CST365-3

SYSTEMS LEVEL PROGRAMMING

PRACTICAL ASSIGNMENT-04

UWU/CST/17/054
Shindujah Arudchelvan
Computer Science and Technology
Faculty of Applied Sciences

1. Write a script that executes the following commands.

i. 'rm unknownfile' and 'ls'

```
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ vi test
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ chmod 700 test
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./test
address         commandargument  Documents    file5      Getname       name        Public      Shindu_files      sum        test3
asterisk        commandline      Downloads    filename   hello1        oddnumber   rmFile      shindujah_files   Templates  test4
checkargu1      commandlines     environment  filename1  hello2        olddir      shin        Shindujah_files   tes        userinfo
checkargu2      demo             factorial    filename2  helloworld1   pdf         shindu      shinufiles        test       Videos
checkargument   Desktop          file         function   mtable        Pictures    shindufile  SLPnew            test1
checkargument2  dir1             file1        getname    Music         print       shindufiles studentlist       test2
rm: cannot remove 'file9': No such file or directory
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ echo $?
1
```

ii. after executing each command use an if-block to print out a line of text stating whether the command was executed successfully or not.

```
#!/bin/bash

# print a line whether the command was executed successfully or not
ls
rm file9
if test $? -eq 0
then
echo "-----------Command Successfully Executed-----------"
else
echo "-----------Command Not Executed-------------------"
fi
```

```
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ vi test
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ chmod 700 test
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./test
address          Desktop      getname    print             Templates
append           dir          Getname    Public            tes
askname          dir1         hello1     rmFile            test
asterisk         Documents    hello2     shin              test1
bb               Downloads    mtable     shindu            test2
catfile1         environment  Music      shindufile        test3
checkargu1       factorial    name       shindu_files      test4
checkargu2       file         newfile    shindufiles       userinfo
checkargument    file1        newtest9   Shindu_files      variable
checkargument2   file2        number     shindujah_files   Videos
command          file3        oddnumber  Shindujah_files
commandargument  filename1    olddir     shinufiles
commandline      filename2    pdf        SLPnew
commandlines     function     Pictures   sum
rm: cannot remove 'file9': No such file or directory
-----------Command Not Executed-------------------
```

2. Use for loops in shell scripts to answer following questions.

i. Create shell script to run the commands 'date, pwd and ls' in given order.

```
#!/bin/bash
#forloop
for command in date pwd ls
do
echo "--------$command--------"
$command
done
```

```
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ vi test3
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ chmod 700 test3
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./test3
---------date--------
2021 ජූලි  1 වැනි බ්‍රහස්පතින්දා  21:44:03 +0530
---------pwd--------
/home/user
---------ls--------
address           demo          filename     name      shindufile        tes
asterisk          Desktop       filename1    olddir    shindufiles       test
checkargu1        dir1          filename2    pdf       Shindu_files      test1
checkargu2        Documents     getname      Pictures  shindujah_files   test2
checkargument     Downloads     Getname      print     Shindujah_files   test3
checkargument2    environment   hello1       Public    shinufiles        userinfo
commandargument   file          hello2       rmFile    studentlist       Videos
commandline       file1         helloworld1  shin      sum
commandlines      file5         Music        shindu    Templates
```

ii. Write a script using the for-in-loop to print the multiplication table for a value provided by the user as a command argument (Table should contains entries from 1 to 12)

```
#!/bin/bash
#
#Script print multiplication table
#
if [ $# -eq 0 ]
then
echo "Error- Number missing from command line argument"
echo "Syntax : $0 number "
echo "Use to print multiplication table for given number"
exit 1
fi
n=$1
for i in 1 2 3 4 5 6 7 8 9 10 11 12
do
echo "$n * $i = `expr $i \* $n`"
done
```

```
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ vi mtable
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ chmod 700 mtable
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./mtable 3
3 * 1 = 3
3 * 2 = 6
3 * 3 = 9
3 * 4 = 12
3 * 5 = 15
3 * 6 = 18
3 * 7 = 21
3 * 8 = 24
3 * 9 = 27
3 * 10 = 30
3 * 11 = 33
3 * 12 = 36
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./mtable 7
7 * 1 = 7
7 * 2 = 14
7 * 3 = 21
7 * 4 = 28
7 * 5 = 35
7 * 6 = 42
7 * 7 = 49
7 * 8 = 56
7 * 9 = 63
7 * 10 = 70
7 * 11 = 77
7 * 12 = 84
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./mtable
Error- Number missing from command line argument
Syntax : ./mtable number
Use to print multiplication table for given number
```

3. Use while loops in shell scripts to answer following question.

i. Write a shell program to read two numbers and display all the odd numbers between those two numbers

```bash
#!/bin/bash

#Script print oddnumbers between two numbers
echo "Enter number1"
read N1

echo "Enter number2"
read N2

echo "------------Out put----------"

while [ $N1 -lt $N2 ]
do
REMAINDER=$(($N1%2))
if [ $REMAINDER -ne 0 ]
then
echo $N1
fi
N1=$(($N1+1))
done
```

```
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ vi oddnumber
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ chmod 700 oddnumber
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./oddnumber
Enter number1
30
Enter number2
50
-----------Out put----------
31
33
35
37
39
41
43
45
47
49
```

5

ii. Write a shell script to calculate factorials.

```bash
#!/bin/bash
#Script to calculate factorial number
#factorail using while loop
#
echo "Enter a number"
read num
fact=1
while  [ $num -gt 1 ]
do


fact=$((fact * num))
num=$((num - 1))
done

echo $fact
```

```
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ vi factorial
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ chmod 700 factorial
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./factorial
Enter a number
8
40320
```

ii. Write a function to get your 'name, address and country' and print them on the screen

```bash
#!/bin/bash
#Script for function to get name address country
#
MyDetails()
{
echo "My Name is : $1"
echo "My Address is : $2"
echo "My Country is : $3"
}

n=1
while [ $n -le 1 ]
do
MyDetails Shindujah Jaffna SriLanka
n=$(($n+1))
done
```

```
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ vi function
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ chmod 700 function
user@user-HP-Pavilion-Laptop-14-bk0xx:~$ ./function
My Name is : Shindujah
My Address is : Jaffna
My Country is : SriLanka
```