COSC 350 System Software: Mini Test #1

2/12/21

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1. (2 pt.) Write a shell script named “sum.sh” that reads sequence of integers on the command line. Each integer are separated by a space and prints their sum to the screen.

Use for loop. **Do not use (()) in looping or any value evaluation**.

For example, when you run this script with 10 sequences of integers

./sum.sh 1 2 3 4 5 6 7 8 9 10

output of the script will be

Sum of Arguments is 55.

#!/bin/sh

# task6a.sh

read num

for i in `seq 1 $num`;

do

num = $num + $i

done

fi

exit 0

1. (1 pt.) There are two types of libraries: static library and shared library. Briefly explain differences between static and shared library.

A static library can be used at compile time while a shared library can be used at runtime. Shared libraries are faster because they are precompiled, but static libraries won’t have compatibility issues since they are not.

1. (1 pt.) Following shows students information (ID, last name, first name, age phone number) in the student.txt file. You need collect student data with string “Smith”.

1234 Smith Chistine 27 410-980-2222

0235 Park Sangeon 35 410-230-1023

8989 Kim David 23 410-111-0009

7878 Smith Emily 34 410-898-0009

6756 Chab Jessie 24 410-786-0345

1345 Clark Joshua 27 410-897-2345

1243 Close James 22 410-887-2345

7845 Smith Jason 23 410-772-3678

3412 Davis Andrew 21 410-876-2347

4567 Figiel Charles 27 410-777-8877

1345 Smith John 26 410-666-8888

…

…

Write commands with pipe and output redirection to find all student data with “Smith” in the student.txt and sort them based on age, and save in a file named “Smith.txt”.

grep Smith student.txt | sort -k 4,4 > Smith.txt

1. (1 pt.) Briefly explain the difference between the following two commands:

ls -l | less This pipes the command “ls -l” to less

ls -l > less This creates a file of command “ls -l” to the file “less”

1. (1 pt.) What are two conditions to make a shell script file executable

Add #!/bin/sh to the file and use chmod +x

1. (1 pt.) Given the following variable what will be displayed for each of the following shell commands?

variable="You are my sunshine!"

* echo variable variable
* echo "$variable " You are my sunshine!
* echo '$variable ' $variable
* echo \$variable $variable
* echo \$$variable $You are my sunshine!

1. (1 pt.) Write a script to calculating factorial of given number by using while loop. The script asks an integer value and calculates factorial and display the result. **Do not use (()) in looping or any value evaluation**.

#!/bin/sh

# task6a.sh

read num

fact=1

while [ $num -gt 1 ]

do

fact=$[ $fact \* $num ]

num=$[ $num -1 ]

done

echo $fact

exit 0

1. (2 pt.) Write shell script to display triangle shapes based on base length of triangle. A base value must be odd number greater than 3. Need get a size of base input from keyboard. **Do not use (()) in looping or any value evaluation.**

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Base 11 Triangle

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Base 9 Triangle

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Base 7 Triangle

#!/bin/sh

# task6a.sh

read num

if [ $num%2 == 0 ]; then

exit 1

elif [ $num -lt 3 ]; then

exit 1

else

for i in `seq 1 $num`;

do

for i in `seq 1 $num`;

do

echo -n “ “

done

for i in `seq 1 $num`;

do

echo -n “\* “

done

echo

done

fi

exit 0