0.7 — Compiling Your First Program

Projects in an IDE

When developing in C++ using an Integrated Development Environment (IDE), you will typically create a **project**. A project:

- Holds all your source code, images, and data files.

- Saves IDE and compiler settings.

Each project corresponds to a single program.

IDE Options Explained

Different options in your IDE help manage the compilation and execution of your project. Here are the common options and their functions:

- **Build:**

  - Compiles all modified code files in the project or workspace/solution.
  - Links the object files into an executable.
  - If no code files have been modified since the last build, this option does nothing.

- **Clean:**

  - Removes all cached object files and executables.
  - Ensures that the next time the project is built, all files will be recompiled, and a new executable will be produced.

- **Rebuild:**

  - Performs a **clean**, followed by a **build**.

- **Compile:**

  - Recompiles a single code file, regardless of whether it has been cached previously.
  - Does not invoke the linker or produce an executable.

- **Run/Start:**

    - Executes the executable from a prior build.

    - Some IDEs (e.g., Visual Studio) will automatically perform a **build** before running to ensure you are executing the latest version of your code.

    - Others (e.g., Code::Blocks) will simply execute the previously built executable without rebuilding.