Bash Test Operator Quick Reference (from Hal Pomeranz Session)

The `operator (often used as[ … ]or[[ … ]]` in Bash) allows you to check file types, permissions, string conditions, and compare numbers. This is essential for writing conditionals and automation in your shell scripts.

Files and Directories

[[-f “$file”]] — true if $file exists and is a regular file

[[-d “$dir”]] — true if $dir exists and is a directory

-r -w -x — check if file is readable, writable, or executable

[[“$obj1” -nt “$obj2”]] — $obj1 last modified after $obj2

[[“$obj1” -ot “$obj2”]] — $obj1 last modified before $obj2

Strings

== — string equality
!= — string inequality
< — less than (ASCII order)
> — greater than (ASCII order)
[[-z “$str”]] — true if length of $str is zero
[[-n “$str”]] — true if length of $str is non-zero

Numbers

-eq — equal
-ne — not equal
-lt — less than
-le — less than or equal
-gt — greater than
-ge — greater than or equal

Example Bash Conditionals

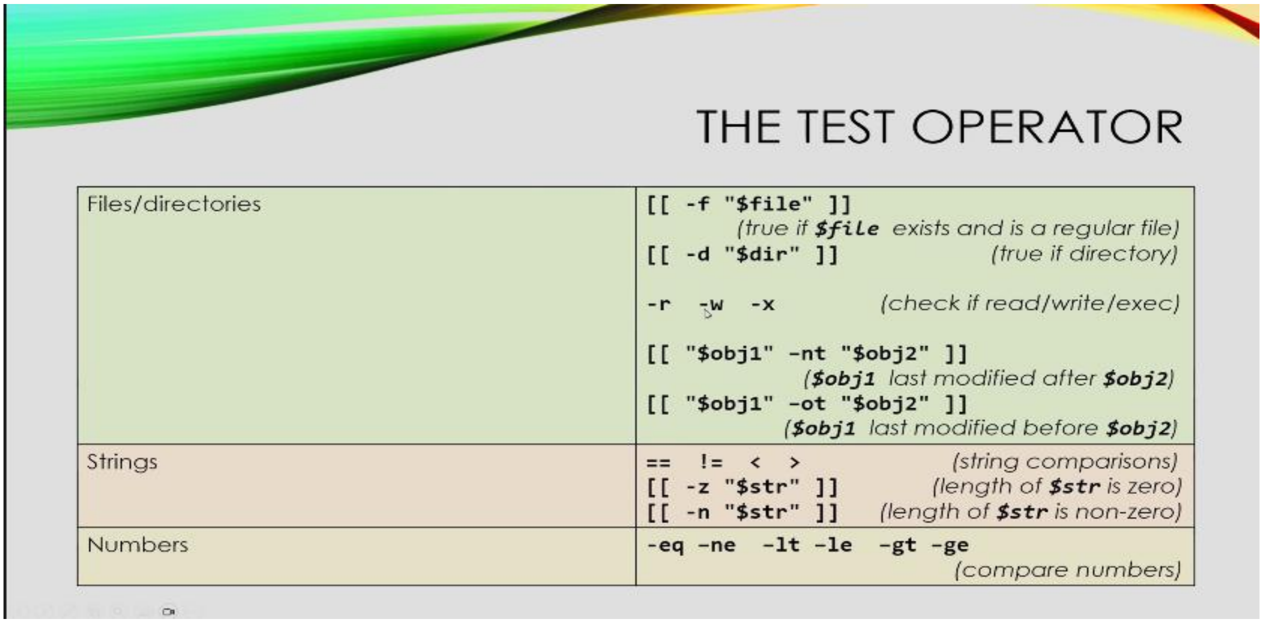
```bash
# File exists and is writable
if [[ -f myfile.txt && -w myfile.txt ]]; then
    echo "myfile.txt exists and is writable!"
fi

# String is non-empty
if [[ -n "$USERNAME" ]]; then
    echo "Username: $USERNAME"
fi

# Number comparison
count=7
if [[ $count -gt 5 ]]; then
    echo "Count is greater than five."
fi
```

Pro Tip:

For full details and more flags, run:

```
man bash
```

and look up the section on “CONDITIONAL EXPRESSIONS” and “test”. The Bash man page is your best friend for understanding all possible test operator flags and best practices.



THE TEST OPERATOR

Files/directories	`[[ -f "$file" ]]`
	(true if ***$file*** *exists and is a regular file)*
	`[[ -d "$dir" ]]` *(true if directory)*
	`-r  -w  -x` *(check if read/write/exec)*
	`[[ "$obj1" -nt "$obj2" ]]`
	*(****$obj1*** *last modified after* ***$obj2****)*
	`[[ "$obj1" -ot "$obj2" ]]`
	*(****$obj1*** *last modified before* ***$obj2****)*

Strings	`==  !=  <  >` *(string comparisons)* `[[ -z "$str" ]]` *(length of* ***$str*** *is zero)* `[[ -n "$str" ]]` *(length of* ***$str*** *is non-zero)*
Numbers	`-eq -ne  -lt -le  -gt -ge` *(compare numbers)*

(Screenshot: Hal’s slide on the Test Operator was presented during the USCC 2025 Eastern Region camp. For more live Bash scripting, see Hal’s full session or reference slides.)