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

float f(float);

void main()
{
    static float y[30],x[30];
    float a,b,h;
    double IWC,sum;
    int n,i,m;

    clrscr();
    printf("*****THIS PROGRAM IMPLEMENTS weddle's RULE*****\n\n");

    /* Taking inputs */
    printf("Enter the value of a = ");
    scanf("%f",&a);
    printf("Enter the value of b = ");
    scanf("%f",&b);
    printf("Enter the number of intervals = ");
    scanf("%d",&n);
    m = 6*n;
    /* Calculate the data points */
    h = (b - a)/m;    //length of the interval

    for(i=0;i<=m;i++)
    {
        x[i] = a + i*h;
        y[i] = f(x[i]);
    }

    /* Calculate IWC */
    sum = y[0] + y[m];    // sum of first term and last term
    for(i=1;i<m;i+=6) sum = sum + 5 * y[i]; //sum of first series of terms
    for(i=2;i<m;i+=6) sum = sum + y[i]; //sum of second series of terms
    for(i=3;i<m;i+=6) sum = sum + 6 * y[i]; //sum of third series of terms
    for(i=4;i<m;i+=6) sum = sum + y[i]; //sum of fourth series of terms
    for(i=5;i<m;i+=6) sum = sum + 5 * y[i]; //sum of fifth series of terms
    for(i=6;i<m;i+=6) sum = sum + 2*y[i]; //sum of sixth series of terms

    IWC = (3*h/10)*sum;

    /*print result */
    printf("\n\nThe integration value IWC = %lf",IWC);
    getch();
}

float f(float x)
{

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}    return(4*x - 3*x*x);
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