Concepts of Operating System

Assignment 2

Part A

What will the following commands do?

1. echo "Hello, World!"

display “Hello world”

1. name="Productive"

assigns “Productive” to variable name

1. touch file.txt

create a file with name file.txt

1. ls -a

list down all files in current directory

1. rm file.txt

remove file.txt

1. cp file1.txt file2.txt

copy file1.txt to file2.txt

1. mv file.txt /path/to/directory/

move file.txt to new directory

1. chmod 755 script.sh (r-4 w-2 x-1)

changes the script.sh file owner permission to rwx, group r\_x, other to r\_x

1. grep "pattern" file.txt

find “pattern” text in file.txt

1. kill PID

kill the process with pid PID

1. mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt

makes directory with name mydir then change directory to mydir then create file with name file.txt in mydir saves "Hello, World!" in file.txt and print the content of file.txt file that is "Hello, World!"

1. ls -l | grep ".txt"

list all the files with .txt

1. cat file1.txt file2.txt | sort | uniq

list all uniq content from file1.txt file2.txt

1. ls -l | grep "^d"

find “^d”

1. grep -r "pattern" /path/to/directory/

find all “pattern” from the that directory and also from subdirectory also

1. cat file1.txt file2.txt | sort | uniq –d

print duplicate content from fil1 file2

1. chmod 644 file.txt

give user owner read and write , group read and othe read permission

1. cp -r source\_directory destination\_directory

copy souce\_directoy to destination\_directory recursively

1. find /path/to/search -name "\*.txt"

finds all the .txt file from seach

1. chmod u+x file.txt

add execute permission to user owner

1. echo $PATH

print the value of variable PATH

Part B

Identify True or False:

1. ls is used to list files and directories in a directory.

TRUE

1. mv is used to move files and directories.

TRUE

1. cd is used to copy files and directories.

FALSE

1. pwd stands for "print working directory" and displays the current directory.

PRESENT WORKING DIRECTORY & SHOWS PATH OF PWD

1. grep is used to search for patterns in files.

TRUE

6. chmod 755 file.txt gives read, write, and execute permissions to the owner, and read and execute

permissions to group and others.

TRUE

7. mkdir -p directory1/directory2 creates nested directories, creating directory2 inside directory1

if directory1 does not exist.

TRUE

8. rm -rf file.txt deletes a file forcefully without confirmation.

TRUE

Identify the Incorrect Commands:

1. chmodx is used to change file permissions.

CHMOD IS USED

1. cpy is used to copy files and directories.

CP IS USED

1. mkfile is used to create a new file.

fals

1. catx is used to concatenate files.

Cat is use

1. rn is used to rename files.

Mv is use

Part C

shell script

part D

INTERVIEW QUESTION

Part E

1. Consider the following processes with arrival times and burst times:

| Process | Arrival Time | Burst Time |

|--------- |--------------|------------|

| P1 | 0 | 5 |

| P2 | 1 | 3 |

| P3 | 2 | 6 |

Calculate the average waiting time using First-Come, First-Served (FCFS) scheduling.

2. Consider the following processes with arrival times and burst times:

| Process | Arrival Time | Burst Time |

|---------|------------- -|------------ |

| P1 | 0 | 3 |

| P2 | 1 | 5 |

| P3 | 2 | 1 |

| P4 | 3 | 4 |

Calculate the average turnaround time using Shortest Job First (SJF) scheduling.

3. Consider the following processes with arrival times, burst times, and priorities (lower number

indicates higher priority):

| Process | Arrival Time | Burst Time | Priority |

|---------|-------------- |------------ |----------|

| P1 | 0 | 6 | 3 |

| P2 | 1 | 4 | 1 |

| P3 | 2 | 7 | 4 |

| P4 | 3 | 2 | 2 |

Calculate the average waiting time using Priority Scheduling.

4. Consider the following processes with arrival times and burst times, and the time quantum for

Round Robin scheduling is 2 units:

| Process | Arrival Time | Burst Time |

|----- ----|-------------- |- -----------|

| P1 | 0 | 4 |

| P2 | 1 | 5 |

| P3 | 2 | 2 |

| P4 | 3 | 3 |

Calculate the average turnaround time using Round Robin scheduling.

5. Consider a program that uses the fork() system call to create a child process. Initially, the parent

process has a variable x with a value of 5. After forking, both the parent and child processes

increment the value of x by 1.

What will be the final values of x in the parent and child processes after the fork() call?

* X become 6 in both parent and child process