

National Textile University

**Department of Computer Science**

Subject: Operating System

Submitted to: Sir Nasir

Submitted by: Amina

Reg. number: 23-NTU-CS-1136

Lab no.: lab2

Semester:5th

**Operating Systems – COC 3071L**

**SE 5th A – Fall 2025**

# Lab 2: Linux Basics and Introduction

## Part 1: Linux Environment Orientation

### 1.1 Understanding the Linux Environment

**Concepts to Cover:**

What is Linux? Brief history and distributions

Linux vs Windows: Key differences

Understanding the shell (bash)

WSL2 as a Linux environment

**Hands-on Activity:**

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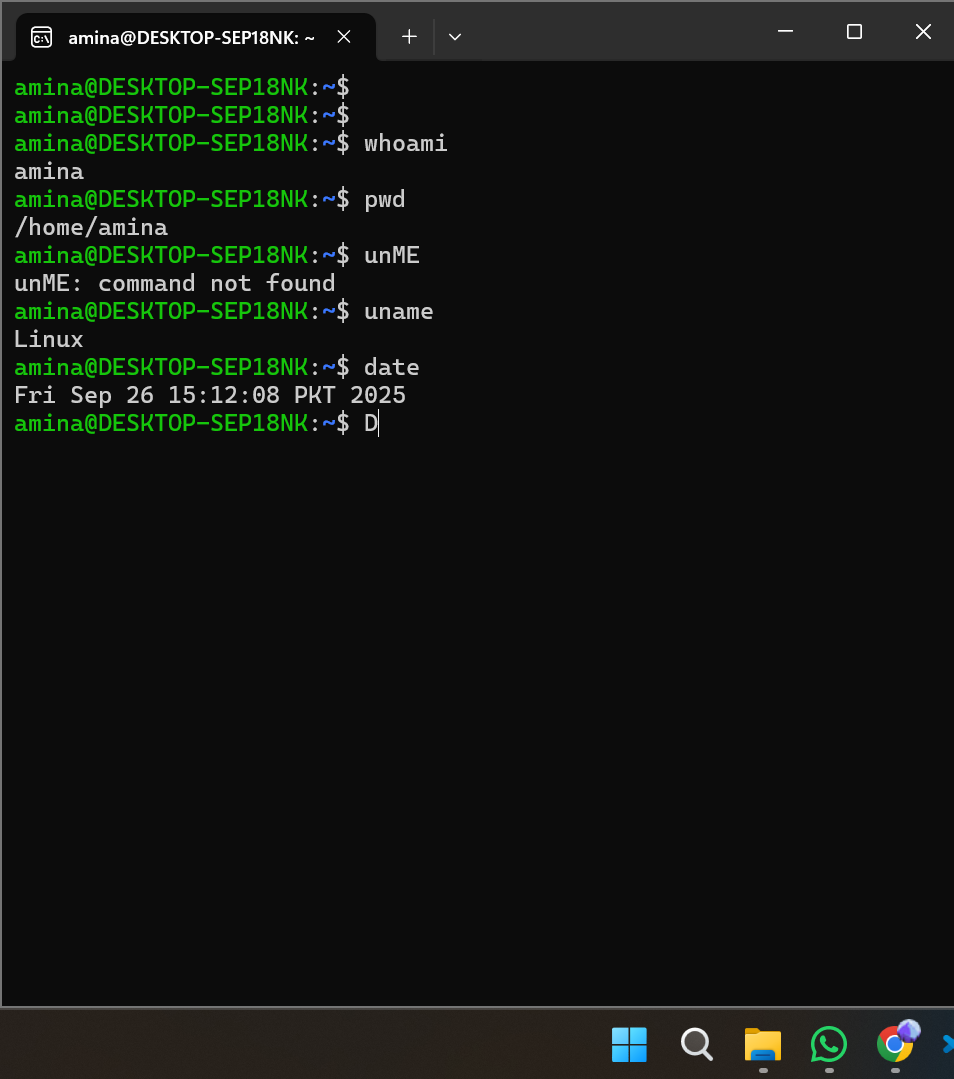
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### 1.2 Getting Help in Linux

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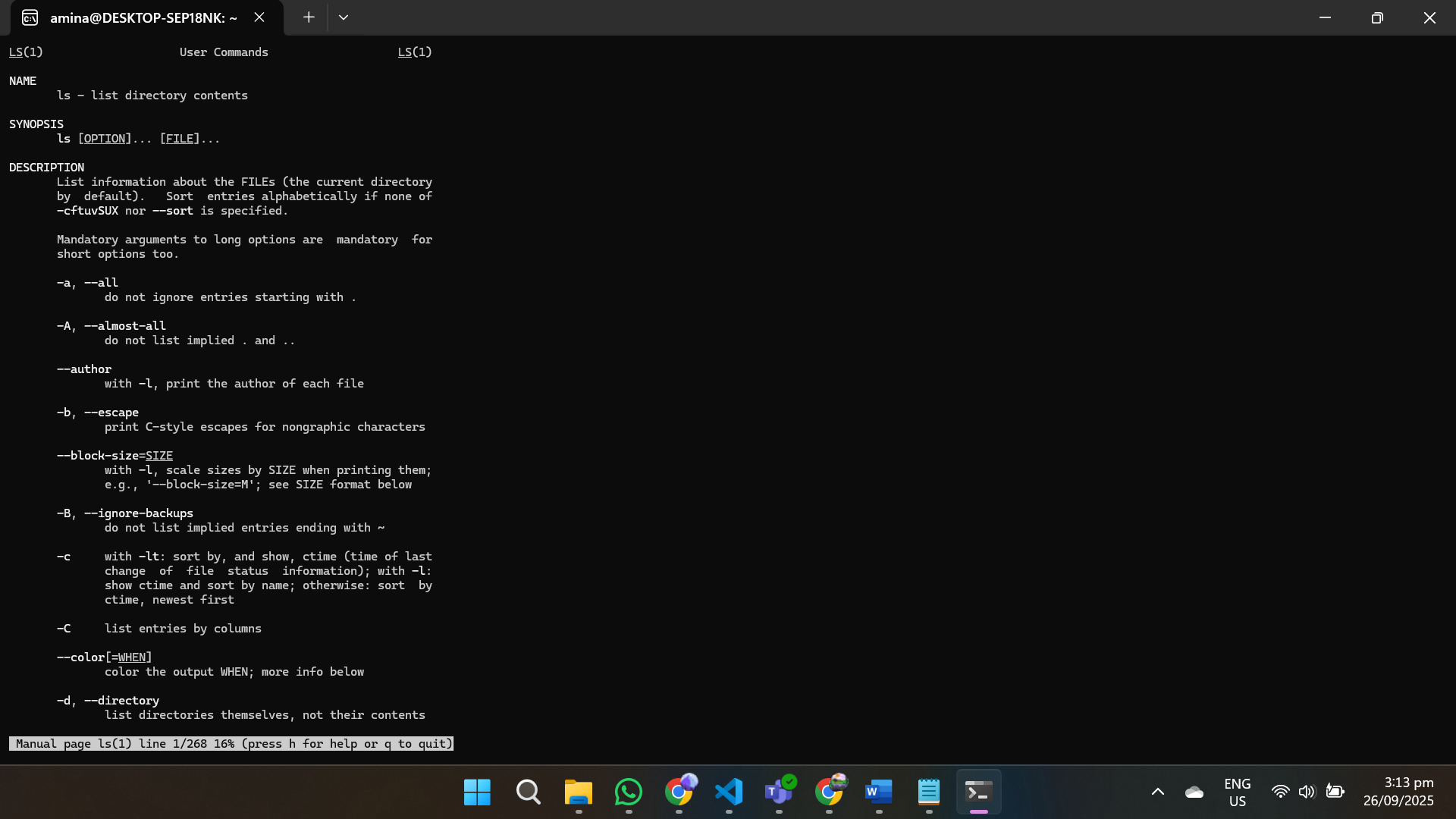
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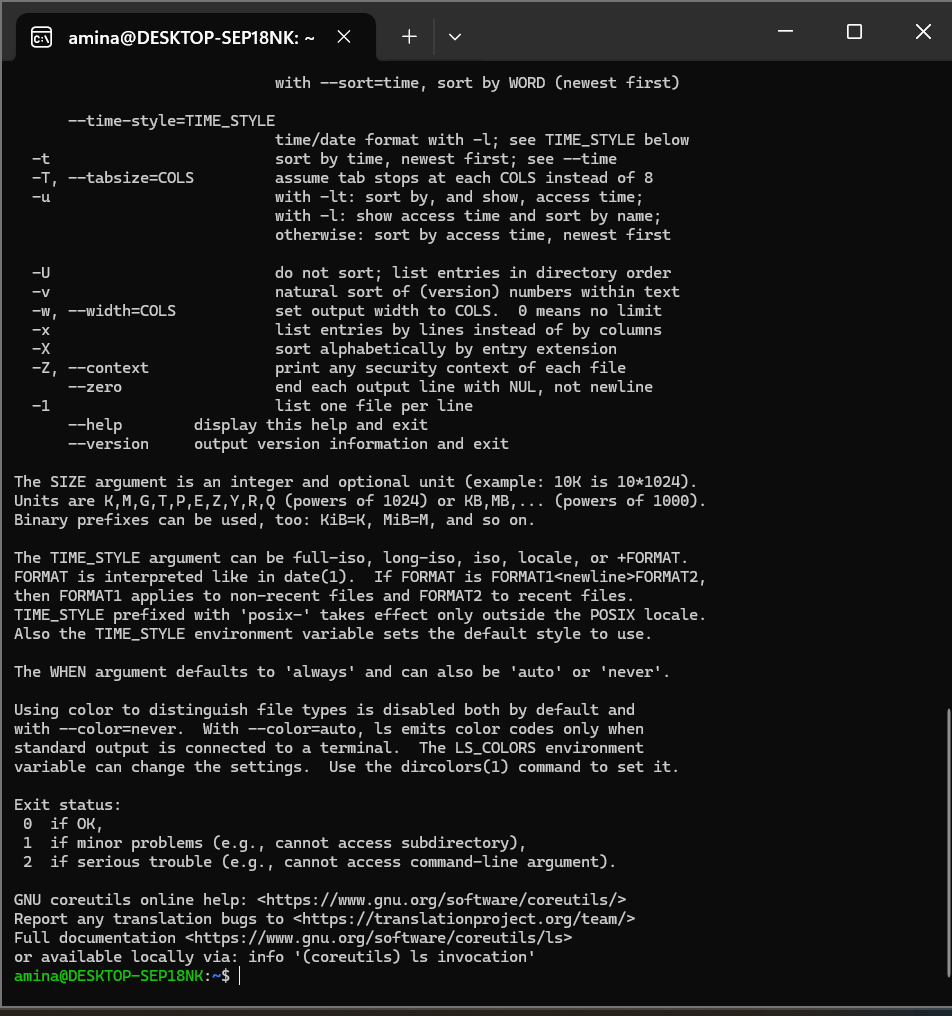
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Command: man ls

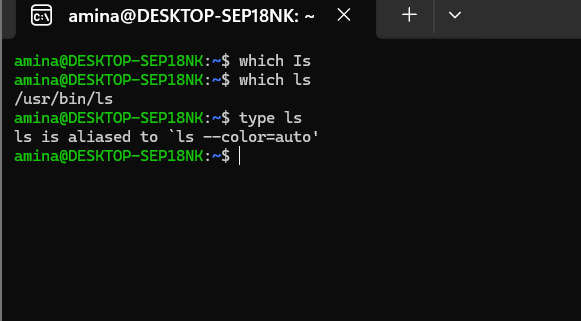


Command: ls –help



Command: which ls

Command: type ls



## Part 2: File System Navigation

### 2.1 Understanding Linux Directory Structure

**Concepts to Cover:**

Root directory (/)

Important directories: /home, /usr, /etc, /var, /tmp

Absolute vs relative paths

Hidden files and directories

**Demonstration:**

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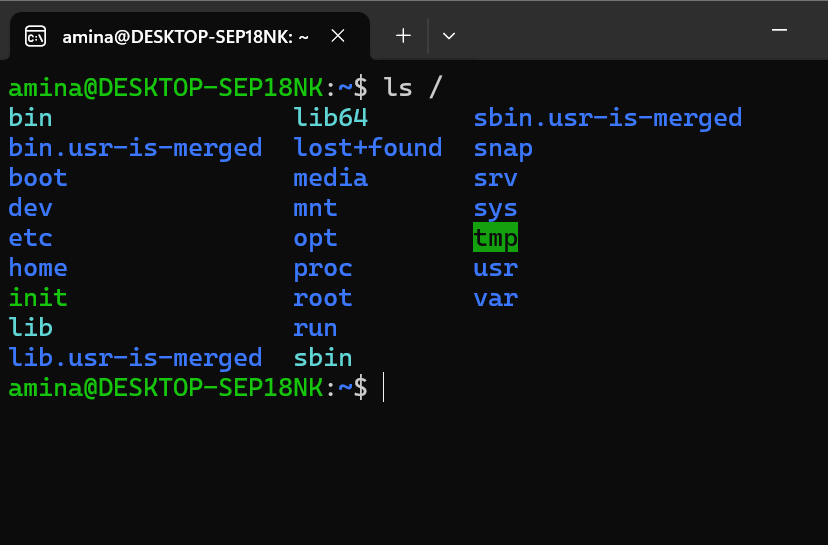
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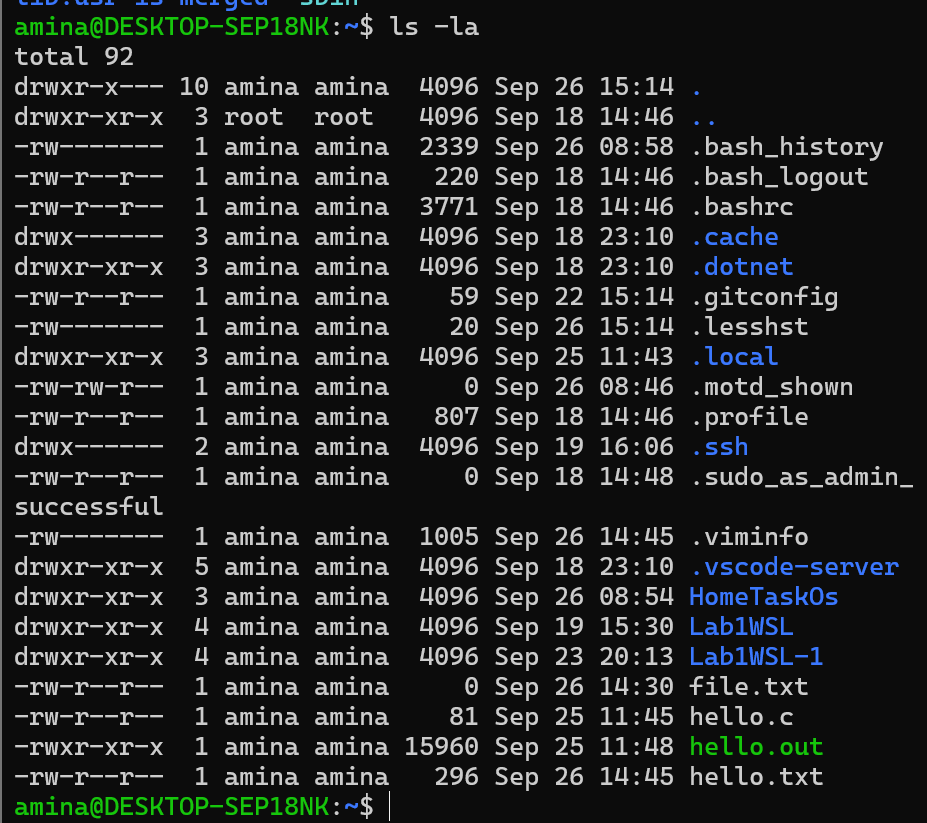
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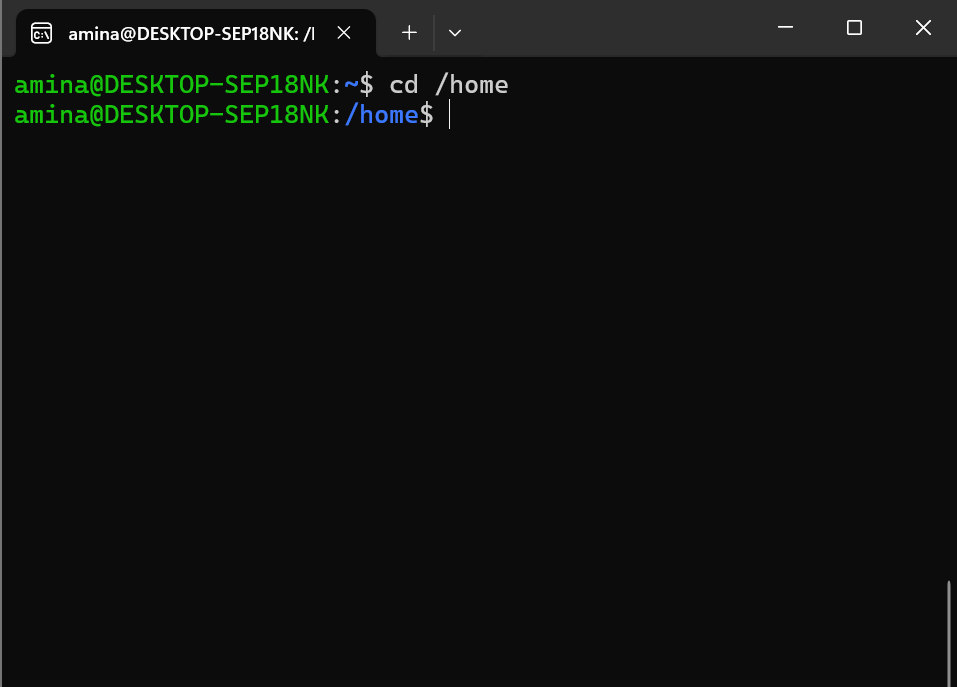
Command: ls /



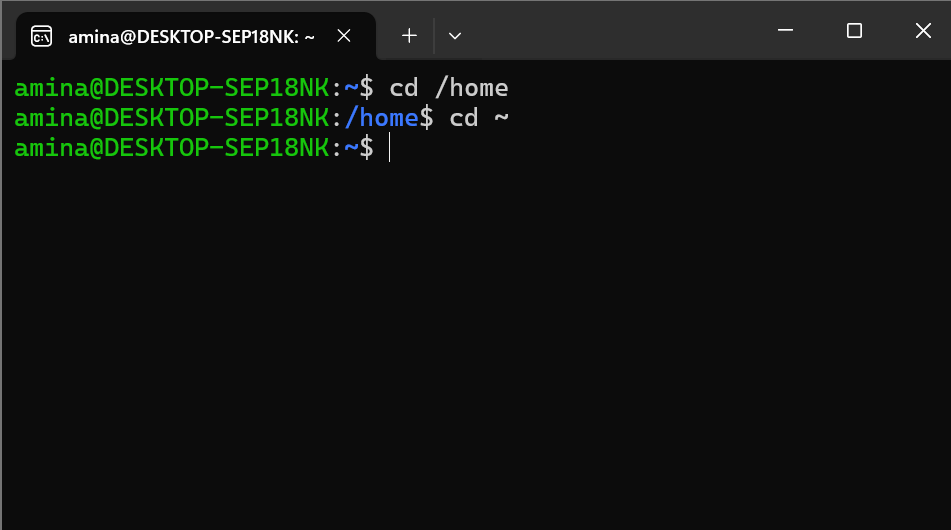
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### 2.2 Basic Navigation Commands (15 minutes)

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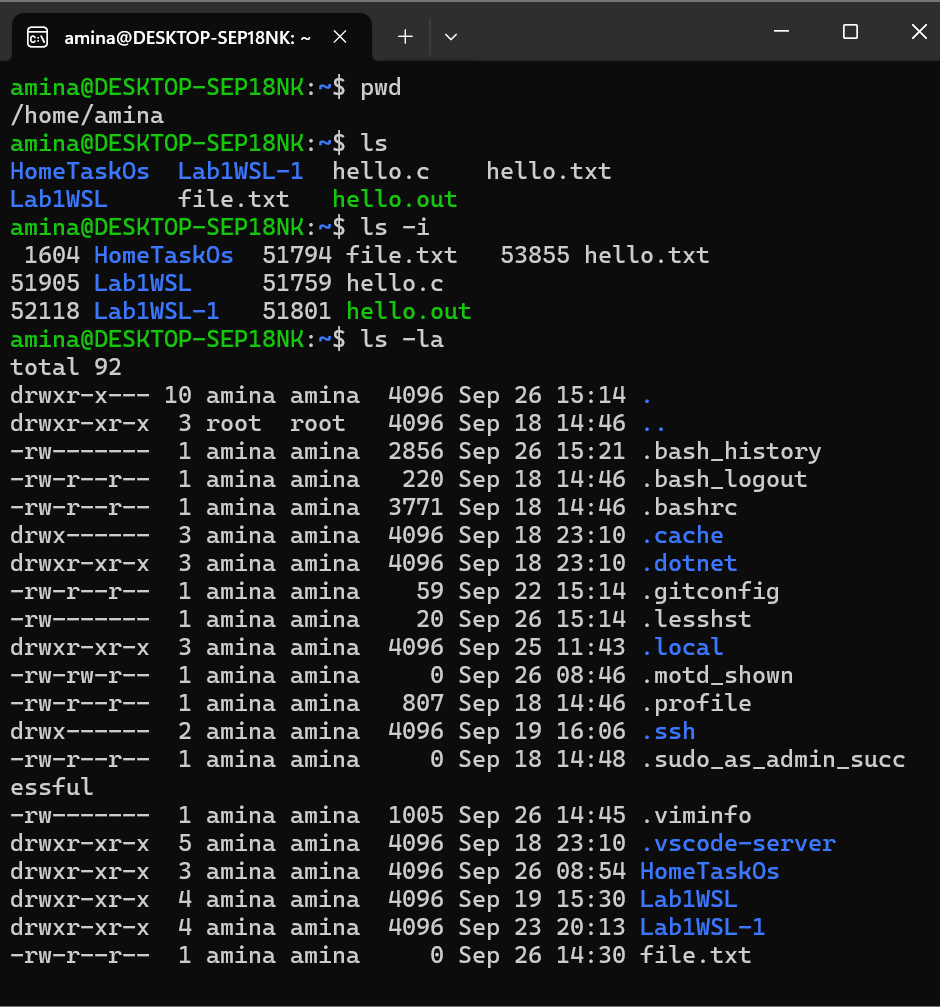
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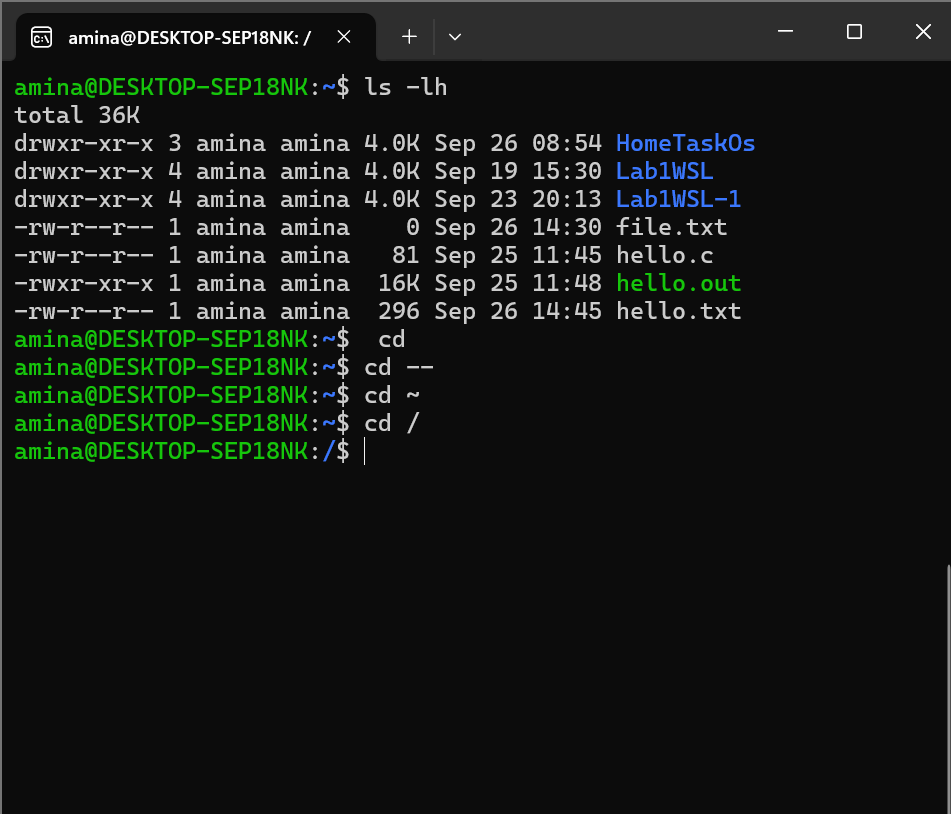
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## Part 3: File and Directory Operations

**\*\*3.1 Creating and Managing Files/Directories**

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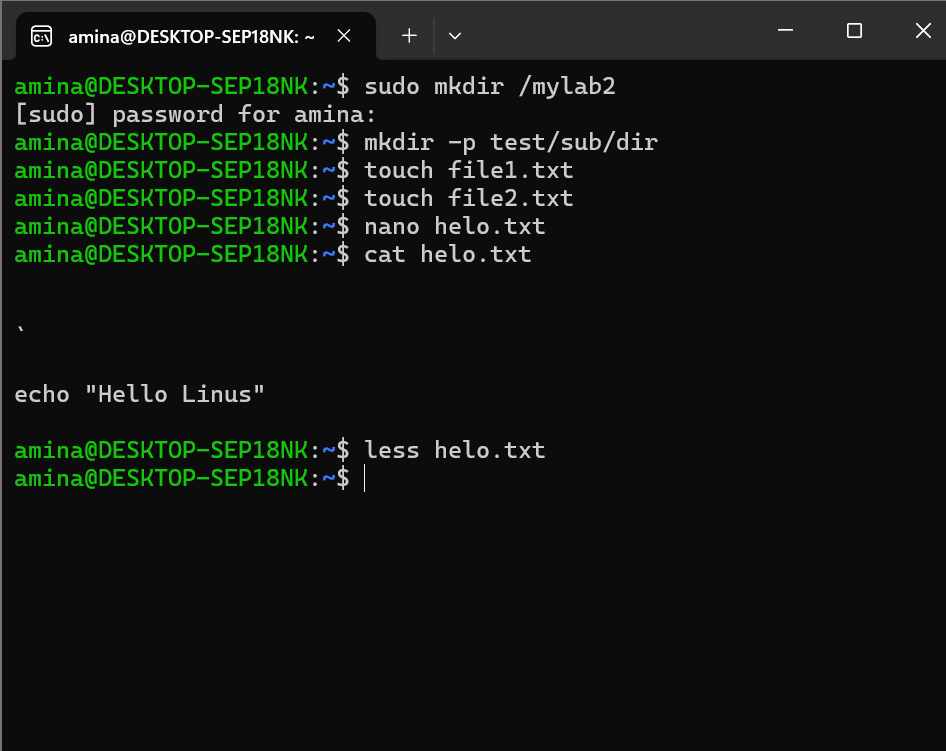
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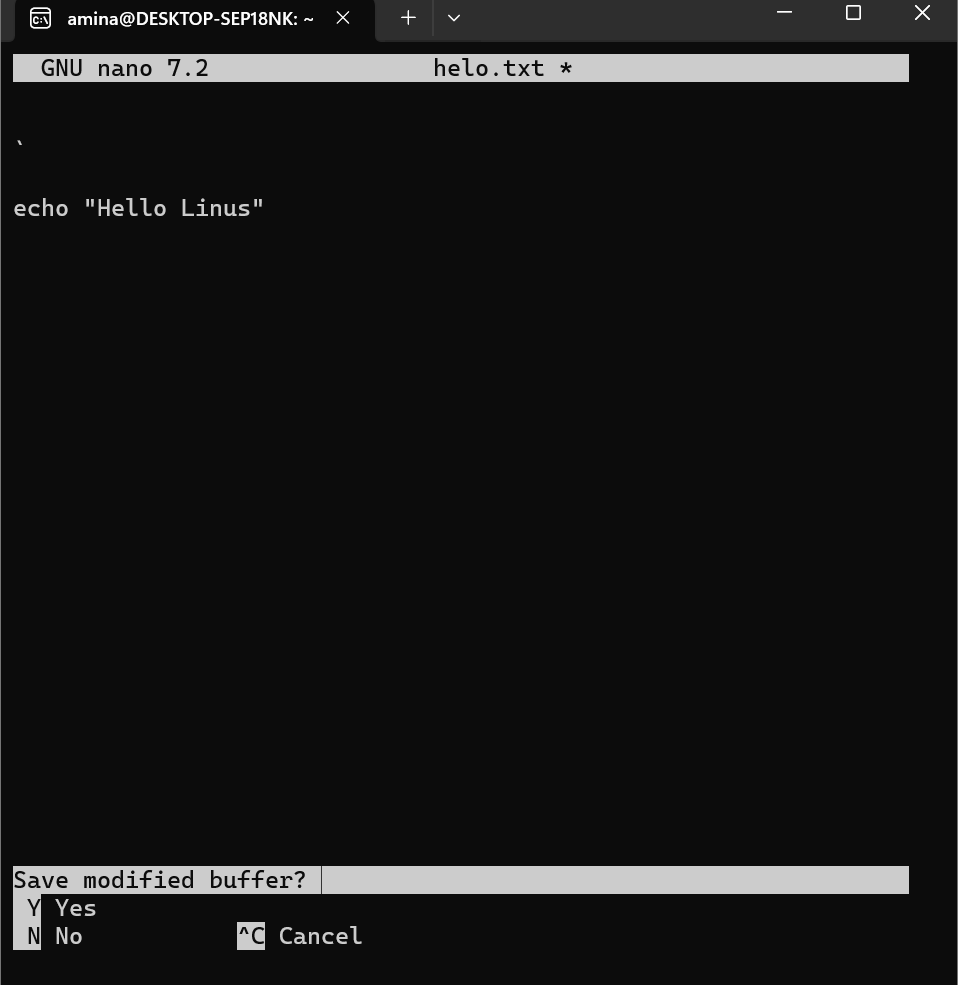
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Command: nano helo.txt

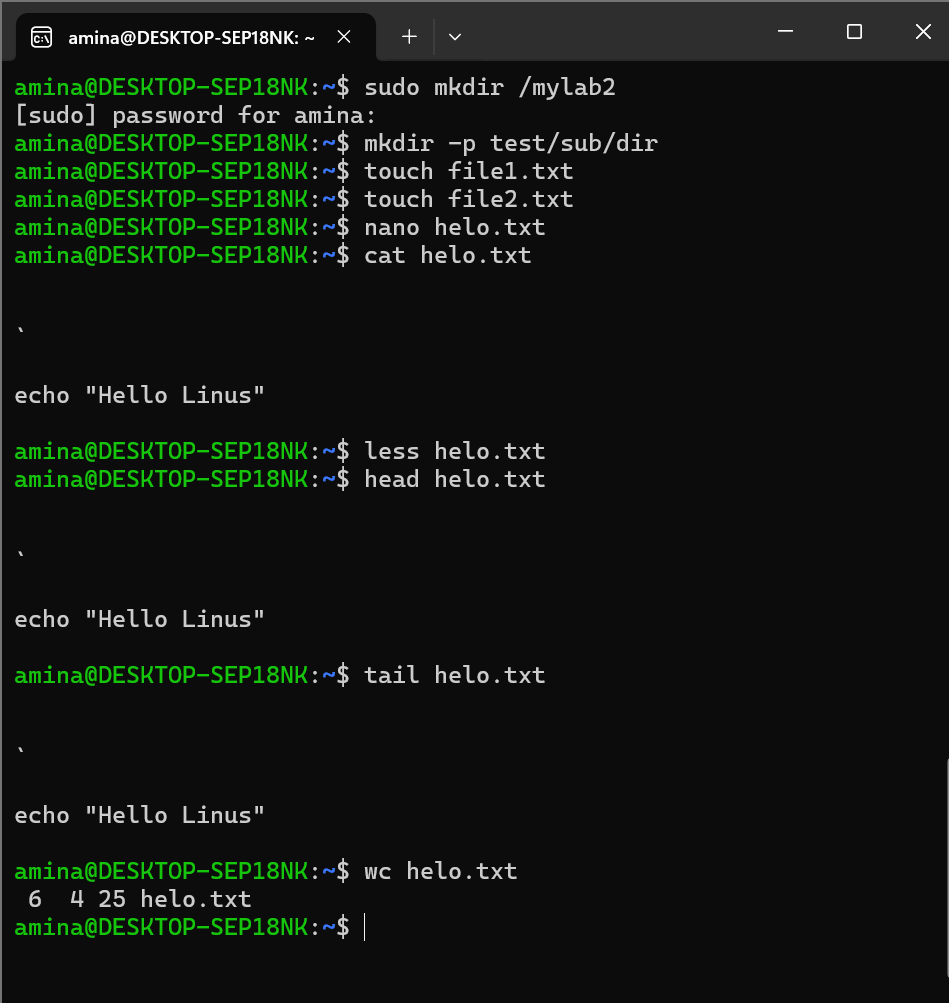


Command:

**head helo.txt**

**tail helo.txt**

**wc helo.txt**





### 3.2 Copying, Moving, and Deleting

**Commands to practice:**

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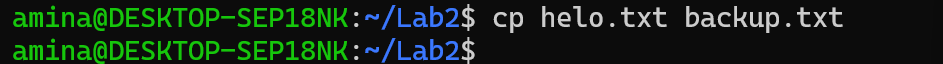
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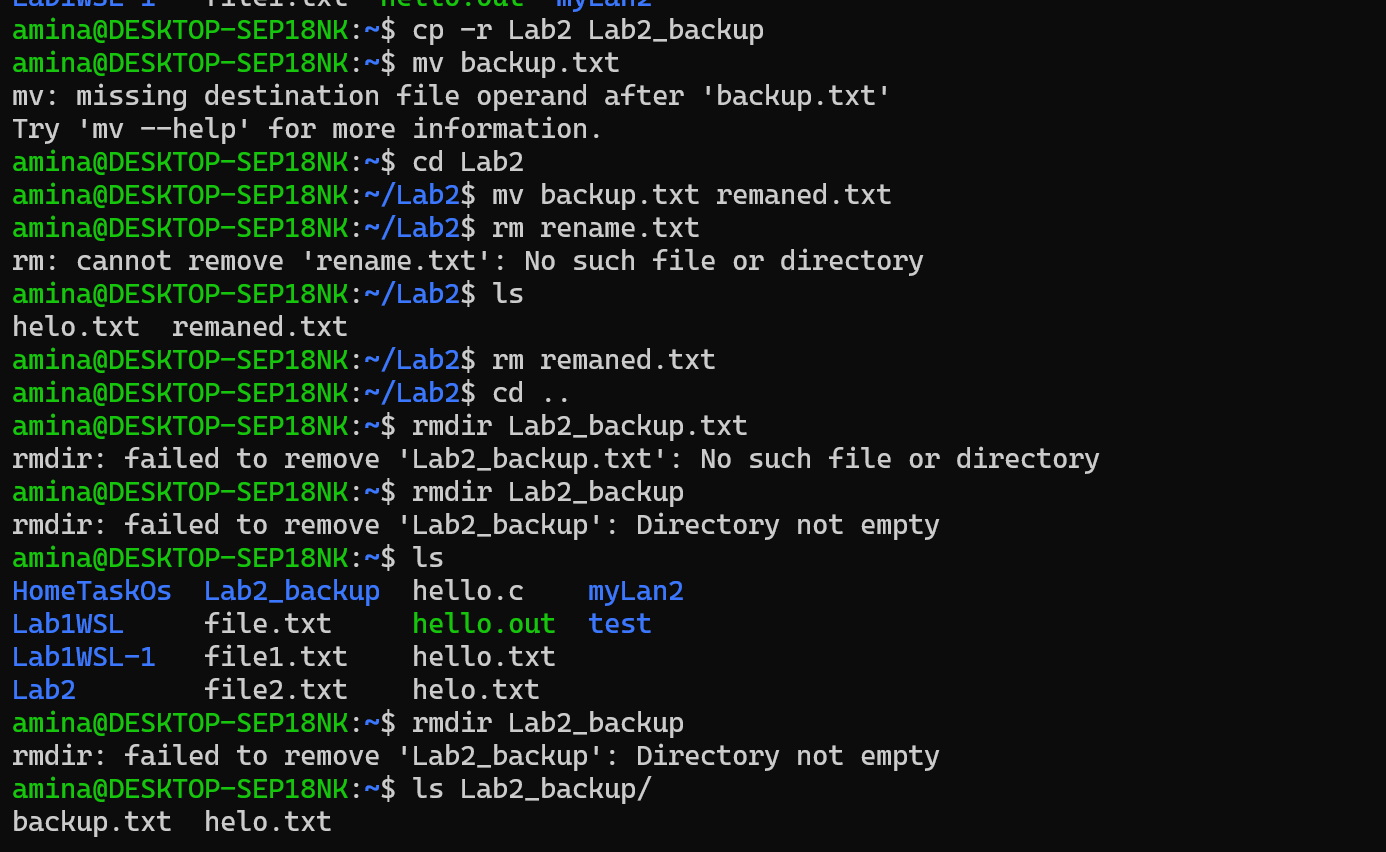
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**Hands-on Exercise:** Students create a directory structure, add files, and practice file operations.

## Part 4: File Permissions and Ownership

### 4.1 Understanding File Permissions

**Concepts to Cover:**

Permission types: read (r), write (w), execute (x)

Permission groups: user (u), group (g), others (o)

Numeric notation: 755, 644, etc.

**Commands to demonstrate:**

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## Part 5: Text Processing and Utilities

### 5.1 Essential Text Commands

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### 5.2 Pipes and Redirection

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## Part 6: Introduction to Processes

### 6.1 Understanding Processes

**Concepts to Cover:**

What is a process?

Process ID (PID)

Parent-child relationships

Process states

**Commands to demonstrate:**

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