CSc 3320: Systems Programming

Spring 2021
Homework
1: Total points 100

Submission instructions:
1.Create a Google doc for each homework assignment submission.
2. Start your responses from page 2 of the document and copy these instructions on page 1.
3. Fill in your name, campus ID and panther # in the fields provided. If this information is missing in your document TWO POINTS WILL BE DEDUCTED per submission.
4. Keep this page 1 intact on all your submissions. If this submissions instructions page is missing in your submission TWO POINTS WILL BE DEDUCTED per submission.
5. Each homework will typically have 2-3 PARTS, where each PART focuses on specific topic(s).
6. Start your responses to each PART on a new page.
7. If you are being asked to write code copy the code into a separate txt file and submit that as well.
8. If you are being asked to test code or run specific commands or scripts, provide the evidence of your outputs through a screenshot and copy the same into the document.
9. Upon completion, download a .PDF version of the document and submit the same.

Full Name: Alexandra Gentile
Campus ID: 002413770
Panther #: agentile2

Part 1.

1. The difference between Unix and Linux is that Linuc is a complete reimplementation, meaning it shows no common code with any version of Unix and therefore does not connect to the “family tree”. Some operating systems that belong to Unix but not Linux are Mac, bsd, and solaris.
2. The pipe mechanism in Unix allows a user to specify that the output of one process is to be used as the input to another process, allowing complex tasks to be broken down into simpler ones.
3. /bin, contains binary executable files. /dev contains all devices that can be accessed. /boot is the kernel residing in this directory and loads jup during boot up /usr stores all user related applications and files /etc contains system configuration files /mnt mount file systems and device files in CDRom /sbin is short system bin which contains system administrative executable programs /var variable storage directory that contains data that can be changed/altered
4. Multitask means that multiple programs can be run at the same time while Multi-user means that multiple users can be logged in at once.
5. -rwxr-xr-x means that the owner has permission to read, write, and execute, and the groups have permission to execute and read and others have permission to execute. The exact unix command for changing permissions is chmod. 4 is the value to read(r), 2 is the value to write(w), and 1 is the value to execute(x). For example, chmod 700 gives permission for only the owner to read, write, and execute.
6. The meaning of read for directory is that the owner to read the files within the directories. The meaning of write for directory is that the owner is able to add files into the directory. The meaning of execute for directory allows files you to enter files within the directory.

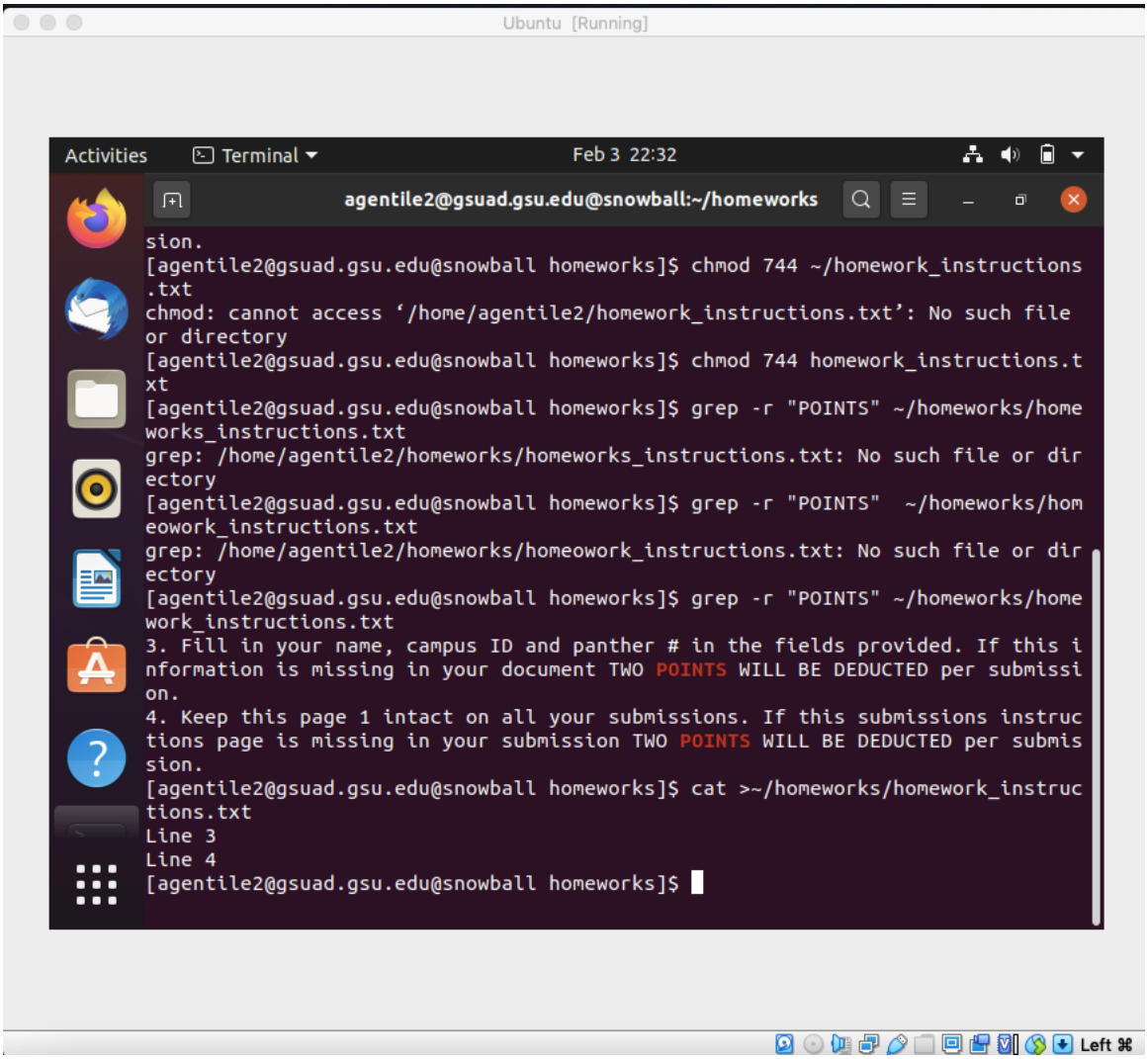
Part 2-a

7. ‘a[ab]*a’
- Aa, aaa, aba, aaba; Pattern: matched string should begin and end with ‘a’with any occurrence of characters within [ab]
8. ‘a(bc)?’
- a,abc Pattern: the beginning of a matched string should start with ‘a’ and have an occurrence of ‘bc’
9. ‘.[ind]*’
- mi, t,tn,td,ti,miidn. Pattern: the matched string should begin with any character followed by any occurrence within [ind].
10. ‘[a-z]+[a-z]’
    Abcd, avc, ad. Pattern: the matched string should end with anything ‘a’ to ‘z’ and have anything ‘a’ to ‘z’ within the middle.
11. ‘[a-z](\+[a-z])+’
- A+b a+b+b. Pattern: the matched string should start with any occurrence ‘a’ to ‘z’, one occurrence of ‘+’, and end with any occurrence ‘a’ to ‘z’
12. ‘a.[bc]+’
- Abb, atbc, aucb. Pattern: the matched string should start with ‘a’, then any character except a newline character, then there should be any character within [bc].
13. ‘a.[0-9]’
- At0, ar9. Pattern: the matched string should start with ‘a’ followed by any character and ending with a digit between [0-9]
14. ‘[a-z]+[\.\?!]’
- a., abcd?, az! ;. Pattern: the matched string should start with any characters between ‘a’to ‘z’ and end with a character ‘.’ ‘?’ or ‘!’
15. ‘[a-z]+[\.\?1]\s*[A-Z]’
- a. A, abc!, Z, abcds?B. Pattern: the matched string should start with a LOWER case letter ‘a’ to ‘z’ followed by a ‘.’,’?’, or ‘!’ with any occurrence of white space and should end with an upper case ‘A’ to ‘Z’
16. ‘(very)+(cool)?(good|bad)weather’
- verycoolgood weather, veryverybad weather ;. Pattern: the matched string should start with ‘very’ followed by an occurrence of ‘cool’ followed by ‘good’ or ‘bad’ and end with weather
17. ‘-?[0-9]+’
- 9, -2, -345, 454 ; . Pattern: the matched string should start with zero or one occurrence of ‘-‘ and end with any occurrence of digit [0-9]
18. ‘-?[0-9]*\.?[0-9]*,
- ‘ ‘, -09t, -y, 9u9. Pattern: the matched string should start with one or zero occurrence of ‘-‘ followed by any occurrence of [0-9] followed by one or zero occurrence of ‘.’

Part 2-b

19. “http://” Ending with “.edu”
- /^(http):\/\/[\w\-_]+{\.[w\-_]+)+([\w\-\.]*+(.edu)?
20. Non negative integers:
- (([1-9][0-9])*|0)?
21. Valid absolute pathname:
- ([.\/]+[a-z]*)*
22. [_a-Z]{10}
23. Phone number:
    1. [0-9]{10}
    2. [0-9]{3}-[0-9]{3}-[0-9]{4}
    3. ([0-9]{3})-[0-9]{3}-[0-9]{4}

PART 3



Step 1: mkdir ~/homeworks
Step 2: vi homework_instructions.txt
Step 3: i <enter> copy instruction page into file
Step 4: :wq (to save and exit vi editor)
Step 5: chmod 744 homework_instructions.txt
Step 6: grep -r “POINTS” ~/homeworks/homework_instructions.txt
Step 7: cat<~/homeworks/homework_instructions.txt <enter> Line 3 Line 4 <control-D>