Variables and their Types

Familiarize yourself with variables in shell environment and their types.

If you have a prior programming experience, then you might already be familiar with the basic concepts of Variables. This chapter will briefly summarize all the concepts that you have studied so far and give you a hands-on experience on variable assignment. Variables are nothing but placeholders for memory locations. They empower the programmers to quickly store or retrieve data for a successful execution of a program.

In Bash, variables are commonly referred as **Bash Parameters**. These parameters can be further categorized into three types; *Special Parameters*, *Positional Parameters* and *Shell Variables*. In this chpater, we will only cover the latter one as it's the most important type of variables. In Bash, it is not necessary to declare the type of a variable so a variable can hold anything that we assign to it be it a number, string or a character.

Types of Variables

Based on their lifetime, range and uses, the variables can generally be divided into three categories:

- Shell Variables
- Local Variables
- Environment Variables
- Other Variables

1. Shell Variables

Shell variables are a combination of local variables which are required by the Shell for proper functioning. Each Shell has its own Shell Variables which are only accessible inside that Shell. These variables are not even local to parent

or child Shells.

Examples: `$my_var`

2. Local Variables

Local variables are set at command line prompt and are only accessible inside the current shell. They cannot be accessed by child processes/program which run under the current shell. All user-defined variables are local variables.

Examples: `MY_MESSAGE = HELLO`

3. Environment Variables

Environment variables, on the other hand can be accessed anywhere in the Shell and even by the child processes called in a Shell. In Bash, `export` command is used to create Environment variables.

Examples: `$PATH` variable is one of the most important enviroment variable which specifies a list of directories where programs are stored. It allows installing several versions of same program and is very convenient to use.

4. Other Variables

Some other system variables which are set by deafult by the system are mentioned below:

Variable	Meaning
$USER	Returns the username
$HOSTNAME	Returns the machine name
$$	Returns the Script ID

$0	Returns the name of the Ccript
$1-9	Returns the first 9 arguments in the Script