**King Fahd University of Petroleum & Minerals**

**Information & Computer Science Department**

#### ICS-431 Operating Systems

#### Lab Project

**Date**

**Duration**

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| **Due Date (Tentative)** | **Duration** | **Semester** | **Submission** |
| 06-08 December 2020 | 6 weeks | 201 | CS50 Sandbox/IDE + Demo |

Write a self-contained shell program that implements a basic shell functionality as follows:

1. Implement your own utilities for common UNIX Shell utilities. In particular, the following utilities should be implemented:
   1. cat (mycat) [Example],
   2. ls (myls) [Example],
   3. clear (myclear) [Example> this is interesting],
   4. cp (mycp) [Not in the example],
   5. mv (mymv) [Example],
   6. rm (myrm) [Example],
   7. cd (mycd) [Not in the example],
   8. mkdir (mymkdir) [Example],
   9. pwd (mypwd) [Example],
   10. head (myhead) [Not in the example],
   11. tail (mytail) [Example].
2. [Additional Functionality] Your shell might (optionally) also support the following features:
   1. run Linux commands
   2. output redirection

(use of a redirection operator redirects output to a file)

* 1. pipes using the “|” operator

(use your own operator e.g. an uppercase I)

* 1. background run of commands using the “&” operator

(use your own operator)

The project is supposed to be done individually.

The submission deadline is week of 06/08 December 2020 (Lab time).

SUBMISSION DETAILS: Will be provided later.