TDD in C++ Setup Instructions

Setting up Windows for C++

1. Install Visual Studio Code
   - https://code.visualstudio.com/download
2. Install Extensions:
   - Open VS Code and navigate to the Extensions view (click on the square icon on the sidebar or use `Ctrl+Shift+X`).
   - Search for and install the following extensions:
     - **C/C++ Extension Pack**: Popular extensions for C++ development in Visual Studio Code.
3. Install g++ compiler
   - Follow the instructions on this web page
   - https://code.visualstudio.com/docs/cpp/config-mingw
   - Step #1 download the installer from MSYS2 page https://www.msys2.org/
   - Continue with Steps #2 through #7
4. Install CMake for Windows
   - https://github.com/Kitware/CMake/releases/download/v3.29.0-rc1/cmake-3.29.0-rc1-windows-x86_64.msi
   - Run the *msi* file.
   - For the install options select *Add CMake to the system PATH for all users*
   - Accept defaults for the remaining settings.
5. Install Git for Windows
   - https://git-scm.com/downloads
   - Click `Download for Windows`
   - Download the latest version and install with the default settings.
6. Clone GoogleTest
   - https://github.com/google/googletest
   - Click `<>Code`
   - Copy HTTPS url
   - Open a terminal window and navigate to desired location (e.g. C:\GTest)
   - `git clone https://github.com/google/googletest.git`
7. Clone Catch2
   - https://github.com/catchorg/Catch2/tree/devel
   - Click `<>Code`
   - Copy HTTPS url
   - Open a terminal window and navigate to desired location (e.g. C:\Catch2)
   - `git clone https://github.com/catchorg/Catch2.git`

Test Project To Confirm Setup

1. Create a new project directory and change to that directory and open it in VS Code.

   ```
   mkdir firstApp && cd firstApp
   code .
   ```

2. Create a source code file named main.cpp that prints 'Hello World!' to the console.

   ```
   #include <iostream>
   int main()
   {
       std::cout << "Hello World!" << std::endl;
   }
   ```

3. Press the play button in the top right corner of the editor.
4. Choose *C/C++ g++.exe build and debug active file* from the list of detected compilers.
5. The output `Hello World!` should appear in the integrated *Terminal* of VS Code.
6. This confirms that Visual Studio Code and the C++ compiler are all set.