

**MANAV RACHNA INTERNATIONAL INSTITUTE OF RESEARCH & STUDIES**

**ASSIGNMENT-1: PURE PURSUIT PROBLEM**

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**7-CSB-2**

**AIM: Write a program in any of the language (C / C++ / Java / JavaScript/ Python / R / SciLab / MATLAB), to simulate the pure pursuit problem explained in the attached document**

**SOURCE CODE:**

```
package simulation;

public class Simulation {

    public static void main(String[] args) {

        double[] xb={70,90,99,108,116,125,133,141,151,160,169,179,180};
        double[] yb={0,-2,-5,-9,-15,-18,-23,-29,-28,-25,-21,-20,-17};

        double[] xf=new double[13];
        double[] yf=new double[13];
        xf[0]=0;
        yf[0]=50;

        double vf=20; //speed of fighter
        boolean status=true;
        double dist;

        for (int t=0;t<12;t++)
        {
            dist=Math.sqrt((xb[t]-xf[t])*(xb[t]-xf[t])+(yb[t]-yf[t])*(yb[t]-yf[t]));
            if(dist<=10)
```

```

{
    status=false;

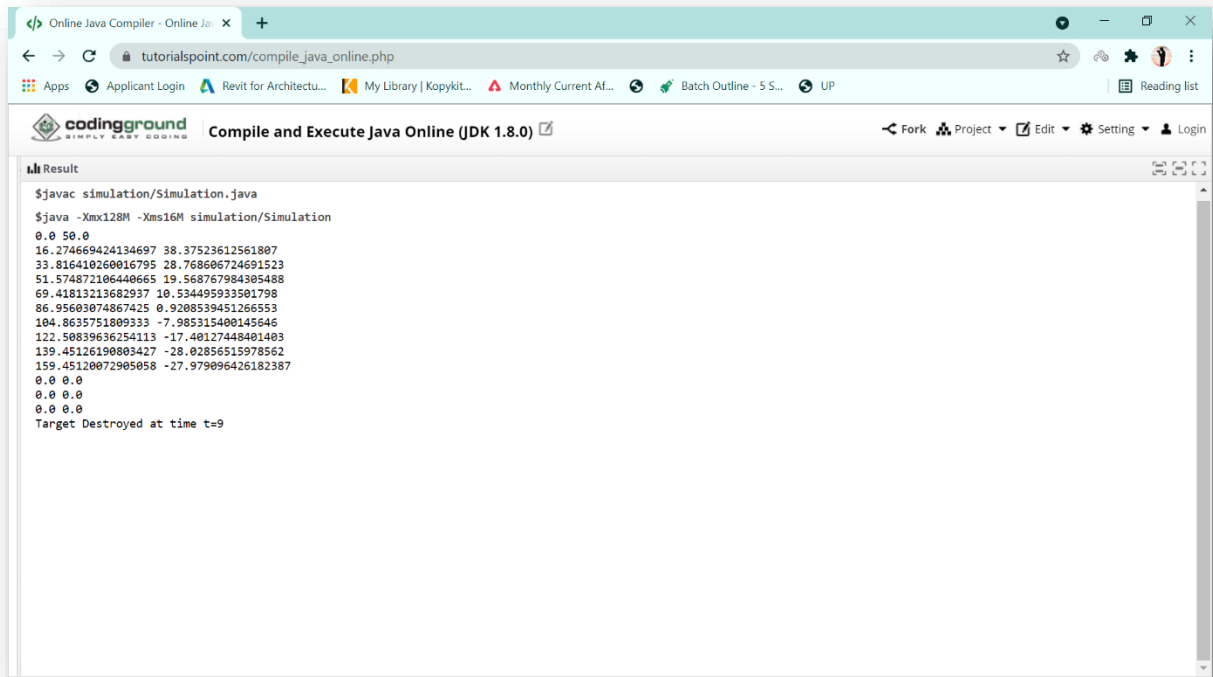
    for(int i=0;i<13;i++)
    {
        System.out.println(xf[i]+" "+yf[i]);
    }
    System.out.println("Target Destroyed at time t="+t);

    break;
}
yf[t+1]=yf[t]+vf*((yb[t]-yf[t])/dist);
xf[t+1]=xf[t]+vf*((xb[t]-xf[t])/dist);
}

if(status)
{
    for(int i=0;i<13;i++)
    {
        System.out.println(xf[i]+" "+yf[i]);
    }
    System.out.println("Target escaped!");
}
}
}

```

# OUTPUT



The screenshot shows a web browser window with the URL `tutorialspoint.com/compile_java_online.php`. The page title is "Compile and Execute Java Online (JDK 1.8.0)". The output area, titled "Result", displays the following text:

```
$javac simulation/Simulation.java
$java -Xmx128M -Xms16M simulation/Simulation
0.0 50.0
16.274669424134697 38.37523612561807
33.816410260016795 28.768606724691523
51.574872106440665 19.568767984305488
69.41813213682937 10.534495933501798
86.95603074867425 0.9208539451266553
104.8635751809333 -7.985315400145646
122.50839636254113 -17.40127448401403
139.45126190803427 -28.02856515978562
159.45120072905058 -27.979096426182387
0.0 0.0
0.0 0.0
0.0 0.0
Target Destroyed at time t=9
```