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

**ASSIGNMENT-1: PURE PERSUIT PROBLEM**

**NAME: MANSI GARG**

**ROLL NO: 1/18/FET/BCS/088**

**7CSB1**

**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:**

#include<stdio.h>

#include<conio.h>

#include<math.h>

int main()

{

int t=13,i,vf;

float d;

float xf[12],yf[12];

float xb[12]={80,90,99,108,116,125,133,141,151,160,179,180};

float yb[12]={0,-2,-5,-9,-15,-18,-23,-29,-28,-25,-21,-20,-17};

printf("xb:80,90,99,108,116,125,133,141,151,160,179,180\n");

printf("yb:0,-2,-5,-9,-15,-18,-23,-29,-28,-25,-21,-20,-17\n");

xf[0]=0;

yf[0]=50;

vf=20;

printf("xf[0] is %f and yf[0] is %f\n",xf[0],yf[0]);

printf("Velocity of fighter:%d\n",vf);

for(t=0;t<=12;t++) {

d=sqrt(pow((yb[t]-yf[t]),2)+pow((xb[t]-xf[t]),2));

if(d<10)

{

printf("\nCaught at %d mts and %f kms\n",t,d);

break;

}

else

{

xf[t+1]=xf[t]+(vf\*(xb[t]-xf[t])/d);

yf[t+1]=yf[t]+(vf\*(yb[t]-yf[t])/d);

}

}

if(t>12)

printf("Target Escaped\n");

getch();

return(0);

}

**OUTPUT:**

