COSC350 SYSTEM SOFTWARE, FALL 2021

## COSC 350 System Software: Mini Test #1

9/17/2021

1. (1 pt.) Create a file named numbs that contains the integers 1 through 100, one integer per line with shell commends with output redirection. The file will have 100 lines. You need use for loop.

for i in \$ (seq 1 + , 100); do echo "\$i"> numbs

- 2. (1 pt.) When we pass arguments to a script, system save each arguments in positional parameters \$0, \$1, \$2, ... What information will save on each of following positional parameters

  - · \$#: number of parameters.
- \$@: All parameters
   \$0: first parameter

  \* Shell script name
  - 3. (0.5 pt.) What are two conditions to make a shell script file executable
    - a. location of Bash
    - b. modify file to be executable (chmod)
  - 4. (0.5 pt.) There are two types of libraries: static library and shared library. Briefly explain differences between static and shared library.
    - o Static library: Compiled library.

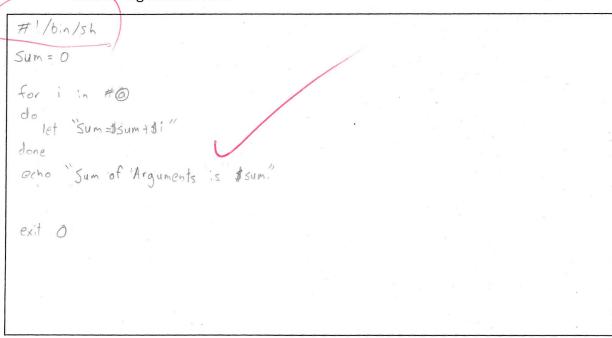
    - o Shared library: run-time compilation
- look at slide

5. (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 and Don't use (()) (c syntax) for calculation.

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.



6. (0.5 pt.) Given the following variable what will be displayed for each of the following shell commands?

vari="How are you?"

- echo vari
- echo "\$vari"
- echo 'Svari' How are you?
- echo \\$vari \$ var;
  echo \\$\$vari # How are you?

7. (1.5 pt.) Write a script to calculating factorial of given number by <u>using while loop</u>. The script asks an integer value and calculates factorial and display the result.

```
#!/b.n/sl

loop="true"

while ["$loop"="true"]

do ocho "Please input positive integer"

read number

case $number in

*[0-9]* | "") loop="false"

esac

done

factorial=1

while [$number -ge 0]

do.

if [$number -eq 0]; then

let "factorial=$factorial*1"

else

let "factorial=$factorial*$number"

fi

let number-=

done

echo $factorial

exit 0
```

8. (1 pt.) Since a directory itself is a file in Linux system, each directory has its name. Write bash script which test each files in current working directory and display subdirectory names.

```
for file in *

do

if [-d #file]; then

15-1 \W\file

fi

done

exit 0
```

9. (1.5 pt.) Write shell script by using <u>nested for loop</u> to print the following patterns on screen based on an integer input n (between 1 and 9) from the keyboard. (**Do not use (()) in for loop**). Your program display following shape with input 5.

```
#!/bin/sh

echo "Enter an integer"

read: integer

for : in $ (seq | to $integer)

do echo "$;"

done

done

done
```

10. (0.5 pt.) Briefly explain the difference between the following two bash commands:

- Is I less this is pipe command. After is -1, it Coefforms less
- Is-I>less This send results of Is -1 to file called less