**Practical no.-**18

**Program no.-** 02

**Title:** Program to find distance between 2&3 points in 2D&3D

**Roll No.:** 76 **Batch-** C

**Code:**

#include <iostream>

#include <math.h>

using namespace std;

int main()

{

//function prototypes

float distance(float x1,float y1,float x2,float y2);

float distance(float x1,float y1,float x2,float y2,float z1,float z2);

float x1,x2,y1,y2,z1,z2;

float dist;

cout<<"Enter two co-ordinates of point-1:";

cin>>x1>>y1;

cout<<"Enter two co-ordinates of point-2:";

cin>>x2>>y2;

dist=distance(x1,y1,x2,y2);

cout<<"\nDistance between two 2D points:-"<<dist;

cout<<"\n\nEnter three co-ordinates of point-1:";

cin>>x1>>y1>>z1;

cout<<"Enter two co-ordinates of point-2:";

cin>>x2>>y2>>z2;

dist=distance(x1,y1,x2,y2,z1,z2);

cout<<"\nDistance between three 3D points:"<<dist;

return 0;

}

//function to find distance between two 2D points

float distance(float x1,float y1,float x2,float y2)

{float d;

d=sqrt(((x2-x1)\*(x2-x1))+((y2-y1)\*(y2-y1)));

return d;

}

//function to find distance between three 3D points

float distance(float x1,float y1,float x2,float y2,float z1,float z2)

{float d;

d=sqrt((pow((x2-x1),2))+(pow((y2-y1),2))+(pow((z2-z1),2)));

return d;

}

**OUTPUT-**

Enter two co-ordinates of point-1:100 100

Enter two co-ordinates of point-2:200 200

Distance between two 2D points:-141.421

Enter three co-ordinates of point-1:100 100 100

Enter two co-ordinates of point-2:200 200 200

Distance between three 3D points:173.205

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