Assg 02: Calculating PI

CSci 515 Spring 2015

2015-01-23

Dates:

Due: Tuesday February 3, by Midnight

Objectives

- Practice writing index controlled loops
- Become more comfortable with using digital computers for calculating mathematical expressions in C.
- Practice with arithmetic and type conversion in C.
- More practice with output formatting.
- Practice using real valued variables for mathematical calculations.
- Gain experience in translating formula into algorithmic procedures.

Description

Calculate the value of π from the finite series:

$$\pi = 4 - \frac{4}{3} + \frac{4}{5} - \frac{4}{7} + \frac{4}{9} - \frac{4}{11} \ldots$$

Print a table that shows the approximate value of π after each of the first N terms of this series. Your program should prompt the user for the value of N to determine how many values of the table of approximate values of π will be displayed. A session of using your program from the terminal should have exactly the following output:

Lab Submission

An eCollege dropbox has been created for this assignment. You should upload your version of the lab by the end of Tuesday 2/3 (midnight) to the dropbox named `Assg 02 Calculating PI`.

Requirements

Your programs must conform to the style and formatting guidelines given for this course. The following is a list of the guidelines that are required for the lab to be submitted this week.

- The file header and function header for your main function must be present, and filled out correctly.
- You must indent your code correctly and have no embedded tabs in your source code.
- You must not have any statements that are hacks in order to keep your terminal from closing when your program exits.
- You must have a single space before and after each binary operator.
- You must have a single blank line after the end of your declaration of variables at the top of a function, before the first code statement.

Failure to conform to any of these formatting and programming practice guidelines for this lab will result in a grade of 0 for the lab, and your program being returned with an indication of which of these items your program violates. Failure to follow other class/textbook programming guidelines may result in a loss of points, especially for those good programming practices given in chapters 1-5 of our textbook which you should have read by now.