

# Linux assignment –7

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## **1. What is a bash shell script? Give one example.**

**Ans:** A basic text document with a number of Linux commands written in the Bash language is called a bash shell script. We can write all of the commands in a file and execute them all at once rather than entering them one at a time in the terminal.

Example: `#!/bin/bash`

`Echo "This is my first bash script!"`

Here the first line tells the system to use Bash to run the script.

## **2. Write a simple shell script to print “Hello World”.**

**Ans:** `#!/bin/bash`

`echo "Hello World"`

Here first line to the system that use bash to execute the command

Then the echo command is used to print the word.

## **3. What is the purpose of comments (#) in a shell script?**

**Ans:** the comment is written with the help of the keyword # symbol. It is used to explain the specific step or the specific command line to understand the logic or the code easily. The bash script or other programming language will ignore the comment and it will not execute. It is only for the user to understand the program easily and get less time to understand.

Example : `# this line to greet`

`Echo “have a good day ”`

## **4. How do you declare variables (int, float, double, string, Boolean, and char in a shell script?)**

**Ans:**

the bash shell scripting is different from other programming language, because here the data type is not declared like how we declare in other programming language everything is treated as string here by default but we can use them like integer or boolean or other based on the requirement.

Example:

```
# Integer
num=10

# Float (use bc for calculations)
float_num=10.5

# String
name="Pranav"

# Boolean (simulated with 0=false, 1=true)
is_true=1

#Character
char='A'
```

**5. Write a shell script to display the current date and time of the system.**

Ans:

```
#!/bin/bash

echo "Current date and time:"

date
```

Here the date is the main command which provides the date and time. And the first line is to tell to the system that this code is executed by the bash language and echo command is to print the specific sentence or to print the output also.

**6. Explain the difference between a constant and a variable in bash script.**

**Ans:** in the bash language the variable and the constant is used to store the data mainly , but in the main difference is whether their value can be change or not during execution of the program.

**Variable:** it is a name that holds some value which can be changed or updated anytime while the script is running it means like it is a box where you can add or replace item whenever you want.

**Constant:** constant is fixed value that cannot be changed or modified once it is declared or defined. If we want to change the value of constant shell will not allow it and will show an error.

Example: #!/bin/bash

```
# Variable Example
```

```
num=5
```

```
echo "Initial value of num: $num"
```

```
num=10
```

```
echo "After change, value of num: $num"
```

```
# Constant Example
```

```
readonly pi=3.14159
```

```
echo "Value of pi: $pi"
```

```
pi=4.2 # This will cause an error because pi is read-only
```

**7. Write a shell script to read two integer number from the user and compute the sum of both the number**

**Ans:** #!/bin/bash

```
echo "Enter first number:"
```

```
read num1
```

```
echo "Enter second number:"
```

```
read num2
```

```
sum=$((num1 + num2))
```

```
echo "The sum is: $sum"
```

**8. What is the use of source command in shell scripting?**

**Ans:** the source command is also known as dot command and it is used to run the script in the current running terminal or shell instead of starting a new tab. This will help when we want to load environment variables or a function into the current session.

Example: command ==> ( source myscript.sh )

This will run the myscript.sh in the same terminal or current shell.

## 9. How can you debug a shell script? Give two methods.

**Ans:** debugging is very important in all programming languages; it makes the code run smoothly and error-free. There are mainly 2 types of debugging methods in the bash script.

Method 1: using the keyword `-x` option while running the script.

**bash -x script.sh**

This will show each and every command before it executes so we can find where the issue was.

Method 2: adding `set -x` and `set +x` inside the script.

**Set -x**

**Echo "running"**

**Set +x**

This method makes it easier to track and fix the error in the script step by step.

## 10. Write a bash script to create and delete a file.

Ans: `#!/bin/bash`

`echo "Creating a file named testfile.txt..."`

`touch testfile.txt`

`echo "File created successfully!"`

`echo "Now deleting the file..."`

`rm testfile.txt`

`echo "File deleted successfully!"`

Here the `touch` command is used to create an empty file and the `rm` command is used to delete the file.

First it creates the file, then it deletes it and shows the message after each step.