CSE 4502 : Operating Systems Lab
Islamic University of Technology (IUT)
Department of CSE
Time : 1 Hour 20 Mins
Date: Monday, 07 November 2022
Total Marks: 50

1. Write a shell script having the name `crdir.sh` with an aim to create nested directories, names of which are to be provided in the parameter list. The script will take `n` parameters (`n≥1`) as filenames, where the parameter sequence has the following meaning - 20

```
p_1    = Name of parent directory
p_2    = Name of subdirectory 1
.
p_n    = Name of subdirectory n
```

You must ensure that the script creates the nested directories under the `Documents` directory. Also, if the user makes any usage error while typing the command, the following provisions must be there,

a. While executing the script without the directory names, syntax error should be raised and must be addressed with a prompt of the following nature,

```
$./crdir.sh

Syntax Error!!
Syntax : ./crdir.sh <dir> <subdir_1> <subdir_2> … <subdir_N>
For more information type: ./crdir.sh -h
```

b. When the script is called with `-h`, the output should be the following.

```
$./crdir.sh -h

-./crdir.sh creates files in the Documents directory.
- Syntax : ./crdir.sh <dir> <subdir_1> <subdir_2> … <subdir_N>
-- Parameter 1 <dir> : Name of the parent directory.
-- Parameter 2 <subdir_1> : Name of the 1st sub-directory.
--.
-- Parameter N <subdir_N> : Name of the Nth sub-directory.
```

2. Write a shell script that takes a number as a parameter and prints it in reverse order. It should support the following requirements. 15

You must ensure that if the user makes any usage error while typing the command, the following provisions must be there,

a. While executing the script without the directory names, syntax error should be raised and must be addressed with a prompt of the following nature,

```
$./reverse_integer.sh

Syntax Error!!
Syntax : ./reverse_integer.sh <number_1> <number_2> … <number_N>
For more information type: ./reverse_integer.sh -h
```

b. When the script is called with `-h`, the output should be the following.

```
$./reverse_integer.sh -h

-./reverse_integer.sh prints numbers in reverse order, each in a new
line.
- Syntax : ./reverse_integer.sh <number_1> <number_2> … <number_N>
-- Parameter 1 <number_1> : First number to be printed in reverse.
-- Parameter 2 <number_2> : Second number to be printed in reverse.
--.
-- Parameter N <number_N> : Nth number to be printed in reverse.
```

For multiple integer inputs, it should print each integer in reverse order in separate lines.
Name your shell script using the following format `reverse_integer.sh` for example: `reverse_integer.sh`.

Input	Output
$./reverse-integer_190041016.sh	Please provide the correct input in the below format. Usage: ./reverse-integer_190041016.sh number
$./reverse-integer_190041016.sh 1234	Reverse of 1234 is 4321
$./reverse-integer_190041016.sh 1234 235	Reverse of 1234 is 4321 Reverse of 235 is 532

3. Write a shell script that will prompt the user for an input string. The script will return an output string only consisting of the **consonants** from the given input string. 10

Note: strings will not contain any *spaces*.

Input	Output
`$./consonants.sh maurisluctuserosatnibhiaculistempus`	`mrslctsrstnbhclstmps`

4. Write a shell script `split.sh` that takes in a list of integers and non-integers (including characters and strings) as parameters and prints out the list of integers and non-integers separately. 5

Hint: Use the following condition while checking for integers.

```
if [[ $var =~ ^[+-]?[0-9]+$ ]]
then....
```

The input and output should have the following format:

Input	Output
`$./split.sh 100 a 1.1 1 2 -1 help`	`List of Integers: [100 1 2 -1]` `List of Non-Integers: [a 1.1 help]`