Session - 12

Shell Scripting – File Test Operators (-f, -d, -e, etc.)

🔍 What is a File Test Operator?

In shell scripting, **file test operators** are used to check the **type**, **existence**, and **permissions** of files and directories.

They are commonly used in if conditions like:

```
if [ -f filename ]; then
  echo "File exists"
fi
```

🧪 Common File Test Operators

Operator	Meaning
-e	File **exists** (any type)
-f	File **exists and is a regular file**
-d	File **is a directory**
-r	File is **readable**
-w	File is **writable**
-x	File is **executable**
-s	File **is not empty**
!	**Negation** operator (e.g. ! -f)

📜 **Example 1: Check if a file exists**

```
#!/bin/bash
if [ -f "myfile.txt" ]; then
  echo "myfile.txt exists and is a regular file."
else
  echo "File not found."
fi
```

📜 **Example 2: Check if a directory exists**

```
#!/bin/bash
if [ -d "/home/ponanna" ]; then
  echo "Directory exists"
else
  echo "Directory not found"
fi
```

📜 **Example 3: Check read/write/execute permissions**

```
#!/bin/bash
file="script.sh"

if [ -r "$file" ]; then
  echo "$file is readable"
fi

if [ -w "$file" ]; then
  echo "$file is writable"
fi

if [ -x "$file" ]; then
  echo "$file is executable"
fi
```

📜 **Example 4: Negation**

```
#!/bin/bash
if [ ! -f "data.csv" ]; then
  echo "data.csv does not exist."
fi
```

📌 Summary

Use file test operators inside if statements like:

[-f file]

[-d dir]

[-e name]

For better scripting, always check if a file or directory exists **before** accessing it.