#include<stdio.h>

int main()

{

float x[10],y[10],d[10],xx,sum,w;

int n,i,j,r;

r=0;

xx=10.50+(r+2/100.);

printf("Enter the number of interpolating points\n");

scanf("%d",&n);

n=n-1;

printf("Enter the value of interpolating points\n");

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

{

printf("Enter the value of x[%d]=",i);

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

}

printf("\nEnter the values of y\n");

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

{

printf("Enter the value of y[%d]=",i);

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

}

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

{

d[i]=1;

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

{

if(j==i)

d[i]=d[i]\*(xx-x[i]);

else

d[i]=d[i]\*(x[i]-x[j]);

}

}

w=1;

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

w=w\*(xx-x[i]);

sum=0;

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

sum=sum+(y[i]/d[i]);

sum=w\*sum;

printf(" the value of f(%4.2f)=%2.5f",xx,sum);

return(0);

}

\\output\\

Enter the number of interpolating points

6

Enter the value of interpolating points

Enter the value of x[0]=10.5

Enter the value of x[1]=10.6

Enter the value of x[2]=10.8

Enter the value of x[3]=10.9

Enter the value of x[4]=11.1

Enter the value of x[5]=11.4

Enter the values of y

Enter the value of y[0]=0.36969

Enter the value of y[1]=0.43839

Enter the value of y[2]=0.49544

Enter the value of y[3]=0.50022

Enter the value of y[4]=0.48332

Enter the value of y[5]=0.42257

the value of f(10.52)=2.38645