Assignment 2 – Best Guess

CS244

Due: Feb 06, 2014, 11:59 PM

Late penalties will be as described in the syllabus.

Overview

Explore and acquaint yourself with Ubuntu Linux, g++, and the basics of C++ programming.
Topics: Input/Output, Functions, Conditionals, Loops, Constants, Random Numbers

General Objectives:

Explore and learn about:

main() function, using namespace std, input and output: cin and cout with
operators >> and <<, preprocessor directive: #include, do-loops, global
functions, proto-typing, constants, switch statements, if statements, pass by
value, variables and parameter, random numbers

Practice

Downloading Starter code off D2L
Compressing Code (tar and gzip)
Submitting Code to D2L

First Step

In Linux in your …/Documents/Programs folder
Create a folder named ***A02***

This is necessary as you will compress the A02 folder and its contents for submission.

Second Step Check D2L

There may be starter code for this assignment. Likely posted near where this document
was found. It may make things easier, but you are not explicitly required to use it.

The 1 file you will need for this assignment MUST be named:
BestGuess.cpp

with all your code located in BestGuess.cpp.

All files should have comments with the file name, your name, the last modified date, and a
description of the file contents. Each function should be appropriately commented in the
header and implementation files. The body of each function may need comments for the less
than obvious parts of the code (if any).

Main Function Description

- The goal is to make a program that allows the user to attempt to guess a randomly selected number from 1 to 100
    - The example program NumberGuesser may be useful as a reference
- The program will need to include the iostream, cstdlib and ctime files
- It should use the std namespace
- It MUST have 2 global functions (other than main())
    - Prototyped as follows:
        - int GetGuess();
        - int CalcRelation(int guess, int secretNum);
- It MUST have a global constant declared and initialized as follows:
    - const int QUIT_REQUEST = -999;
- Your program should first generate a random number from 1 to 100
- It will need to count the number of guesses tried by the user
- It must use a do-loop to repeatedly ask the user for a guess
    - terminating when the user requests to quit the program or guesses correctly
    - if guessed correctly the program should tell the user of the success and the number of tries it took
- Further details of the code inside the do-loop follow
    - Using a global function call,
      The program should ask the user to guess a number
        - Allowing the user to enter 0 (or negative numbers) to indicate the user's desire to quit
        - The function should return the number guessed
    - The program should then increment the number of tries attempted
    - Next, the program should call another global function storing the result in a local variable named: relation
      The function should determine the relationship between the randomly selected number and the number guessed (both sent as input parameters to the function)
        - The function should return 0 if the numbers match
        - Return -1 if the guess is less than the random number
        - Return 1 if the guess is greater than the random number
        - Return QUIT_REQUEST if the guess value is 0 or a negative number
    - Having established the relation between the 2 numbers the program should use a switch statement to notify the user of the result of the input guessed number
    - So the do-loop ends if relation == 0 or relation == QUIT_REQUEST
- The program should return 0 upon successful termination

Tester File

- N/A

makefile
N/A
To Compile at the Command Line Type: g++ BestGuess.cpp
To Run the executable created at the Command Line Type: ./a.out

Suggested Steps to Complete this Assignment

- Keep it simple.
- Use good variable names
- Make sure you put the file name, your name, the due date, and a program description in the comments at the top of the program file
- There is a starter file on D2L (not named as the file to turn in, so it does not get confused with the actual program you are writing)

Grading

100 points possible
       Various test inputs will be used by the grader.
       Comments and code formatting will be examined.
       Some (but not all) guaranteed ways to lose points include:
              Minus 90 if the program fails to compile
              Minus 90 if the program fails to run to completion
              Minus 90 for any infinite loops
              Minus 30 for failure to put name in comments at top of file
              Minus 30 for failure to put the due date in the comments at top of the file
              Minus 20 for no (or poorly written) program description
              Minus 10 for incorrect source filename

Bonus Points
       There may be in-class work that can be submitted for bonus points to be applied to this assignment. However, total score will not be increased beyond the 100 points possible.
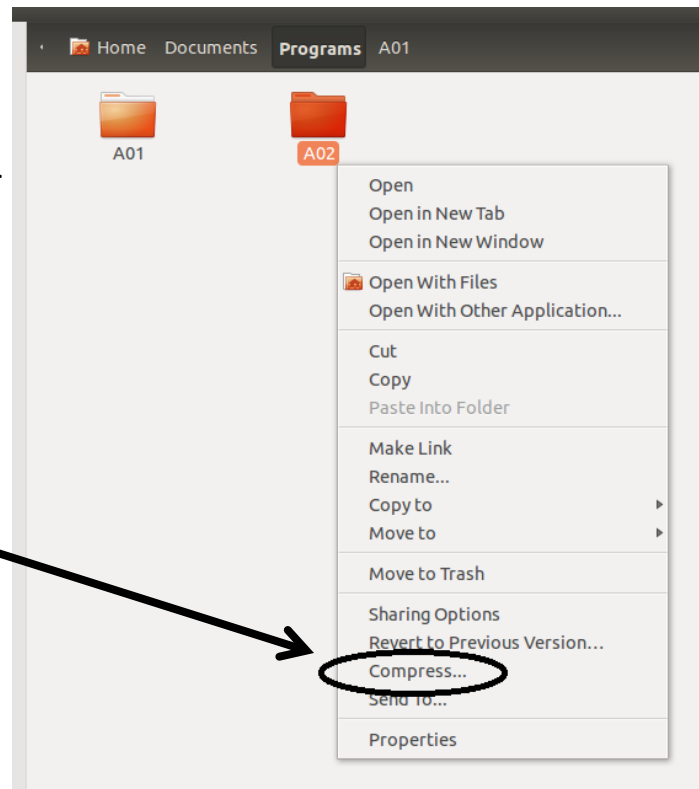
Turn-In Directions

Correctly submitting your work is worth 0 points,
but if not done correctly will likely result in nothing to grade.

Preparation

In Ubuntu Linux browse to your A02 folder
Make sure your source code files are in the folder
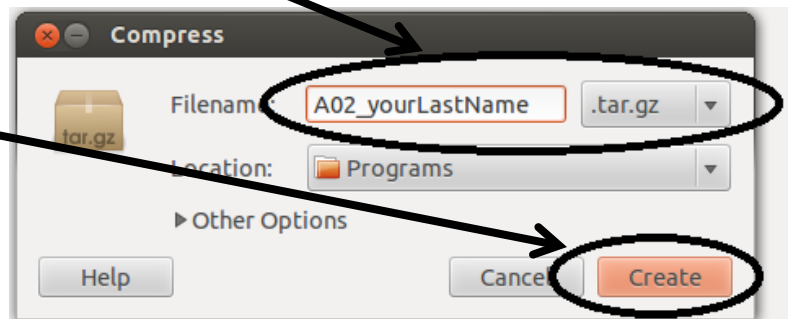
**Right click on the A02 folder,
Select Compress...**

Set the filename to be A02_*yourlastname*.tar.gz
where *yourlastname* is your last name

Example: if your last name is
Gollygee then the filename would be
A02_Gollygee.tar.gz

Click on the Create Button

This should create the file
named A02_ *yourlastname*.tar.gz

Submit

Submit the A02_ *yourlastname*.tar.gz file
to the correct course drop box in D2L

Home   Documents   **Programs**   A01

A01   A02

Open
Open in New Tab
Open in New Window

Open With Files
Open With Other Application...

Cut
Copy
Paste Into Folder

Make Link
Rename...
Copy to
Move to

Move to Trash

Sharing Options
Revert to Previous Version...
Compress...
Send To...

Properties

Compress

Filename   A02_yourLastName   .tar.gz

Location: Programs

▶ Other Options

Help   Cancel   Create