```
#include<stdio.h>
#include<conio.h>
#define MAXN 100
#define ORDER 4
void main()
{       float ax[MAXN+1], ay [MAXN+1], diff[MAXN+1][ORDER+1], nr=1.0, dr=1.0,x,p,h,yp;
        int n,i,j,k;
        clrscr();
        printf("\nEnter the value of n:\n");
        scanf("%d",&n);
        printf("\nEnter the values in form x,y:\n");
        for (i=0;i<n;i++)
                scanf("%f %f",&ax[i],&ay[i]);
        printf("\nEnter the value of x for which the value of y is wanted: \n");
        scanf("%f",&x);
        h=ax[1]-ax[0];
        for (i=0;i<=n-1;i++)
                diff[i][1] = ay[i+1]-ay[i];
        for (j=2;j<=ORDER;j++)
                for(i=0;i<=n-j;i++)
                        diff[i][j] = diff[i+1][j-1] - diff[i][j-1];
        i=0;
        while (!(ax[i]>x))
                i++;
        i--;
        p = (x-ax[i])/h;
        yp = ay[i];
```

```
        for (k=1;k<=ORDER;k++)
        {
                nr *=p-k+1;
                dr *=k;
                yp +=(nr/dr)*diff[i][k];
        }
        printf("\nWhen x = %6.1f, corresponding y = %6.2f\n",x,yp);
        getch();
}
```