	Bansilal Ramnath Agarwal Charitable Trust's Vishwakarma Institute of Information Technology **Department of Artificial Intelligence and Data Science**

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Title of Assignment: Write The shell scripting for demonstrate the following logic. 1) Decision Logic 2) Looping Logic 3) Decision and Looping Logic.		
Date of Performance: 23/08/2023	Date of Submission: 6/09/2023	

Aim:

Write The shell scripting for demonstrate the following logic.
1) Decision Logic
2) Looping Logic
3) Decision and Looping Logic.

Write-up :

Demonstrating Decision Logic, Looping Logic, and Combined Logic in a Bash Script

This write-up explains a Bash script that showcases three fundamental programming concepts: Decision Logic, Looping Logic, and a combination of both. The script is designed to be executed in a Bash shell environment, providing interactive and informative outputs based on user input and program logic.

1. Shebang:

- The shebang is the line **#!/bin/bash** at the beginning of the script.
- It is a special instruction for the operating system that tells it which interpreter to use to execute the script.
- In this case, it specifies that the Bash shell (**/bin/bash**) should be used to interpret and execute the script.

2. Decision Logic:

- Decision logic involves making choices or decisions based on conditions.
- In Bash scripts, decision logic is often implemented using the **if** statement.
- An **if** statement allows you to test a condition and execute different code blocks based on whether the condition is true or false.
- In the script, it prompts the user for input and then checks if the entered number meets a specific condition (in this case, whether it's greater than 10).
- Depending on the outcome of this condition, the script executes different actions or displays different messages.

3. Looping Logic:

- Looping logic is used to repeat a block of code multiple times.
- In Bash scripts, looping is often achieved using the **for** loop or **while** loop.
- A **for** loop, as used in the script, iterates over a range of values (in this case, from 1 to 5) and executes a set of commands for each value in the range.
- Looping is a powerful programming construct that helps automate repetitive tasks and perform operations on multiple items sequentially.

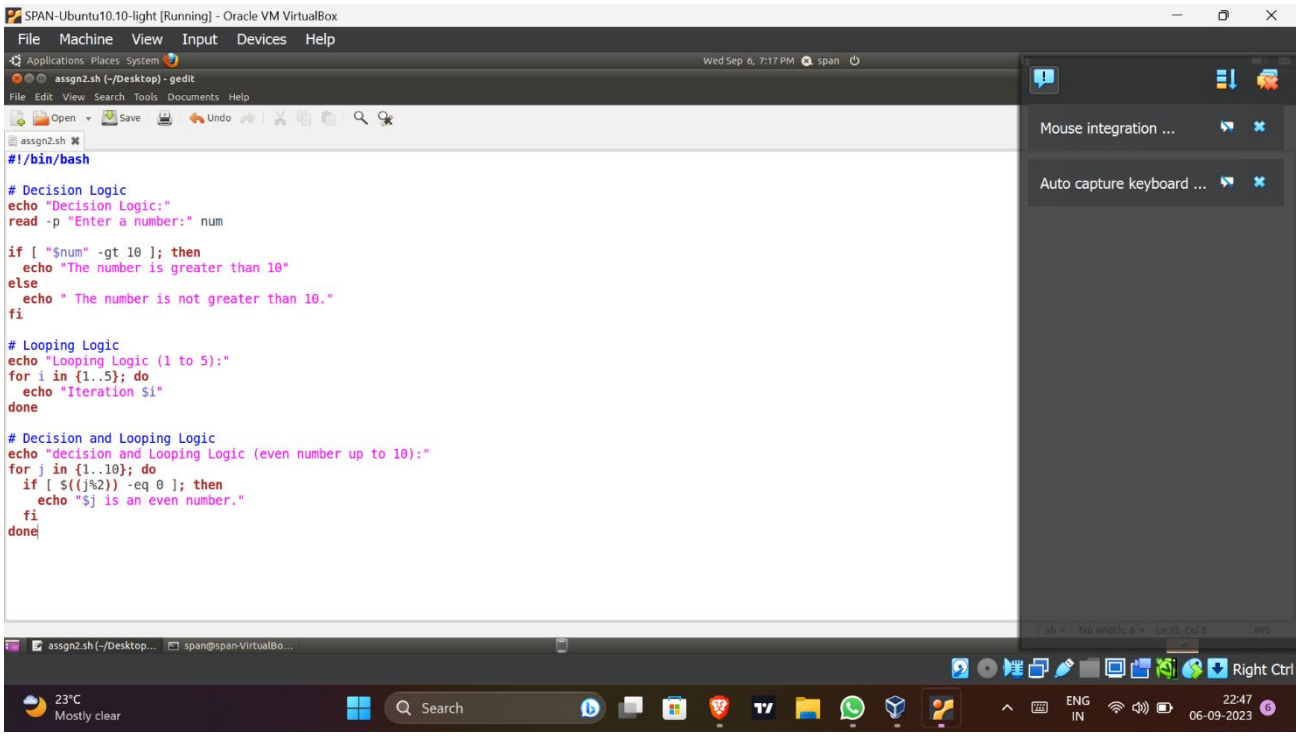
4. Decision and Looping Logic:

- Decision and looping logic can be combined to solve more complex problems.
- In the script, decision and looping logic are combined in the section where it iterates through numbers from 1 to 10.
- Inside the loop, a decision is made for each number by checking whether it's even or not using the modulo operator **%**.
- The decision to print that a number is even is based on the result of this condition.
- Combining decision and looping logic allows you to perform conditional actions on a series of items, which can be useful for tasks like filtering data or processing elements based on specific criteria.

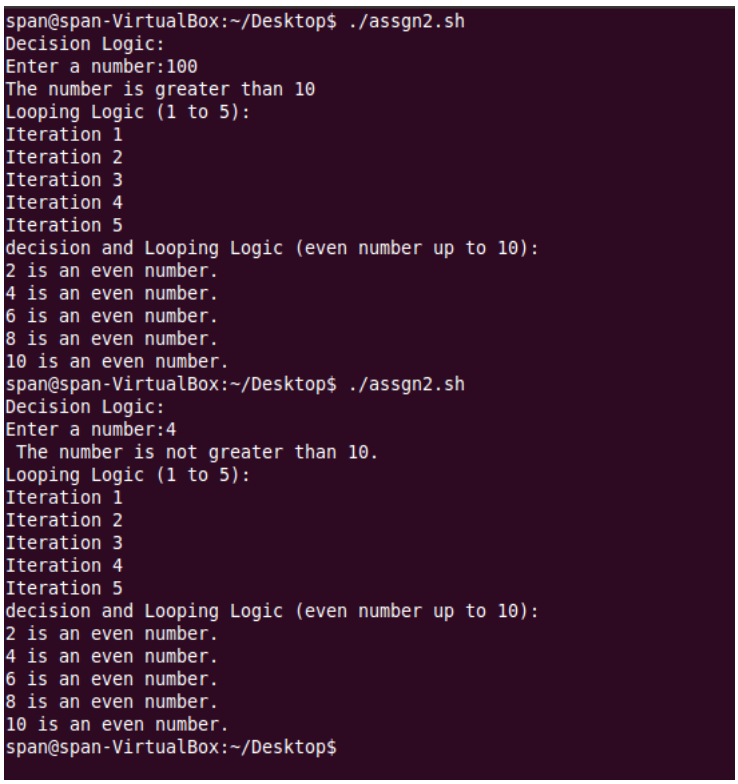
Software Requirements:

Linux Operating System

Program:



Results of Experimentation:



Conclusion:

In conclusion, the script provided demonstrates the fundamental concepts of decision logic, looping logic, and their combination. These concepts are essential in programming for making choices, automating repetitive tasks, and solving a wide range of problems efficiently.