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1: // C - Programm to calculate the integral using Trapezoidal Method.
2:
3: #include <stdio.h>
4: #include <math.h>
5:
6: //Definition of a function => f(x^3)
7: double f(double x){
8:     double s = x*x*x;
9:     return s;
10: }
11:
12: void main(){
13:     //Variables and their initialization.
14:     double a, b; int n, i;
15:     double tsum = 0.0;
16:
17:     //Inputs
18:     printf("Enter Lower Limit (a): ");
19:     scanf("%lf", &a);
20:     printf("Enter Upper Limit (b): ");
21:     scanf("%lf", &b);
22:     printf("Enter No. of strips (n): ");
23:     scanf("%d", &n);
24:
25:     //Calculation of width of rectangular strips.
26:     double h = fabs(b - a)/n;
27:     tsum += (h/2)*(f(a)+f(b));
28:
29:     //Calculation using for loop.
30:     for (i = 1; i < n; i++){
31:         tsum += (h/2)*(2*f(a + (i*h)));
32:     }
33:
34:     //Output
35:     printf("Required integral using Trapezoidal rule = %lf", tsum);
36: }

```