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BSCS-5th Semester

OS Lab Tasks

LAB # 11

Submitted to:

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Task 1:
Write a Bash script that iterates through a list of planets and prints each planet's name along with a numerical count, starting from 1.

```
student@student-virtual-machine:~$ nano planets.sh
student@student-virtual-machine:~$ chmod u+x planets.sh
student@student-virtual-machine:~$ ./planets.sh
1. Mercury
2. Venus
3. Earth
4. Mars
5. Jupiter
6. Saturn
7. Uranus
8. Neptune
```

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

# List of planets
planets=("Mercury" "Venus" "Earth" "Mars" "Jupiter" "Saturn" "Uranus" "Neptune")

# Initialize count variable
count=1

# Iterate through planets and print each planet's name with count
for planet in "${planets[@]}"
do
  echo "$count. $planet"
  ((count++))  # Increment the count
done
```

Task 2:
Write shell script that print following output using while loop only.

9 8 7 6 5 4 3 2 1 0
8 7 6 5 4 3 2 1 0
7 6 5 4 3 2 1 0
6 5 4 3 2 1 0
5 4 3 2 1 0
4 3 2 1 0
3 2 1 0
2 1 0
1 0
0

```
student@student-virtual-machine:~$ nano reverse_numbers.sh
student@student-virtual-machine:~$ chmod u+x reverse_numbers.sh
student@student-virtual-machine:~$ ./reverse_numbers.sh
9 8 7 6 5 4 3 2 1 0
8 7 6 5 4 3 2 1 0
7 6 5 4 3 2 1 0
6 5 4 3 2 1 0
5 4 3 2 1 0
4 3 2 1 0
3 2 1 0
2 1 0
1 0
0
```

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

# Start the outer loop from 9
i=9

# Outer loop: Continue as long as i is >= 0
while [ $i -ge 0 ]
do
  # Start the inner loop from the current value of i
  j=$i

  # Inner loop: Continue as long as j is >= 0
  while [ $j -ge 0 ]
  do
    # Print j followed by a space
    echo -n "$j "

    # Decrement j by 1
    ((j--))
  done

  # Print a newline after finishing a row
  echo

  # Decrement i by 1
  ((i--))
done
```

Task 3:
Produce above output again but this time using **for** loop.

```
student@student-virtual-machine:~$ nano reverse_numbers_for.sh
student@student-virtual-machine:~$ chmod +x reverse_numbers_for.sh
student@student-virtual-machine:~$ ./reverse_numbers_for.sh
9 8 7 6 5 4 3 2 1 0
8 7 6 5 4 3 2 1 0
7 6 5 4 3 2 1 0
6 5 4 3 2 1 0
5 4 3 2 1 0
4 3 2 1 0
3 2 1 0
2 1 0
1 0
0
```

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

# Outer loop: Starts from 9 and decreases to 0
for ((i=9; i>=0; i--))
do
  # Inner loop: Starts from the current value of i and goes down to 0
  for ((j=i; j>=0; j--))
  do
    # Print j followed by a space without a newline
    echo -n "$j "
  done

  # Print a newline after each line is completed
  echo
done
```

Task 4:
Write a shell script that takes two numbers as argument from user like
./script 12 13
Write **add** function and pass these arguments to that function. Calculate sum and return result. Then display result at main script.

```
student@student-virtual-machine:~$ nano add_numbers.sh
student@student-virtual-machine:~$ nano add_numbers.sh
student@student-virtual-machine:~$ chmod +x add_numbers.sh
student@student-virtual-machine:~$ ./add_numbers.sh 12 13
The sum of 12 and 13 is: 25
```

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

# Function to add two numbers
add() {
    # Parameters are passed to the function as $1 and $2
    sum=$(( $1 + $2 ))  # Perform addition
    echo $sum  # Return the sum
}

# Check if two arguments are passed to the script
if [ $# -ne 2 ]; then
    echo "Please provide two numbers as arguments."
    exit 1
fi

# Call the add function and pass the arguments
result=$(add $1 $2)

# Display the result
echo "The sum of $1 and $2 is: $result"
```