Operating System Unix
Lab 1: Scripting

Exercise 1

Copy the script into the file "script1.sh":

```
#!/bin/bash
# comments: it looks so easy to write a script shell
echo This is my first script
echo -n "Listing the files : "
ls -la
pwd
whoami
date
```

Add the execution permission to ″script1.sh″ file and run the script. What does this script do?

Exercise 2

Write a script that takes the name of a file/directory as input, and that returns the result of the following test :

XYZ file exists
XYZ file has read permission
XYZ file has edit permission

Exercise 3

Copy the following script into the script3.sh file and run the script. What does this script do?

```
$ cat script3.sh
#!/bin/bash
# menu interface to simple commands
        echo -e "\n COMMAND MENU\n"
        echo " a. Current date and time"
        echo " b. Users currently logged in"
        echo " c. Name of the working directory"
        echo -e " d. Contents of the working directory\n"
        echo -n "Enter a, b, c, or d: "
        read answer
        echo

        case "$answer" in
        a)
                date
                ;;
        b)
                who
                ;;
        c)
                pwd
                ;;
        d)
                ls
                ;;
        *)
                echo "There is no selection: $answer"
                ;;
        esac
```

Exercise 4
Write a script bash that displays the following menu, and then asks the user to enter a number (from 1 to 4). The script must display the result of executing the command between parentheses according to user input:

1. 1. List directory contents (execute the command: ls -l)
2. 2. List running processes (execute the command: ps aux)
3. 3. Today's date (execute the command: date)
4. 4. Exit

Exercise 5
Write a script that takes a file as an argument and transforms all lowercase letters into uppercase in its content.

Exercise 6
Write a script to create a zip file containing files provided by user as arguments of the script.

Exercise 7
Write a script which takes the name of two files (filesrc and filedst) as arguments, and which copies from the file filesrc to the destination file filedst.

Exercise 8
Using a file from your choice, compare the compression rate of the 3 programs: gzip, bzip2 and xz. Which one has the best compression ratio.

Exercise 9
Write a script that takes the name of one/several file(s) as an argument and that displays the menu below: Do you want to create an archive

1) with extension .tar.gz
2) with extension .tar.bz2

This script should create an archive containing the files as arguments, with an extension that depends on the user's response.

Exercise 10
Write a script that takes as input a decimal number and converted into binary, octal and hexadecimal.

Exercise 11
Write a script that takes two operands and an operator (+, -, x, /, //, pow, mod) as argument or by prompting the user when no argument is provided and displays the result of the desired operation in the terminal.

Exercise 12
Write a bash script that prompts user for his first name and birth year, and it returns his name & his age.

Exercise 13
Write a bash script that prompts user for time and distance, and it derives the speed with 2 decimals.