

# Memory Tools

## Introduction

Even though many of us programmers try hard, really hard, to write programs without any memory problems we still write programs with bugs in them. Some do it more often, some almost never. Having a tool to assist you when writing code is a must for many of us.

A memory tools will be your friend and in ths lecture we will introduce you to it.

## Purpose

Get the student familiar with a memory tools. Apart from an ordinary debugger it is useful to know a tool specifically dedicated to finding memory leaks.

## Requirements

compiler gdb

## Videos

Watch the videos in the following order:

- 01-c-mem-tools-intro-small.webm - intro to concepts
- 02-c-mem-tools-code-small.webm - overview of the source code we will let valgrind work on
- 03-c-mem-tools-buffer-small.webm - find (and fix) a buffer overflow
- 04-c-mem-tools-leak-small.webm - find (and fix) a mem leak
- 05-c-mem-tools-leak2-small.webm - find (and fix) a forced memory error

## Reading instructions

Wikipedia links:

- [https://en.wikipedia.org/wiki/Memory\\_debugger](https://en.wikipedia.org/wiki/Memory_debugger)
- [https://en.wikipedia.org/wiki/Memory\\_leak](https://en.wikipedia.org/wiki/Memory_leak)

## **Goal**

The student shall be able to explain what a memory debugger is and understand the basics of how to use it.

## **Exam instructions**

The student shall be able to explain what a memory leak tool is, when it can/shall be applied and what it reports (not how).