C03: Quickstart Guide for Class C++ Programming Assignments

ETAMU Class

Objectives

- Give some examples of basic C++ usage for students who know how to program, but may not have used C++ much before, can use to get started quickly on class assignments.
- Introduce some of the still old/idiosyncratic syntax and usage of C++ multi-file projects.
- Look at modern I/O and string processing provided by C++ standard libraries.
- Quick review of C++ class syntax and object oriented programming idioms defined by C++.
- Introduction to the modern C++ standard template library, which provides for more high-level containers and data types comparable to modern languages, like resizable lists and map (dictionary) data types.

Description

The purpose of this project is to provide students who are familiar with programming in languages such as Java and Python, a few of the helpful things to know about writing programs in C++ for class assignments. There are several small examples meant to give a quick introduction to using C++ effectively for our classes.

The examples covered in this project include:

- Compiling, multi-file projects
- Standard I/O streams and using `cin` / `cout`
- Using C++ `string`s
- OO Programming and C++ `class`
- Basics of using the Standard Template Library (STL)
  - `vector` and `list` containers
  - `map`s
  - `queue`s, `stack`s and Priority Queues
  - Iterators and Algorithms

Additional Information

The following are suggested online materials you may use to get more information and help about learning the basics and more advanced aspects of programming in C++:

- cplusplus.com Tutorials and Reference Has both some okish tutorials on C++ and a pretty good reference for C and C++ librarys, including STL.
- Programiz.com Introduction to C++ has tutorials / courses you can pay for, but the free overviews are helpful quick starts for people who know how to program to pick up modern C++ and the STL