

SOFTWARE ENGINEERING 3XA3

Software Engineering Practice & Experience: Software Project Management

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Laboratory 12 Make

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This lab will introduce Make. Make is a program building tool that controls the generation of executables of a program from the source files. When the number of files increases in a project, Make saves lots of compilation time.

Components of Lab

1. Introduction to Make
2. Make Exercises

Details

- Make sure you are using a Unix-based command-line interpreter.
- Work through the Software Carpentry lab exercise on Make. This is available at <https://swcarpentry.github.io/make-novice/>
- Read through the tutorial on Make:
<https://www.youtube.com/watch?v=aEMr3VfIzb4>
- Makefile Rules:
https://www.tutorialspoint.com/makefile/makefile_rules.htm
- Makefile dependencies:
https://www.tutorialspoint.com/makefile/makefile_dependencies.htm
- Makefile macros:
https://www.tutorialspoint.com/makefile/makefile_macros.htm
- Mainly Makefile contains a set of rules used to build an application. These rules can be divided to three main parts: the target, its prerequisite files, and the command(s) to perform:

*target: prerequisites
commands*

The target is the file that must be made. The prerequisite files are those files that the target depends on them and must be compiled before the target can be created. The commands are those shell commands that needs to be executed to create the target from the prerequisites.

- An example for Java makefile:
`https://www.cs.swarthmore.edu/~newhall/unixhelp/javamakefiles.html`
- An example for Python makefile:
`http://www.wellho.net/resources/ex.php4?item=y212/makefile`
- Once you are comfortable with Make, write a makefile for LaTeX so that it is possible to use Make to build your documents.

For The TAs (Students can ignore this section)

Before the conclusion of the lab, please make sure that you have tested each student to verify that they understand the basics of make. For students that understand the basics, please give them a grade of 1 for the first Lab Exercise.