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//File name: alt_harmonic.cpp
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//Creation date: 2/25/2019
/*Synopsis: This program compute the alternating series from 1 to the
            whole number, n.
*/

#include <iostream>
#include <cmath>
using namespace std;

int main(){

  int n; // The whole number, n.
  double sum; // Sum of the alternating harmonic series.

  cout << "Enter n: ";
  cin >> n;

  while (n <= 0) {

    cout << "Value n must be 1 or greater. Try again: ";
      cin >> n;
  }

  double k; /*loop variable k for the increasing number of k+1 power
                and denominator k.*/

  for (k = 1; k <= n; k++){

    sum += pow(-1 , k + 1) / k;

  }

 cout << "The alternating series converges to " << sum;
 cout << endl;

  return 0;
}
```