LAB TASK WEEK-3

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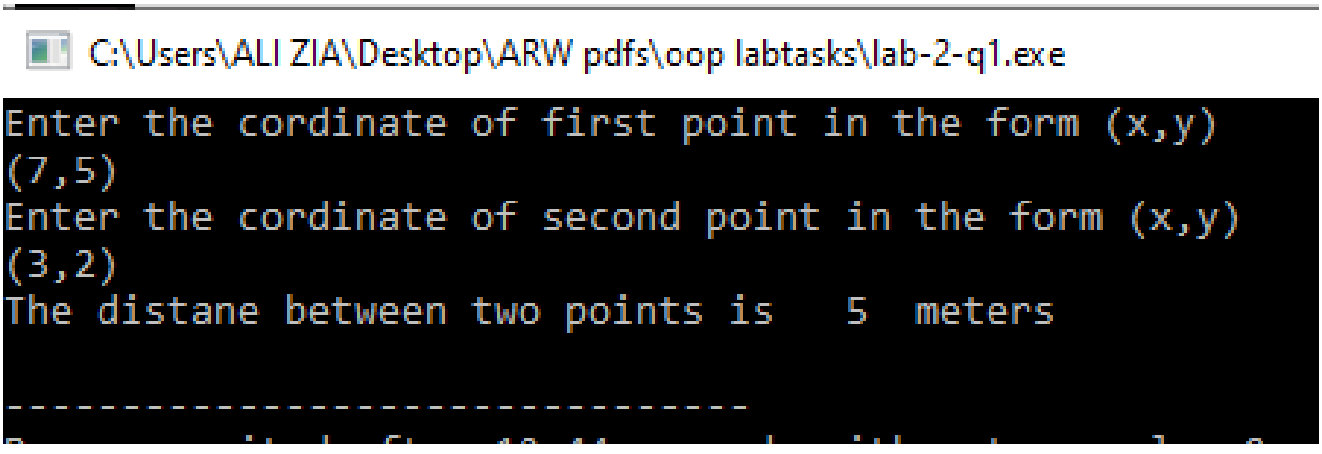
Q#1- Write a program to compute the length of the line segment connecting two points. For input the two numbers representing each point are entered in the form *(x,y)*. The parentheses and comma are read as character data and then discarded.

```
#include<iostream>
#include<conio.h>
#include<math.h>
using namespace std;

int main(){
    char a[5];
    char b[5];
    int l,m;
    double y,z;
    cout<<"Enter the cordinate of first point in the form (x,y)"<<endl;
    for(int i=0;i<5;i++){

        cin>>a[i];
    }
    cout<<"Enter the cordinate of second point in the form (x,y)"<<endl;
    for(int j=0;j<5;j++){

        cin>>b[j];
    }
    l=(b[1]-a[1])*(b[1]-a[1]);
    m=(b[3]-a[3])*(b[3]-a[3]);
    y=l+m;
    z=sqrt(y);

    cout<<"The distane between two points is   "<<z<<"  meters"<<endl;

    return 0;
}
```

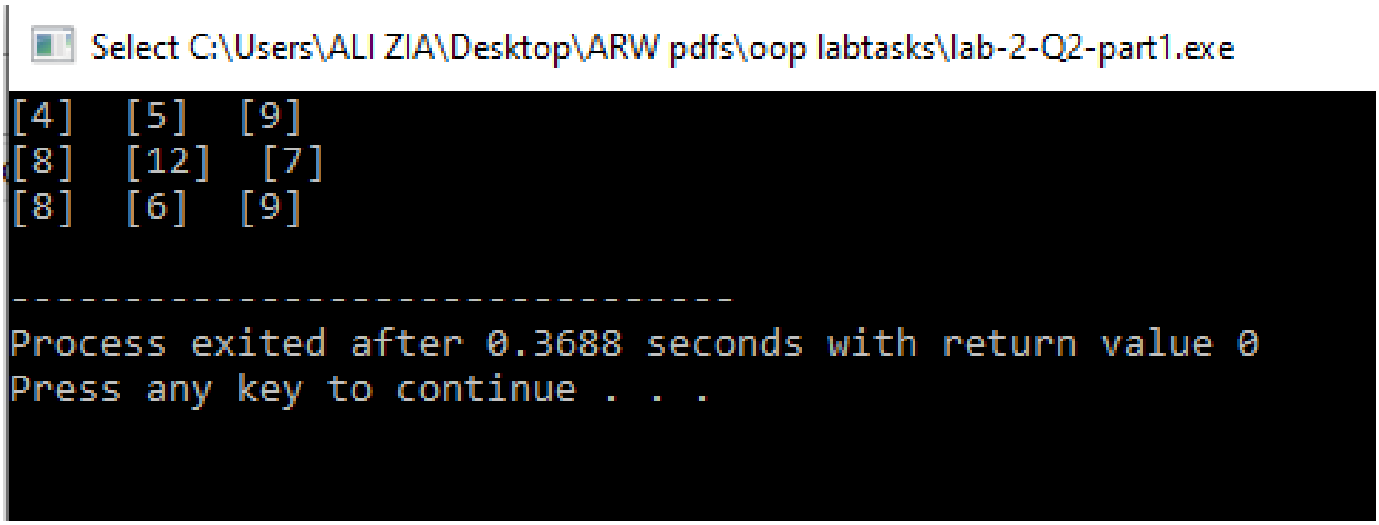
OUTPUT



Q #2. Take two matrix M1 and M2 as an input and perform the addition and multiplication of these two matrices.

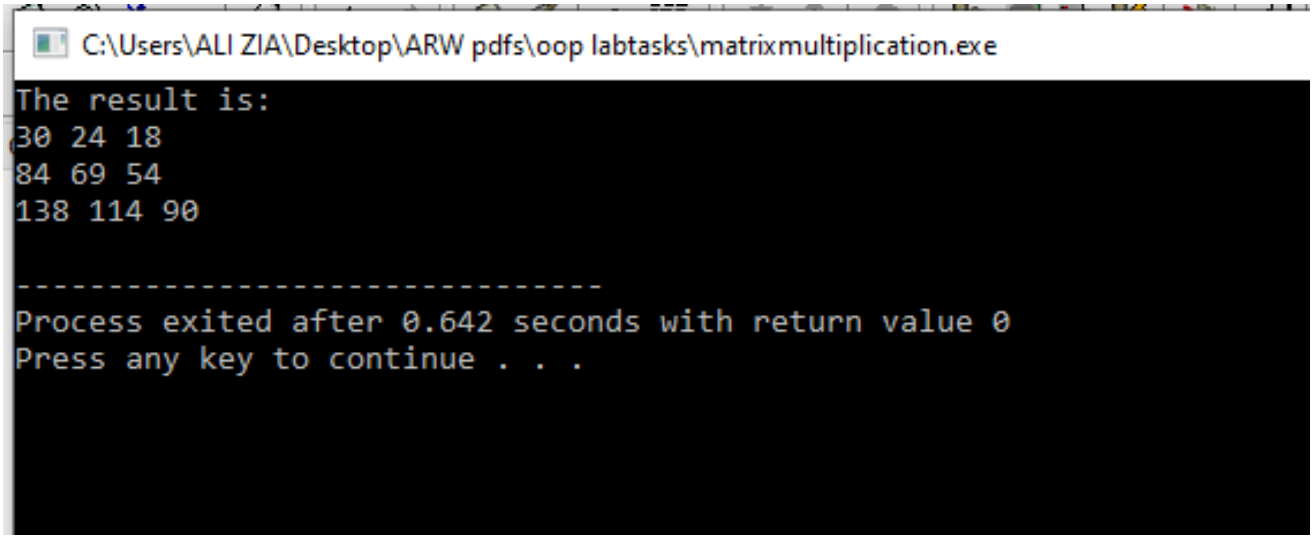
```
#include<iostream>
#include<conio.h>
using namespace std;
int main(){
    int a[3][3]={1,4,7,2,3,6,5,4,2};
    int b[3][3]={3,1,2,6,9,1,3,2,7};
    int c[3][3]={0,0,0,0,0,0,0,0,0};
 for(int i=0;i<=2;i++){
    for(int j=0;j<=2;j++){

        c[i][j]=a[i][j]+b[i][j];

    }
 }

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

        cout<<"["<<c[i][j]<<"]"<<"  ";//space between numbers

    }
    cout<<endl; //or new line after each row
 }

    return 0;

}
```

OUTPUT:



```cpp
#include <iostream>
#include<conio.h>>
using namespace std;
int main()
{
    int a[9][9] = { {1,2,3},{4,5,6},{7,8,9} };
    int b[9][9] = { {9,8,7},{6,5,4},{3,2,1} };
    int mul[9][9] = { {0,0,0},{0,0,0},{0,0,0} };
    int i, j, k;
    for (i = 0; i < 3; i++)
    {
        for (j = 0; j < 3; j++)
        {
            mul[i][j] = 0;
            for (k = 0; k < 3; k++)
            {
                mul[i][j] += a[i][k] * b[k][j];
            }
        }
    }
    cout<<"The result is:\t"<<endl;
    for (i = 0; i < 3; i++)
    {
        for (j = 0; j < 3; j++)
        {
            cout << mul[i][j] << " ";
        }
        cout << "\n";
    }
}
```

OUTPUT:



Q.3 Write a program that define structure to maintain student records, structure student should be consisting of the following attributes.

1. Student first name (max 20 characters)
2. Student last name (max 20 characters)
3. Student scores (float/double) e.g 85.4.

```
#include<conio.h>
#include<string.h>
#include<iostream>
using namespace std;
struct student{

     char firstname[20];
     char lastname[20];
     double score;


};
int main(){

     student s1;
     cout<<"Enter first name:\t";
     cin>>s1.firstname;
     cout<<"Enter Second name:\t";
     cin>>s1.lastname;
     cout<<"Enter score:\t";
     cin>>s1.score
     return 0;

}
```

Q.4. Pass the structure define in Q.3 to some function to move to display.

```
#include<conio.h>
#include<string.h>
#include<iostream>
using namespace std;
struct student{

     char firstname[20];
     char lastname[20];
     double score;

student showinfo(student s1){

     cout<<"The first name is:\t";
     cout<<s1.firstname<<endl;
     cout<<"The second name is:\t";
     cout<<s1.lastname<<endl;
     cout<<"The score is:\t"<<s1.score;//

}

};
int main(){

     student s1={"Ali","Zia Khan",84.5};
     cout<<"The details are"<<endl;
      s1.showinfo(s1);
     return 0;

}
```

OUTPUT:

```
C:\Users\ALI ZIA\Desktop\ARW pdfs\oop labtasks\lab2(act week3)Q4 char.exe
The details are
The first name is:      Ali
The second name is:     Zia Khan
The score is:   84.5
--------------------------------
Process exited after 0.2594 seconds with return value 0
Press any key to continue . . .
```

Q.5 Create nested structure . Firstly define Address structure and then call address Structure in Employee Structure and program will give some raise in salary ,if it is less than 50000

Address (house no, city, pin code)

Employee (empid,name,salary,addres

```
#include<conio.h>
#include<string.h>
#include<iostream>
using namespace std;
struct Address{

    char houseno[50];
    int pin;
    char city[50];
};
struct Employee{

    int empid;
    char emplname[50];
    float empsalary;
    Address empaddress;

};

int main(){
        Address a1;
    Employee e1;
    cout<<"Enter details \t"<<endl;

    cout<<"The employeee id  \t";
    cin>>e1.empid;
    cout<<"The employee name \t";
    cin>>e1.emplname;
    cout<<"The employee salary is\t";
    cin>>e1.empsalary;
    cout<<"The employee address is\t";
```

s)

```
    cin>>e1.empaddress.houseno;

    cout<<"The pin is\t";
    cin>>e1.empaddress.pin;
    cout<<"The city code is\t";
    cin>>e1.empaddress.city;
    if(e1.empsalary<50000){
      e1.empsalary+=5000;

    }
    else{
        e1.empsalary+=0;
    }

    cout<<"The details are\t"<<endl;

    cout<<"The employeee id is \t"<<e1.empid<<endl;
    cout<<"The employee name is\t"<<e1.emplname<<endl;
    cout<<"The employee salary is\t"<<e1.empsalary<<endl;
    cout<<"The employee address is\t"<<e1.empaddress.houseno<<endl;

    cout<<"The pin is\t"<<e1.empaddress.pin<<endl;
    cout<<"The city code is\t"<<e1.empaddress.city<<endl;


    return 0;

}
```

OUTPUT:

```
C:\Users\ALI ZIA\Desktop\ARW pdfs\oop labtasks\lab 2(actu week 3) Q5.exe
Enter details
The employeee id         101
The employee name        AfrazKhan
The employee salary is   45000
The employee address is 4598/D
The pin is       15456
The city code is         Karachi
The details are
The employeee id is      101
The employee name is     AfrazKhan
The employee salary is   50000
The employee address is 4598/D
The pin is       15456
The city code is         Karachi

--------------------------------
Process exited after 29.68 seconds with return value 0
Press any key to continue . . .
```