/\*lagrange interpolation\*/

#include<stdio.h>

#include<math.h>

int main()

{

float x[10],y[10],temp=1,f[10],sum,p;

int i,n,j,k=0,c;

printf("how many record you will be enter: \n");

scanf("%d",&n);

for(i=0;i<n;i++)

{

printf("Enter the value of x%d\n",i);

scanf("%f",&x[i]);

printf("Enter the value of f(x%d)\n ",i);

scanf("%f",&y[i]);

}

printf("Enter x for finding f(x)\n");

scanf("%f",&p);

for(i=0;i<n;i++)

{

temp=1;

k=i;

for(j=0;j<n;j++)

{

if(k==j)

{

continue;

}

else

{

temp=temp\*((p-x[j])/(x[k]-x[j]));

}

}

f[i]=y[i]\*temp;

}

for(i=0;i<n;i++)

{

sum=sum+f[i];

}

printf("f(%.1f) = %f \n",p,sum);

}

