# Computer Systems Organization : Recitation 06 - Debugging

`gdb` is the GNU project debugger. It can be used with several programming languages including C.

In this sequence of exercises, you will go through the debugging process of several programs. In some cases, you may see the problem right away without even running the debugger. This should not be a reason to skip the exercises. The purpose of these exercises is to make sure that you know how to use the debugger, not to test if you can find problems with these specific simple programs.

To use the debugger, you must login to CIMS. There is a way to get `gdb` to work on OS X but this requires changing your system settings and we cannot provide any support for this. `gdb` should work straight out of the box on Linux systems.

## Exercise 1

This exercise goes through a debugging process of a program step by step. It introduces some basic `gdb` instructions: `break`, `run`, `next`, `step`, `print`, `continue`.

## Exercise 2

This exercise goes through a debugging process of a program that allocates memory during runtime. It shows how to print memory addresses, and introduces `display` and `x` instructions.

## Exercise 3

This exercise goes through our previous simple linked list example. It introduces a few ways of examining memory of the running program.

More: - GDB debugger tutorials and resources