Linux Script Writing Lesson Plan

Learning Objectives

* Students will understand basic Linux script structure
* Students will create and execute a simple Linux script
* Students will develop a backup script for directories
* Students will demonstrate proper script documentation

Part 1: Introduction to Linux Scripts (15 minutes)

What is a Linux Script?

* A text file containing commands that can be executed automatically
* Helps automate repetitive tasks
* Always starts with a shebang line:#!/bin/bash

Basic Script Components

1. Shebang line `#!/bin/bash`
2. Comments (using #)
3. Commands
4. Variables
5. Permissions

Part 2: Creating Your First Script (20 minutes)

Step-by-Step Guide

1. Open Visual Studio Code
2. Create a new file called `myfirstscript.sh`
3. Add the following code:

````
```bash
#!/bin/bash
````

My first Linux script

```
echo "Hello, World!"
echo "Today's date is: $(date)"
echo "My username is: $USER"
```
```

Executing the Script

1. Save the file
2. Open terminal
3. Navigate to file location
4. Make file executable:

```bash
chmod +x myfirstscript.sh
```

5. Run the script:

```bash
./myfirstscript.sh
```

Part 3: Creating a Backup Script (20 minutes)

Backup Script Tutorial

```bash
#!/bin/bash
```

Simple backup script

Created by: [Student Name]

Date: [Current Date]

Define variables

```
source_dir="/home/user/documents"
backup_dir="/home/user/backup"
date_stamp=$(date +%Y-%m-%d)
```

Create backup directory if it doesn't exist

```
mkdir -p $backup_dir
```

Create backup

```
tar -czf $backup_dir/backup-$date_stamp.tar.gz $source_dir
```

The print completion message
will

```
echo "Backup completed successfully!"
echo "Backup saved as: backup-$date_stamp.tar.gz"
```

```

### Testing the Backup Script

1. Save as `backup.sh`
2. Make executable
3. Test with a small directory
4. Verify backup file creation

## Extension Activities

* Modify the backup script to include multiple directories
* Add error checking to the script
* Create a script to automate a different task
* Add a log file to track backup history

Remember: Always test scripts in a safe environment first!
```

Assessment Rubric

Category	Criteria	Points
Script Structure (25 points)	Proper shebang line	5 pts
	Clear comments	10 pts
	Logical organization	10 pts
Functionality (25 points)	Script executes without errors	15 pts
	Performs intended tasks	10 pts
Documentation (25 points)	Clear description of purpose	10 pts
	Well-documented variables	5 pts
	Usage instructions included	10 pts
Best Practices (25 points)	Proper permissions set	10 pts
	Error handling included	10 pts
	Efficient code structure	5 pts
Total		**100 points**