

SMASH Interactive Shell

Team

- Group B1
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Project Idea

We are going to create an interactive shell called SMASH (Simple Mouse Alternative Shell). This shell will at a minimum contain the following components:

- Support for the following commands: cd, pwd, export, echo
- Ability to run programs in the foreground or background
- Option to supply inputs/outputs to programs
- Able to see currently running processes
- Set and view environment variables
- Extra Credit: Run programs on separate thread using –thread command

Topics From Class

The following class topics will be included in this project:

- Creating and forking processes
- Setting/using environment variables
- Piping input/output
- Opening/closing files
- Effective error handling
- Multi-threaded programming (Extra credit)

Timeline

- Week 1:
 - Review previous lab dealing with CASH shell
 - Rewrite basic functionality from previous lab, streamlining code
- Week 2:
 - Add ability to pipe input/output
 - Allowing setting/viewing of environment variables
- Week 3:
 - Finish handling piping and environment variables
 - Add support to see running processes
 - Present

Rubric

The grading rubric will be as follows:

| Part | Unsatisfactory | Satisfactory | Beyond Satisfactory |
|--|---|---|--|
| Commands | Doesn't support all the proposed commands [0-25pts] | Supports all the proposed commands and they're all working [26-50pts] | Added even more commands not originally proposed [5pts per command, max 20pts] |
| Piping | Piping input/output to files isn't working but was close [0-25pts] | Piping works as expected and is similar to BASH [26-50pts] | Ability to pipe output to multiple files using separate threads [20pts] |
| Environment Variables and Processes | Only one of the two work, might be partially working [0-25pts] | Both setting/viewing environ variables and seeing running processes work [26-50pts] | Can pass additional command with PID to kill processes [10pts] |
| Extra Credit | N/A | Working -thread command that runs given process on separate thread [20pts] | Ability to supply multiple programs to -thread command [10pts] |
| Demo & Report | Rushed report, very little information. Boring presentation [0-20pts] | Good presentation and report [21-50pts] | Amazing presentation with interactive demo. Extensive report [51-60pts] |