

# 01-C Build Tools

## Introduction

The build tools are for a programmer what the tools are for a carpenter. Without them and without proper knowledge about the tools together with experience in using them you pretty much can't do your job as programmer.

This lecture introduces you to the C compiler, makefile and some other tools.

## Purpose

The student shall be able to use the C compiler in a way that makes her/him more productive.

## Requirements

- OS
- Filesystem
- Filetype

## Videos

Watch the videos in the following order:

- C-Build-Tools-small.webm - general introduction to C Build Tools
- C-ppc-small.webm - how to halt after preprocessing is performed
- C-assembler-small.webm - how to see the produced assembler code
- C-compileonly-small.webm - how to compile only (create object files) - not create program
- C-link-small.webm - how to link object files into a program binary)
- C-tools-file-small.webm - basic use of the program `file`
- C-tools-objdump-small.webm - basic use of the program `objdump`
- C-tools-strace-small.webm - basic use of the program `strace`
- C-tools-time-small.webm - basic use of the program `time`
- C-tools-make-I-small.webm - short intro to makefiles

## Reading instructions

The C programming language, Kernighan & Ritchie

- 4.11 The C preprocessor

Wikipedia:

- [https://en.wikipedia.org/wiki/C\\_preprocessor](https://en.wikipedia.org/wiki/C_preprocessor)

## Goal

The student shall be aware of and able to perform the following with a C compiler:

- halt after preprocessing, understand and analyse the result
- halt after producing assembler code, briefly understand and analyse the result
- only compile, not link

The student shall be aware of and able to perform the following with a C Make:

- write a simple Makefile to manage 2-3 files

## Exam instructions

All exercises are examples of what may appear on the exam.