CS 3030 Introduction

Scripting Languages

Why CS 3030

Why use scripting languages

- Scripts
  - Solve repetitive management problems
  - Collect complex arguments and shorten commands
- Recommended by the industrial advisory committee
  - Bash
  - Perl
  - Python
  - “Gate keeper” items on your resume
What Is A Scripting Language

A characterization but not a definition

- Interpreted
  - Often easy to port
  - Slow
- Weakly typed
- Variables need not be defined
- Direct access to high-level operating system commands / utilities
- Often very powerful, occasionally annoyingly awkward

Scripting Languages

Lutz and Ascher

- Shell tools
  - Tools for coding operating system-oriented tasks
  - Often launched from console command line
  - Processing text files
  - Launching other programs
- Control language
  - Glue layer
  - Building
  - Testing
  - Customizing
- Sequencing
- “A simple language for coding tasks quickly”
The type Command

Locating executables

- **bash builtin command**
  - With no options, indicate how each name would be interpreted if used as a command name.
- **type bash**
  - bash is /bin/bash
- **type perl**
  - perl is /usr/bin/perl
- **type python**
  - python is /usr/bin/python
- **type -t type**
  - builtin

Bash

Running bash scripts

- **The default shell on icarus (Linux generally)**
- **Directly:** `% echo Hello World`
- **Create file with your favorite editor (like vi):**
  `% bash file`
- **Automatically executable**
  - Add the comment as the first line: `#!/bin/bash`
    - Will often work without the comment but do add it
  - Make file executable: `% chmod a+x file`
  - `file`
Perl

Running Perl scripts

- **Directly:**
  
  ```perl
  % perl -e 'print "Hello World\n";
  ```

- **Create file a editor:**
  
  ```
  % perl file
  ```

- **Automatically executable**
  
  - Add the comment as the first line: `#!/usr/bin/perl`
    - Will often work without the comment but do add it
  - Make file executable: `% chmod a+x file`

Python

Running Python scripts

- **Directly:**
  
  ```python
  % python
  >>> print 'Hello World'
  Ctrl-D
  ```

- **Write the script with a text editor:**

- **Automatically executable**
  
  - Add the comment as the first line: `#!/usr/bin/python`
  - Make file executable: `% chmod a+x file`
  - `file`