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#include<stdio.h>
#include<conio.h>

void main()
{
    static float x[30],y[30];
    int i,j,n,ord_pol;
    float inp_x,est_y,pol_val,basis;

    printf("\nEnter number of data points required --> ");
    scanf("%d",&n);
    printf("\nEnter your data \n");
    for(i=0;i<n;++i)
    {
        printf("\nEnter x[%d] = ",i);
        scanf("%f",&x[i]);

        printf("\nEnter y[%d] = ",i);
        scanf("%f",&y[i]);
    }
    printf("\nEnter a input x value for estimation --> ");
    scanf("%f",&inp_x);

    ord_pol=n-1;

    pol_val = 0;
    for(i = 0;i<=ord_pol;++i)
    {
        basis = 1;
        for(j=0;j<= ord_pol;++j)
            if(j!=i)
                basis = basis*(inp_x - x[j])/(x[i] - x[j]);
        pol_val = pol_val + basis*y[i];
    }

    est_y = pol_val;
    printf("\nThe input data as given below:\n\n");
    printf("\tX\tY\n\n");
    for(i=0;i<n;++i)
        printf("\t%5.3f\t%5.3f\n",x[i],y[i]);
    printf("\n\nThe estimated value for x = %5.3f is y = %5.3f",inp_x,est_y);
    getch();
}

```