

# Shell Scripting Basics - Cheat Sheet

## 1. What is a Shell Script?

A shell script is a text file containing a sequence of shell commands. It is used to automate tasks such as backups, system monitoring, and administrative routines.

Example:

```
#!/bin/bash
echo "Welcome to Linux Administration"
```

## 2. Role of the Shebang (#!)

The shebang is the first line in a script indicating the interpreter.

Examples:

```
#!/bin/bash    -> Use Bash
#!/bin/sh      -> Use default shell
#!/usr/bin/env python3 -> Use Python 3
```

Without a shebang, the shell interpreter defaults to the user's current shell.

## 3. Bash vs Zsh + Changing Shell

Bash is the default shell on many systems, while Zsh offers more features like plugin support and improved autocompletion.

Change default shell with:

```
chsh -s /bin/zsh
```

Available shells: `cat /etc/shells`

## 4. Greet Script

```
#!/bin/bash
read -p "Enter your name: " user_name
echo "Hello, $user_name!"
```

## 5. File Permissions

Permissions control script access and execution.

```
chmod +x script.sh    -> Make executable
```

```
chmod 755 script.sh   -> Set rwxr-xr-x
```

```
chown user script.sh  -> Change file owner
```

```
chgrp group script.sh -> Change group ownership
```

Permissions: r = read, w = write, x = execute