McMaster University
Department of Computing and Software
Dr. W. Kahl

SFWR ENG 3BB4 — Software Design III — Concurrent System Design

18 January 2007

All tutorials will be in ITB-237!

Exercise 1.1 — `sget`

In many courses, slide files are named in some predictable format, for example slide1.pdf, slide2.pdf, … One may want to have a tool to download such slides easily. Write an executable shell script sget to solve this problem. `sget` takes four arguments:

– *prefix* — the string before the number
– *suffix* — the string after the number
– *first* — the starting number
– *last* — the last number

(a) The first line of the script will be `#!\bin\bash`, and the last line will be `exit 0`. Explain why these two lines are necessary, and what the consequences of their absence are.

(b) Use man wget to read user documentation.

(c) Test your script with the invocation

```
./sget www.cas.mcmaster.ca/~caos2/3BB4/test .txt 1 3
```

(d) Try different ways to produce all the URLs that are passed to wget — using `for` or while loops is not the only option.

Exercise 1.2 — Setting Environment Variables

(a) Where does the shell find executables?

(b) Find out how environment variables influence where man finds manual pages!

(c) Find out how environment variables influence where ld finds object code libraries!

(d) Find out what the option "`--prefix`" to the `configure` script of "autotooles" software packages does. For example:

– Get ***adns*** from http://directory.fsf.org/GNU/adns.html.
– Unpack, read README and INSTALL.
– Read the output of "`./configure --help`"
– Install ***adns*** into the GNU subdirectory of your home directory.
– Inspect the newly installed files and directories.

(e) Write a shell function addtopath that, when called with a path prefix, updates the envorionment of the calling shell so that executables, manual pages, and libraries installed at the standard locations inside prefix are found by the shell, the man command, and the linker.

Note: Not all software distributions will contain all three kinds of material!