

```

1  /* main.c
2   * Ryan Jensen
3   * 2013-11-15 (created)
4   * 2013-11-20 (last modified)
5   *
6   * This program will call the secant_colebrook() function.
7   * This program passes parameters to that function.
8   * The function will calculate a friction factor from those parameters.
9   * The function will print the results to the user via the terminal.
10 */
11
12
13 // include the standard input/output header file
14 #include <stdio.h>
15 // include the header file containing the function that solves the
16 // colebrook equation for the friction factor f with the secant method.
17 #include "secant_colebrook.h"
18
19 // main program loop
20 int main(){
21
22     // this is used to point to the return values from the secant_colebrook function.
23     float *pointerToReturnValues = NULL;
24
25     // these are values that will be passed to the secant_colebrook equation.
26     float ReynoldsNumber = 8743;    // unitless
27     float diameter = 5;             // millimeters
28     float roughness = 0.0015;      // millimeters
29
30     // numerically evaluate the root of the colebrook equation for the friction factor
31     pointerToReturnValues = secant_colebrook(ReynoldsNumber, diameter, roughness);
32
33     // save the return values from the secant_colebrook function
34     float frictionFactor = *pointerToReturnValues;
35     float secantSuccess = *(pointerToReturnValues+1);
36
37     // print out information to the user
38     printf("Friction factor = %f\n",frictionFactor);
39     // print success data
40     if(secantSuccess == SECANT_COLEBROOK_SUCCESS){
41         printf("Success = true.\n");
42     }
43     else{
44         printf("Success = false.\n");
45     }
46
47     // end program
48     return 0;
49 }

```