComp(C1, C2);

System.out.println("Sum of complex numbers : " + C3.real + " + " + C3.img + "i");

}

}