Project 1: Installing and Running Nachos

Readings: Chapter 1 – 3, Nachos Tutorial
Due date: Jan. 23rd, 11:30pm
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In this project, you will install, configure and execute Nachos 5.0j on your system following the instructions in Chapter 2 of the Nachos tutorial. We strongly encourage you to use Eclipse as your integrated development environment as it will greatly expedite the development process. Note this project should be done INDIVIDUALLY on your chosen platform.

The test directory includes C source files (.c files) and Nachos user program binaries (.coff files). The binaries can be built while in the `test` directory by running `make` providing that you have the right MIPS cross-compiler for your platform.

In order to compile the test programs, you need a MIPS cross-compiler. This is already installed on the instructional machines as mips-gcc (see the Makefile in the test directory for details). If you are not using an instructional machine, you must download the appropriate cross-compiler and set the ARCHDIR environment variable accordingly (See Nachos Tutorial Chapter 2.3).

1 Tasks

I. (50%) After installing the Nachos distribution, run the program nachos (in the proj1 subdirectory) for a simple test of the installed packages. This causes the methods of `nachos.threads.ThreadedKernel` to be called.

The ThreadedKernel constructor is invoked to create the Nachos kernel.

- This kernel is initialized with `initialize()`.
- This kernel is tested with `selfTest()`.
- This kernel is finally "run" with `run()`. For now, `run()` does nothing, since the kernel is not yet able to run user programs.

Trace the execution path following the exercise at the end of Chapter 3 in the tutorial and answer the questions therein.

II. (50%) Download `matmult50.c` from the course page and include in the test directory. Make necessary changes to the Makefile in the test directory. Compile it to a .coff program. Note that we cannot execute the program for now since the Nachos implemention is not yet complete.

2 Submission

Include your answers in Task I and the binary matmult50.coff file in a Zip or tar ball and submit through Avenue DropBox. Hand in a paper copy of your report in class.