

```

1 // Numerical Integration using Simpson's Rule
2 // Given Function  $f(x) = 1/(1+x^2)$ 
3
4 #include <stdio.h>
5 #include <stdlib.h>
6 #include <math.h>
7 #include <conio.h>
8
9 //Defining the Integral
10 float f(float x)
11 {
12     float fx= 1/(1+x*x); //  $f(x)=1/(1+x^2)$ 
13     return fx;
14 }
15
16 void main()
17 {
18     printf ("## Numerical Integration using Simpson's Rule ##\n\n");
19
20     float xMin, xMax, area;
21
22     printf ("Please enter the lower limit of x : ");
23     scanf ("%f", &xMin);
24     printf("\nPlease enter the uppper limit of x : ");
25     scanf ("%f", &xMax);
26
27     printf("\n\n");
28
29     // Applying Simpson's Rule
30     area = ((xMax-xMin)/6) * (f(xMin)+f(xMax)+4*f((xMin-xMax)/2));
31
32     printf("Area of the curve under (%f,%f) is :: %f",xMin,xMax,area);
33
34     getch();
35 }

```