

Basics1 – Debugging C++

Due Date

- Assignment due on September 21, by Midnight
 - Grading the following Morning
- Submit program to perform in your student directory
 - Sub directory called: /Basics1/...
 - Fill out your **Basics1 Submission Report.pdf**
 - Check it out and submit to same directory
 - Cut and Paste the contents of **ReleaseResults.txt** into that report
 - Count how many tests have passed and submit enter into report
 - Enter the final Changelist number of your Basics submission

Goals

- C++ Proficiency
 - Real-world debugging and troubleshooting
 - Increasing C++ knowledge and understanding

Assignments

- General:
 - Refactor all programs to correctly work in Basics1 solution.
 - The expected answers are in each problem.
 - Follow the instructions for each problem
- Background
 - Each program has some error, but it's not obvious
 - All programs should compile with Warning level=4 with no compile errors or warnings
 - The big question you will be working on,
 - "Why doesn't my program work correctly?"
 - You will need to look at reference material (books, lectures, etc.)to understand why the code is behaving in an unexpected way.
 - You will need to step through the code, add break points and print statements to help you see what is going on wrong.
 - **DO NOT CHANGE** the "focus" of the program to get around the error.
 - Instead leave it and fix the subtle error.
 - If you rework the complete problem instead of fixing the error you are not learning the exercise.
- The solution is in 2013 visual studio.
 - You need to select a individual project to investigate
 - use the "Set as Startup Project" option to restrict one project at a time
 - Demo in class, to show you how to get this working.
 - Ask questions in Piazza if confused.
 - Project has to be 2013
 - if isn't the whole assignment is a zero
- Issues
 - Sometimes it works as I single step, but if I run the python test script it crashes or hangs.

- Yes, that's a bug!
 - " **What? How can that be?** "
- Try to fix, the debugger might be hiding something from you.
 - Dig deep figure it out.
 - Debuggers often do a lot of things that we are not aware of...
 - Start a Piazza thread with your discoveries
- Testing / Verification
 - I supplied the test scripts in /Scripts_to_RunTests directory
 - I will use for these scripts for the grading of Proficiency project
 - RunDebugTests.bat
 - RunReleaseTests.bat
 - Those functions generate a single DebugResults.txt and ReleaseResults.txt files to view the complete output in each of the respective directories.
 - They are there to try,
 - As is, there are errors,
 - Just hit ignore or cancel many times to pound through the script.
- This is for you, do your own work!
 - Feel free to talk with others about setup, version control
 - **DO NOT SHARE** coding ideas on this assignment
 - Do not copy your friend's code.
 - This is a competition!
 - If you don't understand....
 - Piazza, piazza, piazza
 - These basics is designed to shake out some understanding that you do or don't know. So it personal, each person will have their own issues...
 - Sharing doesn't help YOU!
 - Check in (perforce submit) the problems multiple times.
 - Have reasonable check-in comments
 - For this assignment, I would submit for each sub problem
 - So there are 10, I would expect at least 10 submissions.
 - YES - you think you are good, and can do this in one, but get into the habit now of multiple submissions.
- Make sure that your program compiles and runs
 - Warning level 4, some times that is not possible due to MS headers...
 - Your code should be squeaky clean.
- We are using Perforce
 - You should have received the document describing how to login.
 - Please look at the documentation on the class website
 - IP and Port of the server:
 - IP: 140.192.39.61
 - PORT: 1666
 - Submit program to perforce in your student directory
 - Sub directory called: /Basics1/...

Validation

Simple check list to make sure that everything is checked in correctly

- Did you do all 10 problems?
- Do they compile and run without any errors?
- Warning level 4 free?
- Submitted it into /Basics1 directory?
- Submitted the [*Basics1 - Submission Report.pdf*](#)
- Can you delete you local drive, regrab the Basics1 directory?
 - Is all the code there?

Hints

Most assignments will have hints in a section like this.

- Do many little check-ins
 - Iteration is easy and it helps.
 - Perforce is good at it.
- Look at the C++ programming language, Effective C++ books
 - A lot of good ideas in there.