Ubuntu Linux Practical Exam Guide (1-10)

This guide covers all 10 practical tasks listed in your exam syllabus.

Practical 1: Directory Structure & File Operations

Goal: Create a specific directory tree and perform copy, move, and delete operations.

Step 1: Create the Directory Structure

Run the following commands one by one (or paste them) to create the tree:

```
# Create directories ( -p creates parent directories automatically)
mkdir -p ~/Study/GNU/DCS/IT
mkdir -p ~/Study/GNU/DCS/CS
mkdir -p ~/Study/GNU/Engineering/Computer
mkdir -p ~/Study/GNU/Engineering/Civil
mkdir -p ~/Study/HNGU/BBA

# Create the required files in the CS directory
touch ~/Study/GNU/DCS/CS/DivA.txt
touch ~/Study/GNU/DCS/CS/DivB.txt
touch ~/Study/GNU/DCS/CS/DivC.txt
touch ~/Study/GNU/DCS/CS/Sports
touch ~/Study/GNU/DCS/CS/Marksheet
```

Step 2: Perform the Operations

Operation A: Copy ALL Files of CS Directory to Engineering > Civil

```
cp ~/Study/GNU/DCS/CS/* ~/Study/GNU/Engineering/Civil/
```

Operation B: Remove all Files of Civil with Interactive mode

```
# -i asks for confirmation before deleting
rm -i ~/Study/GNU/Engineering/Civil/*
```

(Type 'y' and Enter for each file prompt)

Operation C: Move files starting with ‘S’ and ‘M’ from CS to Computer

```
mv ~/Study/GNU/DCS/CS/[SM]* ~/Study/GNU/Engineering/Computer/
```

Operation D: Set Engineering as PWD and Delete Directory Structure of Civil interactively

```
# Change directory (PWD means Present Working Directory)
cd ~/Study/GNU/Engineering
```

```
# Delete Civil directory recursively (-r) and interactively (-i)
rm -ri Civil
```

Practical 2: Shell Script for Adding Two Numbers

1. Open a new file: nano add_two.sh
2. Type the code:

<!-- end list -->

```
#!/bin/bash
echo "Enter first number:"
read n1
echo "Enter second number:"
read n2
sum=`expr $n1 + $n2`
echo "Addition is: $sum"
```

1. Save (Ctrl+O, Enter) and Exit (Ctrl+X).
2. Run: bash add_two.sh

Practical 3: Shell Script - For Loop (Addition of N numbers)

1. Open a new file: nano add_n_loop.sh
2. Type the code:

<!-- end list -->

```
#!/bin/bash
echo "Enter how many numbers you want to add (N):"
read N
sum=0

echo "Enter the numbers:"
for (( i=1; i<=N; i++ ))
do
    read num
    sum=`expr $sum + $num`
done

echo "Total Sum is: $sum"
```

1. Save and Exit.
2. Run: bash add_n_loop.sh

Practical 4: Assign Root Privilege to Normal Users

To give a normal user "Root" (Administrator) privileges, you usually add them to the sudo group.

Command:

```
# Syntax: sudo usermod -aG sudo <username>
sudo usermod -aG sudo student
```

(Replace 'student' with the actual username)
Verify: Switch to that user and try running a root command (like sudo apt update).

Practical 5: Create Group 'Account' & Register Users

Step 1: Create the Group

```
sudo groupadd Account
```

Step 2: Create Users (emp1 to emp4) and add them to the group

```
# -m creates home directory, -g assigns primary group
sudo useradd -m -g Account emp1
sudo useradd -m -g Account emp2
sudo useradd -m -g Account emp3
sudo useradd -m -g Account emp4
```

Step 3: Set Passwords for them

```
sudo passwd emp1
# (Enter password twice. Repeat for emp2, emp3, emp4)
```

Practical 6: Assign Rights (Creating/Deleting Users) to Group

To let members of the **Account** group manage users (adduser, userdel, passwd), you must edit the sudoers file.

1. Open the sudo configuration:
   `sudo visudo`

2. Scroll to the bottom and add this line:
   `%Account ALL=(ALL) /usr/sbin/useradd, /usr/sbin/userdel, /usr/bin/passwd`
   (This allows anyone in the 'Account' group to run useradd, userdel, and passwd commands as root).
3. Save and Exit (Ctrl+O, Enter, Ctrl+X).

Practical 7: Shell Script - Calculator (Case Conditional)

1. Open file: nano calculator.sh
2. Type the code:

<!-- end list -->

```
#!/bin/bash
echo "***** Here is the calculator for you *****"
sum=0
ch="y"

echo "Enter first number:"
read n1
echo "Enter second number:"
read n2

while [ "$ch" = "y" ]
do
    echo "1. Addition"
    echo "2. Subtraction"
    echo "3. Multiplication"
    echo "4. Division"
    echo "Enter choice:"
    read choice

    case $choice in
        1) sum=`expr $n1 + $n2`
           echo "Addition is = $sum" ;;
        2) sum=`expr $n1 - $n2`
           echo "Sub is = $sum" ;;
        3) sum=`expr $n1 \* $n2`
           echo "Mul is = $sum" ;;
        4) sum=`expr $n1 / $n2`
           echo "Div is = $sum" ;;
        *) echo "Invalid choice" ;;
    esac

    echo "Do you want to continue (y/n)?"
    read ch
    if [ "$ch" != "y" ]; then
        exit
    fi
done
```

1. Run: bash calculator.sh

Practical 8: Basic Package Management Commands

You need to know these commands for the apt package manager (using tree as an example).

Operation	Command	Description
Update List	sudo apt update	Refreshes list of available software.
Install	sudo apt install tree	Installs the package 'tree'.

Operation	Command	Description
Remove	sudo apt remove tree	Removes package but keeps config files.
Purge	sudo apt purge tree	Removes package AND config files.
Check Install	`dpkg -l	grep tree`
Check Path	which tree	Shows where the file is located.
Clean Up	sudo apt autoremove	Deletes unused dependencies.

Practical 9: Install Google Chrome

Step 1: Download the installer

```
wget
[https://dl.google.com/linux/direct/google-chrome-stable_current_amd64
.deb](https://dl.google.com/linux/direct/google-chrome-stable_current_
amd64.deb)
```

Step 2: Install it

```
sudo dpkg -i google-chrome-stable_current_amd64.deb
```

Step 3: Fix errors (if any) If you see dependency errors, run this command to fix them automatically:

```
sudo apt --fix-broken install
```

Practical 10: Install and Verify Vim Editor

Step 1: Update repositories

```
sudo apt update
```

Step 2: Install Vim

```
sudo apt install vim
```

Step 3: Verify Installation

```
vim --version
```

Step 4: Open and Close Vim (Optional)

- Type vim to open.
- Type :q and hit Enter to exit.

<!-- end list -->