OS Programming

Shell Script Programming

First Bash Script

In this class, we are using the bash shell, so we are writing bash scripts. That is, bash interprets our scripts.

Write a script called "hello.sh" that prints "hello!\n"

Shell Scripts

- Shell scripts contain sequences of commands
  - Interpreted instead of compiled
    - Interpreted by the shell (bash in our case)
    - Scripts are not as fast as compiled programs
- Scripts start with the "sha-bang" line.
  - identifies the interpreter of the script
  - e.g. **#!/bin/bash**
- Scripts can be made executable
  - Example: `chmod u+x` *`filename`*
  - Can be run in by:
    - preceding script name with ./
    - providing an absolute path to file to the script

Second Bash Script

Write a script called "bio.sh" that prints "Today is " followed by the day of the week followed by ", and you are here: " followed by the current working directory followed by ".\n" *(dot newline)*

For example, if today is Monday and the current working directory is "/home/username", then running ./bio.sh should print

```
Today is Monday, and you are here: /home/username.
```

Shell Scripts vs Java

Feature	Bash Scripting	Java
Variables	✓	✓
Arithmetic Operators	✓	✓
Strings	✓	✓
Arrays	✓	✓
Conditionals	✓	✓
Loops	✓	✓
Functions	✓	✓
Classes/Objects	X	✓

Any command line utility can used in a bash script. This makes scripting extremely useful for automating tasks.

Summary

- Shell scripts are files that contain shell commands.
- Shell scripts are not compiled into machine code. They are interpreted instead.
- Shell scripts can be made to be executable with the **chmod** command.