```c
#include<stdio.h>

#include<conio.h>

int main()

{

        float x[10],y[10][10],sum,p,u,temp;

        int i,n,j,k=0,f,m;

        float fact1(int);

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

        scanf("%d",&n);

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

        {

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

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

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

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

        }

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

        scanf("%f",&p);

        for(i=1;i<n;i++)

        {

                for(j=0;j<n-i;j++)
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            {
                    y[i][j]=y[i-1][j-1]-y[i-1][j];
            }
    }
    printf("\n----------------------------------------------------------------");
    printf("\n x[i]\t y[i]\t y1(i)\t y2(i)\t y3(i)\t y4(i)");
    printf("\n----------------------------------------------------------------");
    for(i=0;i<n;i++)
    {
            printf("\n %.3f",x[i]);
            for(j=0;j<n-i;j++)
            {
                    printf(" ");
                    printf(" %.3f",y[j][i]);
            }
            printf("\n");
    }
    i=0;
    do
    {
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        if(x[i]<p && p<x[i+1])

        k=1;

        else

        i++;


}
while(k!=1);

f=i;

u=(p-x[f])/(x[f+1]-x[f]);

printf("\n\n u=%.3f",u);

n=n-i+1;

sum=0;

for(i=0;i<n-1;i++)

{

        temp=1;

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

        {

                temp=temp*(u-j);

        }

        m=fact1(i);

        sum=sum+temp*(y[i][f]/m);
```

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        }
        printf("\n f(%.2f) = %f ",p,sum);
        return 0;
}
float fact1(int a)
{
float fact=1;
if(a==10)
return 1;
else
fact=a*fact1(a-1);
return fact;
}
```