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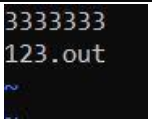
Project 2 Report:

Phase 2:

- Create a struct User with members loginid, process id and a pipe (file descriptors)
- Initialize an array of users struct (say 10 or 20 users)
- Parse input command and get loginid.
  If loginid not present in array of struct then add User to the array of User struct, init the struct with user details.
- When adding user itself create a directory loginid.dir
- If the incoming input is a command, then fork and store pid for the user with the given loginid and store it in the pid member in that user's struct
- If the command is a cmd then open a file loginid.out in append mode, change directory to loginid.dir and write to file using system() and change directory to main path (cd ..)
- If the command is pipe then call method pipeline with params:
  1. Array of commands after splitting using ';',
  2. No of commands
- -In pipeline method, use one pipe to connect parent and child process through fork().
  -In the child process write each command using system() call
  -In parent process read and store the result in a temp file descriptor that can be used in the child process as input for next command -Finally write output to loginid.out
- If logout then close the pipe of the corresponding user. Empty the user struct to -1 or null accordingly • If incoming command has 0 then exit

```
root@DESKTOP-BP2IKII:/mnt/c/Users/ashwi/Desktop/OSProject2# ./UM

ucmd> 123 login

ucmd> 123 cmd echo 3333333

Shsh processing 123 cmd echo 3333333

Shsh process (123, 1941) has been created by 1940

ucmd> 222 login

ucmd> 222 cmd echo hello222

Shsh processing 222 cmd echo hello222

Shsh process (222, 1943) has been created by 1940

ucmd> 123 pipe ls; grep 1

Shsh processing 123 pipe ls; grep 1

Shsh process (123, 1941) has been created by 1940

ucmd> 123 logout
Shsh process (123, 1941) terminates
ucmd> 0
root@DESKTOP-BP2IKII:/mnt/c/Users/ashwi/Desktop/OSProject2#
```

123.out-> 

222.out->