Shell Scripting - Module 4

Introduction to Variables

- **Variables are generally used to store the information.**
- **Information can be any form of data.**
- **You can call the Variables from elsewhere instead of hard coding the information again and again.**

String as variable

```
# String should be defined in quotes either double or single.
"my name is Arun" or 'my name is Arun'

# Print string using echo
echo "my name is Arun"

# Store string as variable
name="arun"
echo "Hi $name"
echo 'Hi $name'
```

Integer as variable

```
# Print integer
echo 100

# Store string as variable
x=10
echo $x
```

List as variable

```
# Print list with integers
echo "100 200 300"

# Print list with strings
echo "Apple, Orange"

# Store list as variable
list="100 200 300"
echo $list

# Provide strings in list
list="apple, orange, pineapple"
echo $list
```

Boolean as variable

```
production=true
staging=false
# This can be used more with conditional based shell scripts which we can see later.
```

Arithmetic operators with variable

```
$ expr 1 + 3
$ expr 2 - 1
$ expr 10 / 2
$ expr 20 % 3
$ expr 10 * 3

# you can also use echo to print expressions.
$ echo `expr 6 + 3`

# Use variables along with arithmetic operators
myname=Arun
echo "My name is $myname"
echo "My age is `expr 10 + 16`"
```

User input variable

How to read input from command line.

```
echo -n "myname:"
read servername
echo "myname: $servername"
echo -n "my operating system:"
read os
echo "my operating system: $os"
```

```
echo "whats your name"
read name
echo "Hello $name, How are you?"
read fine
echo "I am fine $name"
echo "good $name lets be friends"
```

Command line arguments

How to provide input as command line argument.

```
#!/bin/bash
name=$1
age=$2
echo "Provide input is : $name"
ehco "Povided input is : $age"
```

Read-only variables

- **Shell provides a way to mark variables as read-only by using the read-only command.**
- **After a variable is marked read-only, its value cannot be changed.**

```
#!/bin/sh
NAME="arun"
readonly NAME
# we are trying the change the variable here
NAME="balaji"
```

- This code will generate this result.

```
./filename.sh: 5: NAME: is read only
```

Variable types

There are three main types of variables available :

- **Local Variables** :

  A local variable is a variable that is present within the current instance of the shell.

  It is not available to programs that are started by the shell.

  They are set at the command prompt.

- **Environment Variables** :

  An environment variable is available to any child process of the shell.

  Some programs need environment variables in order to function correctly.

  We can also define environment variable like below.

```
export "name=hello"
echo $name
```

  This variable will exist until you exit from shell.

- **Shell Variables** :

A shell variable is a special variable that is set by the shell and is required by the shell in order to function correctly.

Some of these variables are environment variables whereas others are local variables.

These shell variables are mostly set at cat ./.bashrc which will load when shell is initiated.