Evaluate Pi Using Leibnitz Formula

```
1  // Evaluate Pi Using Leibnitz Formula
2
3  /* ================================================ *
4   *                  LEIBNIZ FORMULA                 *
5   *                                                  *
6   *             1       1       1       1            *
7   *  pi = 4 [ --- (-) --- (+) --- (-) --- (+) ... ] *
8   *             1       3       5       7            *
9   * ================================================ */
10
11
12 #include<iostream>
13 using namespace std;
14
15 int main()
16 {
17     double pi;
18     int n = 100000; // number of terms to consider
19
20     for(int i = 1; i <= n; i++)
21     {
22         int denominator = (2 * i - 1);
23         // (2i-1) is formula of odd number
24
25         if ( i % 2 == 1)
26         {
27             pi += 4.0 / denominator;
28         }
29         else
30         {
31             pi -= 4.0 / denominator;
32         }
33     }
34
35     cout << pi << endl;
36
37     return 0;
38 }
```

Output

```
1  3.14158
```