**OBJECT ORIENTED CONCEPT & PROGRAMMING**

**(SE-201) LAB-2**

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**Exercise:-**

**Q1:-**

#include<iostream>

#include<math.h>

using namespace std;

void distance\_formula (int x1, int y1, int x2, int y2){

    float distance;

    distance=sqrt(pow(x2-x1,2)+pow(y2-y1,2));

    cout<<"The value of distance formula is: "<<distance<<endl;

}

int main(){

int x1,y1,x2,y2;

cout<<"Enter the value of First Coordinate:";

cin>>x1>>y1;

cout<<"(X1,Y1)=("<<x1<<","<<y1<<")"<<endl;

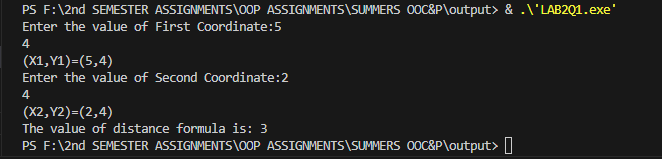
cout<<"Enter the value of Second Coordinate:";

cin>>x2>>y2;

cout<<"(X2,Y2)=("<<x2<<","<<y2<<")"<<endl;

distance\_formula (x1,y1,x2,y2);

}



**Q2:-**

#include<iostream>

using namespace std;

void print\_matrix(int matrix[3][3]){

    for (int i = 0; i < 3; i++)

    {

        for (int j = 0; j < 3; j++)

        {

            cout<<matrix[i][j]<<" ";

        }

        cout<<endl;

    }

}

void add\_matrix(int matrix1[3][3],int matrix2[3][3],int result[3][3]){

    cout<<"The sum of two matrix is "<<endl;

    for (int i = 0; i < 3; i++)

    {

        for (int j = 0; j < 3; j++)

        {

            result[i][j]=matrix1[i][j]+matrix2[i][j];

        }

    }

}

void mult\_matrix(int matrix1[3][3],int matrix2[3][3],int result[3][3]){

    cout<<"The product of two matrix is "<<endl;

    for (int i = 0; i < 3; i++)

    {

        for (int j = 0; j < 3; j++)

        {

            result[i][j]=0;

            for (int k = 0; k < 3; k++)

            {

                result[i][j]+=matrix1[i][k] \* matrix2[k][j];

            }

        }

    }

}

int main(){

    int matrix1[3][3],matrix2[3][3],sum[3][3],product[3][3];

    //Input first matrix

    cout<<"Enter the element of first matrix: "<<endl;

    for (int i = 0; i < 3; i++)

    {

        for (int j = 0; j < 3; j++)

        {

            cin>>matrix1[i][j];

        }

    }

    //Input Second matrix

    cout<<"Enter the element of second matrix: "<<endl;

    for (int i = 0; i <3; i++)

    {

        for (int j = 0; j <3; j++)

        {

            cin>>matrix2[i][j];

        }

    }

    cout<<"Matrix 1: "<<endl;

    print\_matrix(matrix1);

    cout<<"Matrix 2: "<<endl;

    print\_matrix(matrix2);

    add\_matrix(matrix1,matrix2,sum);

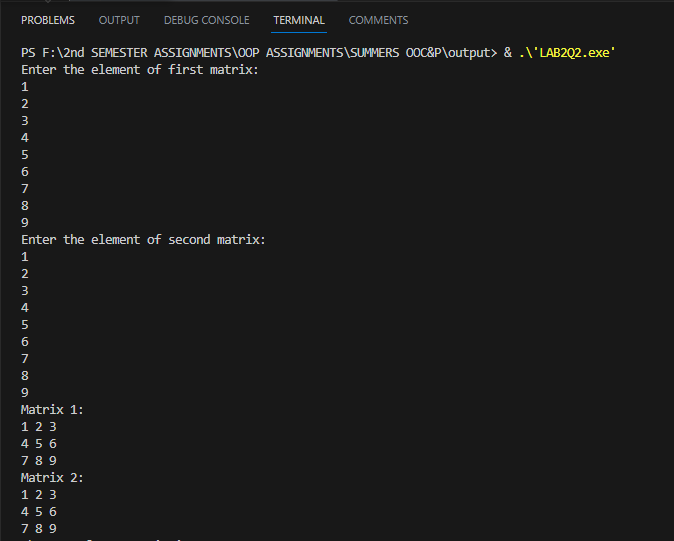
    print\_matrix(sum);

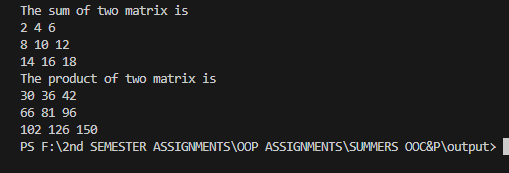
    mult\_matrix(matrix1,matrix2,product);

    print\_matrix(product);

    return 0;

}

****

****

**Q3 & Q4:-**

#include <iostream>

using namespace std;

struct student{

string first\_name;

string last\_name;

float score;

};

void display(student stud){

cout << "Student Fist name is " << stud.first\_name << endl;

cout << "Student Last name is " << stud.last\_name << endl;

cout << "Student Score is " << stud.score << endl;

}

int main()

{

student s1[2];

for (int i = 0; i < 2; i++)

{

cout << "Enter Student " << i + 1 << " First Name: ";

cin >> s1[i].first\_name;

cout << "Enter Student " << i + 1 << " Last Name: ";

cin >> s1[i].last\_name;

cout << "Enter Student " << i + 1 << " Score: ";

cin >> s1[i].score;

cout << endl;

}

for (int i = 0; i < 2; i++)

{

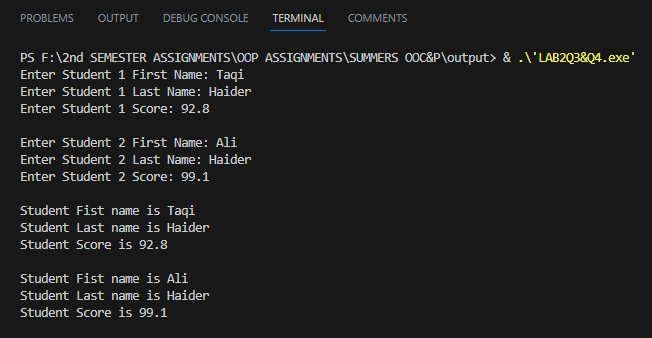
display(s1[i]);

cout << endl;

}

return 0;

}



**Q4:-**

#include<iostream>

using namespace std;

int main(){

int amount;

cout<<"Enter Amount In Rupees: ";

cin>>amount;

cout<<"1000's in the Given amount is: "<< amount/1000<<endl;

cout<<"500's in the Given amount is: "<< (amount%1000)/500<<endl;

cout<<"100's in the Given amount is: "<< ((amount%1000)%500)/100<<endl;

cout<<"50's in the Given amount is: "<< (((amount%1000)%500)%100)/50<<endl;

cout<<"10's in the Given amount is: "<<

((((amount%1000)%500)%100)%50)/10<<endl;

cout<<"5's in the Given amount is: "<<

(((((amount%1000)%500)%100)%50)%10)/5<<endl;

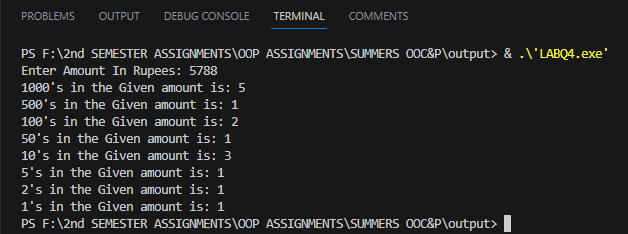
cout<<"2's in the Given amount is: "<<

((((((amount%1000)%500)%100)%50)%10)%5)/2<<endl;

cout<<"1's in the Given amount is: "<<

(((((((amount%1000)%500)%100)%50)%10)%5)%2)/1<<endl;

}

****

**Q5:-**

#include <iostream>

#include <string>

using namespace std;

struct address

{

    string house\_no;

    string city;

    int pin\_code;

};

struct employee

{

    string empId;

    string name;

    int salary;

    address a1;

};

void display(employee e)

{

    cout << "Employee Name is: " << e.name << endl;

    cout << "Employee ID is: " << e.empId << endl;

    cout << "Employee Salary is: Rs " << e.salary << endl;

    cout << "Employee Address is: " << e.a1.house\_no << ", " << e.a1.city << endl;

    cout << "Employee Pin Code is: " << e.a1.pin\_code << endl;

}

int main()

{

    employee e[2];

    for (int i = 0; i < 2; i++)

    {

        cout << "Enter Employee " << i + 1 << " ID: ";

        cin >> e[i].empId;

        cout << "Enter Employee " << i + 1 << " Name: ";

        cin >> e[i].name;

        cout << "Enter Employee " << i + 1 << " Salary: ";

        cin >> e[i].salary;

        cout << "Enter Employee " << i + 1 << " House Number: ";

        cin.ignore();

        getline(cin, e[i].a1.house\_no);

        cout << "Enter Employee " << i + 1 << " City: ";

        cin >> e[i].a1.city;

        cout << "Enter Employee " << i + 1 << " Pin Code: ";

        cin >> e[i].a1.pin\_code;

        cout << endl;

    }

    for (int i = 0; i < 2; i++)

    {

        cout << "Details Of Employee " << i + 1 << endl;

        display(e[i]);

        cout << endl;

    }

    for (int i = 0; i < 2; i++)

    {

        if (e[i].salary < 50000)

        {

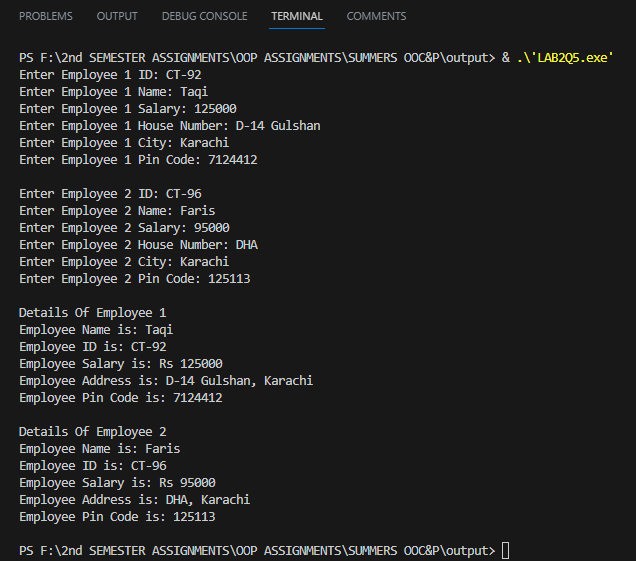
            cout << e[i].name << "'s salary has been increased as it was less than Rs 50,000 " << endl;

        }

    }

    return 0;

}



**Q6:-**

#include<iostream>

using namespace std;

void add(double \*x,double \*y){

    cout<<"The Sum of "<<\*x<<" + "<<\*y<<" = "<<\*x+\*y<<endl;

}

void sub(double \*x,double \*y){

    cout<<"The Subtraction of "<<\*x<<" - "<<\*y<<" = "<<\*x-\*y<<endl;

}

void div(double \*x,double \*y){

    cout<<"The Division of "<<\*x<<" / "<<\*y<<" = "<<\*x / \*y<<endl;

}

void mult(double \*x,double \*y){

    cout<<"The Multiplication of "<<\*x<<" x "<<\*y<<" = "<<\*x \* \*y<<endl;

}

int main(){

double x,y;

cout<<"Enter First Operand:"<<endl;

cin>>x;

cout<<"Enter Second Operand:"<<endl;

cin>>y;

add(&x,&y);

sub(&x,&y);

div(&x,&y);

mult(&x,&y);

}

