

Summary: In this weeks assignment you will be writing a program to solve Sudoku puzzles. You will need to provide a program that allows a user to enter a puzzle to be solved as a string and solve the puzzle. If you are not familiar with Sudoku the wikipedia page may help.

<https://en.wikipedia.org/wiki/Sudoku>

Requirements While most of the design of the program is up to you there are some requirements for your program.

- You must have a class to represent the puzzle
- You must overload the `std::ostream& operator<<` to pretty print the puzzle class
- You must overload the `std::istream & operator>>` to load the puzzle class from a string

The design of the string format and pretty printing format is up to you. Beyond this you must produce a running program that uses your class and any other helper functions or classes you need to solve sudoku puzzles.

You must use Catch2 to thoroughly test all your classes and as much functionality of your program as possible.

To complete your work you should use the following link to get a empty repo.

<https://classroom.github.com/a/Wtqw-cxS>

Recommended Algorithm While we do not require you to use any particular algorithm we recommend that you use the following strategy.

When faced with solving an puzzle with an empty square in order check if each of the values 1-9 can be placed in the square and if so make that change and try to solve the puzzle from there. If none are possible return unsolvable.

This approach works quite efficiently if the tests for the validity of solutions prune invalid numbers early and should solve most puzzles in a few seconds.

Design and Style:

Much like we have been using the Google Java Style Guide for the Java code we have been writing we will be using the Google C++ Style Guide for C++. The style guide can be found at the following.

<https://google.github.io/styleguide/cppguide.html>

In this assignment we will be asking you to at least comply with the naming rules which can be found here.

<https://google.github.io/styleguide/cppguide.html#Naming>