

Makefile task

Task Description

You are required to create a `Makefile` for the “Led Sequence v.1” project. The `Makefile` should handle the compilation and linking process.

Requirements

1. Create a `Makefile` named “`Makefile`” in the root directory of the project.
2. The `Makefile` should have at least two targets: “`all`”, “`flash`”, and “`clean`”.
3. The “`all`” target should be the default target that compiles the source code and generates the binary executable.
4. The `Makefile` should handle dependencies and recompile only the necessary files when changes occur.
5. The `Makefile` should use appropriate compiler flags and options for compilation, such as enabling warnings and specifying the output directories, e.g., `-Wall` and `-Werror`.
6. The “`clean`” target should remove all generated object files and the binary executable from the “`build`” and “`bin`” directories, respectively.
7. The `Makefile` should provide a way to clean the project by invoking the “`clean`” target.
8. The `Makefile` must make use of make automatic variables, pattern rules (explicit and implicit), and built-in functions.
9. The flash rule must program the MCU using `avrdude`.

Submission

You should submit the `Makefile` you created along with your led sequence project. Ensure that the `Makefile` is named `Makefile` and is placed in the root directory of the project.

Note 1: `Makefiles` are typically used in Unix-like environments, such as Linux or macOS, but you can also use tools like GNU Make on Windows. Make sure to install WSL properly.

Note 2: Don’t submit any object or executable file

Note 3: Don’t submit any editor files like the ones located in `.vscode`