```c
#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/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(10.50)=-1
```