CSE 2421: Systems I

Low-Level Programming and Computer Organization

Y86-64 Utility Programs

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Introduction

- To use Y86-64 utility programs, you will have to first issue the subscribe command on the Linux machine and choose the Y86SIM option. You will need to log out and log back in again after doing that and then you will be able to use Y86-64 utility programs.
- You should also have the file seq+.tcl in your working (current) directory when using ssim Y86-64 utility program. You can get that file using the following Linux command:

  cp /usr/local/sim/seq/seq+.tcl seq+.tcl
- A number of Y86-64 assembly codes were also generated during the build process and those files can be found in /usr/local/sim/y86-code.
- For "Guide to Y86-64 Processor Simulators" follow the following link: http://csapp.cs.cmu.edu/3e/simguide.pdf

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Assembler yas and Simulator yis

- YAS is the Y86-64 assembler. This program takes a Y86-64 assembly code file with extension .ys and generates a file with extension .yo.
  - Example: yas xyz.ys
  - The generated file xyz.yo contains an ASCII version of the object code, such as that shown on two slide later.
- YIS is the Y86-64 instruction simulator. YIS simulates the execution of the .yo program at a Y86-64 machine-level according to Y86-64 instruction set architecture and then prints changes to any registers or memory locations on the terminal.
  - Example: yis xyz.yo

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ssim Simulator

- ssim is the GUI version of the Y86-64 processor simulator. It is invoked with an object code filename on the command

  ssim –g xyz.yo
- The simulation program starts up and creates three windows:
  - The first window is the main control panel and it contains buttons to control the simulator as well as status information about the state of the processor,
  - The second window shows the object code file that is being executed by the simulator. The center has an asterisk (*) to indicate which instruction is currently being simulated,
  - The third window shows the contents of the memory. It shows only those locations between the minimum and maximum addresses that have changed since the program began executing.

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