Homework 1

Implementing a simple UNIX utility

Outcomes

- Write short scripts in 3 interpreted languages.
- Emulate some functions of a simple UNIX utility.
- Handle standard output and command line arguments.

Rubric

- 3 points for hw1.pl
- 3 points for hw1.py
- 4 points for hw1.sh

Description

The UNIX utility 'cat' is used to concatenate files and print the results to standard output. It is quite widely used for these purposes both in interactive terminal sessions and in scripts. In this assignment, you will implement part of the functionality of cat - not all of it ('man cat' and you will see options like "suppress repeated empty output lines" and "number non-empty output lines") - just enough parts that you'll get a feel for handling the various forms of input and output that scripts need and produce. This information is fundamental, and will be used throughout the quarter in various ways. It's useful to see how to implement it using different languages - in this case, Bash, Perl, and Python.

Note: for the python version of the utility, please use Python 3.X

Specifications

- The script must read a list of files given as command line arguments and print all of the content of those files to standard output, in the order they were input. For example, 'hw1.pl a.txt b.cpp c.h' would print the contents of the files a.txt, b.cpp, and c.h to standard output in that order.
- The script should just exit without printing anything if no command line arguments are given.
- For purposes of this specification, you do not need to do any handling of exceptional conditions such as files not existing, not being readable, or being something other than a regular file (for example, a directory or device file).
- You can use 'cat' in Bash. For Python and Perl, please use the built in language features for opening and reading files, and for outputting to standard output - don't simply exec the 'cat' command.

This specification above should be implemented in 3 scripting languages:
- Bash - hw1.sh
- Perl - hw1.pl
- Python - hw1.py

Submission

A compressed (tarred and gzipped) file named 'hw1.tgz; that contains these 3 files:
- hw1.pl - implementation in Perl
- hw1.py - implementation in Python
- hw1.sh - implementation in Bash

This tarball should be submitted to the Homework 1 iLearn submission.