Session - 11

Shell Scripting in Linux – A Beginner's Guide

✅ What is Shell Scripting?

A **shell script** is a text file containing a series of **commands** that the shell can execute. It's used for **automation** — to perform tasks like file management, backups, installations, and system monitoring.

Shell: Interface between the user and the Linux OS (e.g., bash, sh, zsh)

📄 Basic Structure of a Shell Scrip

```
#!/bin/bash        # Shebang line – tells the system to use bash

echo "Hello, World" # Print a message

# This is a comment
```

Save as myscript.sh, then:

```
chmod +x myscript.sh  # Make it executable
./myscript.sh         # Run it
```

🧠 Shell Script Components

Component	Purpose
echo	Displays text
read	Gets user input
if, else, elif	Conditional logic
for, while	Loops
$1, $2, $@	Positional arguments
exit	Exits script
functions	Code reuse

🧪 Examples

1. Read Input

```
#!/bin/bash

echo "Enter your name:"

read name

echo "Hello, $name!"
```

2. If-Else

```
#!/bin/bash
if [ $1 -gt 10 ]; then
  echo "Greater than 10"
else
  echo "Less than or equal to 10"
fi
```

Run as:

```
./myscript.sh 15
```

3. For Loop

```
#!/bin/bash
for i in 1 2 3 4 5
do
  echo "Number $i"
done
```

4. Function Example

```
#!/bin/bash

greet() {

  echo "Hello, $1"

}

greet "shining”
```

📂 Running Shell Scripts

- ./script.sh — run in current shell
- bash script.sh — run using bash shell

📌 Best Practices

- Use comments for clarity.
- Use double quotes around variables: "$var"
- Check input validity.
- Handle errors with if and exit.