```c
#include<stdio.h>
int main()
{
float x [10] , y[10] , d[10] [10], term, sum, xx;
int i,j,n, r;
r=3;
xx=1.30+ ( (r+1) /100.);
printf("enter the number of interpolating points \n");
scanf ("%d", &n) ;
n=n-1;
printf ("enter the interpolating points\n'");
for (i=0;i<=n; i++)
{
printf ("enter x[%d] =", i) ;
scanf ("%f", &x [i] ) ;
}
printf ("enter the functional values\n ");
for (i=0;i<=n;i++)
{
printf ("enter y[%d] =", i) ;
scanf ("%f", &y[i] ) ;
}
for (i=0;i<=n; i++)
d[i] [0] =y [i] ;
for (j=1;j<=n;j++)
{
for (i=0;i<=n-j;i++)
d[i] [j]= (d [i] [j-1] -d [i+1] [j-1])/ (x [i] -x [i+j]);
}
sum=y [0] ;
term=(xx-x [0]);
for (j-1;j<=n;j++)
{
sum=sum+term*d[0] [j];
term=term* (xx-x [0]);
}
printf ("the value of f(%4.2.f) =%7.5f \n", xx, sum);
return (0) ;
}
//*Output*//
```
Enter the interpolating points:
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enter the interpolating points
'enter x[0] =0.24
enter x[1] =0.30
enter x[2] =0.42
enter x[3] =0.50
enter x[4] =0.61
enter x[5] =0.69
enter x[6] =0.83
enter the functional values
 enter y[0] =0.21462
enter y[1] =0.28493
enter y[2] =0.39617
enter y[3] =0.43752
enter y[4] =0.49031
enter y[5] =0.55286
enter y[6] =0.69756
the value of f(1.55) =1.34000