Unix Shell

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Objective

- A program that allows you to interact with the OS through the command-line
- Make a shell that allows you to navigate your file system
- Make a shell that executes any CLI program on your computer (located in the PATH)

How does the project connect to the class?

- The shell was coded entirely in the C programming language
- The program makes use of concurrency through fork and exec command
- Makes use of POSIX libraries to implement key functionality such as changing directories and supporting shell globbing

Challenges and Solutions

- Parsing commands given by user was challenging at times
  - Solution: Allocate a large enough buffer for string and check for invalid commands and alert user about invalid command supplied.
- Commands did not recognize tilde as home folder and did not support globbing
  - Solution: Use the word expansion header to expand tilde as the home folder and expand wildcard patterns.

Future Goals

- Portability to multiple operating systems.
  - Simply adjust Makefile for compilation on windows and linux
- Handling of pipes in the shell through file descriptors manipulation
- Support for shell redirections