**Q1. Serial chase:**

**Code:**

#include<bits/stdc++.h>

using namespace std;

int main(){

float xa=0,ya=0,xb=0,yb=10,xc=0,yc=20,xd=0,yd=30;

float dab,dbc,dcd,ddd;

float t,del;

t=0,del=0.002;

float va=30,vb=25,vc=20,vd=15;

dab=sqrt(pow(xa-xb,2)+pow(ya-yb,2));

dbc=sqrt(pow(xb-xc,2)+pow(yb-yc,2));

dcd=sqrt(pow(xc-xd,2)+pow(yc-yd,2));

ddd=sqrt(pow(xd-30,2)+pow(yd-50,2));

cout<<"xa\tya\txb\tyb\txc\tyc\txd\tyd\n";

while(t<=2.0){

xa=xa+va\*del\*(xb-xa)/dab;

ya=ya+va\*del\*(yb-ya)/dab;

xb=xb+vb\*del\*(xc-xb)/dbc;

yb=yb+vb\*del\*(yc-yb)/dbc;

xc=xc+vc\*del\*(xd-xc)/dcd;

yc=yc+vc\*del\*(yd-yc)/dcd;

xd=xd+vd\*del\*(30-xd)/ddd;

yd=yd+vd\*del\*(50-yd)/ddd;

dab=sqrt(pow(xa-xb,2)+pow(ya-yb,2));

dbc=sqrt(pow(xb-xc,2)+pow(yb-yc,2));

dcd=sqrt(pow(xc-xd,2)+pow(yc-yd,2));

ddd=sqrt(pow(xd-30,2)+pow(yd-50,2));

t+=del;

cout<<xa<<"\t"<<ya<<"\t"<<xb<<"\t"<<yb<<"\t"<<xc<<"\t"<<yc<<"\t"<<xd<<"\t"<<yd<<"\n";

if(dab<=0.005){

cout<<"A hit B\t time="<<t<<"\n";

break;

}

if(dbc<=0.005){

cout<<"B hit C\t time="<<t<<"\n";break;

}

if(dcd<=0.005){

cout<<"C hit D\t time="<<t<<"\n";break;

}

if(ddd<=0.005)

{

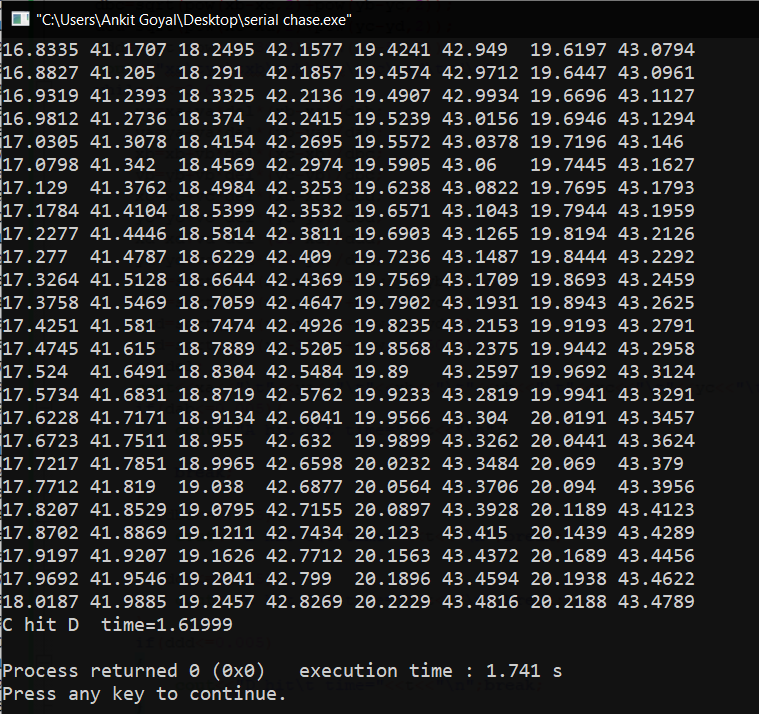
cout<<"D hit\t time="<<t<<"\n";break;

}

}

}

**Output:**

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