

# **RIPHAH INTERNATIONAL UNIVERSITY, ISLAMABAD**



**Lab # 11**

**Bachelors of Computer Science – 6<sup>th</sup> Semester**

**Subject: Operating System**

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## Lab Task

**Q1.** How do you create a basic `for` loop in a shell script to iterate over a list of numbers from 1 to 5?

**Output:**

```
GNU nano 6.2                                loop.sh
#!/bin/bash
for ((i=1;i<=5;i++))
do
    echo "Number: $i"
done

student@student-virtual-machine:~$ nano loop.sh
student@student-virtual-machine:~$ ./loop.sh
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5
```

**Q2.** What is the syntax for a `while` loop that counts from 1 to 10 and prints each number?

**Output:**

```
GNU nano 6.2
#!/bin/bash

count=1
while (( count<11 ))
do
    echo "Number: $count"
    ((count++))
done

student@student-virtual-machine:~$ nano whileLoop.sh
student@student-virtual-machine:~$ ./whileLoop.sh
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5
Number: 6
Number: 7
Number: 8
Number: 9
Number: 10
```

**Q3.** How would you write a nested loop in shell scripting to print a multiplication table from 1 to 3?

**Output:**

```
GNU nano 6.2
#!/bin/bash

for ((i=1 ; i<4; i++))
do
    for ((j=1;j<4; j++))
    do
        result=$((i * j))
        echo "$i * $j = $result"
    done
done

student@student-virtual-machine:~$ nano nestedLoop.sh
student@student-virtual-machine:~$ ./nestedLoop.sh
1 * 1 = 1
1 * 2 = 2
1 * 3 = 3
2 * 1 = 2
2 * 2 = 4
2 * 3 = 6
3 * 1 = 3
3 * 2 = 6
3 * 3 = 9
```

**Q4:** Write a for-in loop that iterates over the items in an array named `fruits` containing apple, banana, and cherry.

**Output:**

```
GNU nano 6.2
#!/bin/bash

fruits=("apple" "banana" "cherry")

for fruit in "${fruits[@]}"
do
    echo "Fruit: $fruit"
done

student@student-virtual-machine:~$ nano forIn.sh
student@student-virtual-machine:~$ ./forIn.sh
Fruit: apple
Fruit: banana
Fruit: cherry
```

**Q5:** Write a `while` loop that reads user input until the user types "exit".

**Output:**

```
GNU nano 6.2                               while.sh
#!/bin/bash

while true
do
    read -p "Enter input (type 'exit' to quit): " input
    if [ "$input" == "exit" ]; then
        echo "Exiting..."
        break
    fi
    echo "You entered: $input"
done

student@student-virtual-machine:~$ nano while.sh
student@student-virtual-machine:~$ ./while.sh
Enter input (type 'exit' to quit): 2
You entered: 2
Enter input (type 'exit' to quit): exit
Exiting...
```