

## Experiment No:11

### Write a shell script to display a pattern using nested loop

#### Aim:

To write a shell script that displays a simple pattern using nested loops.

#### Theory:

Nested loops are useful in shell scripts to create repeated actions, such as printing patterns. The outer loop controls the number of rows, while the inner loop controls the number of symbols or characters printed on each row.

For example: write a shell script for the below pattern

```
*
**
***
****
*****
```

#### Procedure:

1. **Create the Shell Script:** Open a terminal and create a shell script file:

```
nano pattern.sh
```

2. **Write the Shell Script:** Add the following code to display a right-angle triangle pattern:

```
#!/bin/bash
# Simple script to display a pattern using nested loops

echo "Enter the number of rows:"
read rows

for ((i=1; i<=rows; i++))
do
  for ((j=1; j<=i; j++))
  do
    echo -n "*"
  done
  echo ""
done
```

3. **Save and Exit:** Press Ctrl + X, then Y, and hit Enter to save the file and exit the editor.
4. **Make the Script Executable:** Make the script executable using the chmod command:

```
chmod +x pattern.sh
```

5. **Run the Script:** Execute the script by typing:

```
./pattern.sh
```

6. **Input the Number of Rows:** Enter the number of rows for the pattern. For example, entering 5 will output:

```
*  
**  
***  
****  
*****
```

### **Conclusion:**

This shell script uses nested loops to display a pattern. The outer loop controls the rows, and the inner loop controls how many stars (\*) are printed on each row. This experiment demonstrates how nested loops can be used in shell scripting to generate simple patterns.