

Assignment-7(Loops and decisions)

Introduction

Shell scripting allows automation of tasks in Unix/Linux systems. Two key concepts in shell programming are decision-making and loops.

Decision-making (if-else, case)

Decision-making is used to execute a block of code based on conditions. For example, checking if a number is even or odd.

Example:

```
#!/bin/bash
echo "Enter a number:"
read n
if [  $$(n \% 2)$  -eq 0 ]; then
    echo "$n is Even"
else
    echo "$n is Odd"
fi
```

Loops (for, while, until)

Loops are used to execute a block of code repeatedly until a condition is met. For example, printing a multiplication table.

Example:

```
#!/bin/bash
echo "Enter a number:"
read n
for i in {1..10}
do
    echo "$n x $i =  $$(n * i)$ "
done
```

Interactive Programs

Interactive programs take input from the user during execution using the read command.

Example:

```
#!/bin/bash
echo "Enter your name:"
read name
echo "Hello, $name"
```

Command Line Argument Programs: Command Line Argument programs take inputs as arguments at the time of execution. This makes them more flexible for automation.

Example:

```
#!/bin/bash
echo "First argument is: $1"
echo "Second argument is: $2"
```

Run as:

```
vi script.sh arg1 arg2
```

Practice Questions:

1: Multiplication Table

I. Interactive version: The program should accept an integer n given by the user and should print the multiplication table of that n .

II. Command line arguments version: The program should take the value of n from the arguments followed by the command.

III. Redirection version: The value of n must be taken from a file using input redirection.

Use the commands read, echo, expr, while, or for.

2: Copy Multiple Files to Directory

I. Interactive version

II. Command line arguments version

III. Use the commands echo, read, cp, mkdir.

3: Count Lines and Words in File

I. Interactive version

II. Command line arguments version

Use the commands echo, read, wc.

4: Display Files in a Directory

I. Interactive version

II. Command line arguments version

Use the commands echo, read, ls.

5: Write a shell script to check whether a number is even or odd using if-else.

6: Write a shell script to find the largest among three numbers using nested if.

7: Write a shell script to check whether a given year is a leap year or not.

8: Write a shell script to accept marks and display grade using if-elif-else.

9: Write a shell script to perform +, -, *, / using case statement.