



# National Textile University

## Department of Computer Science

**Subject:**

Operating System

**Submitted to:**

Sir Naseer

**Submitted by:**

Ayema

**Reg number:**

23-NTU-CS-1142

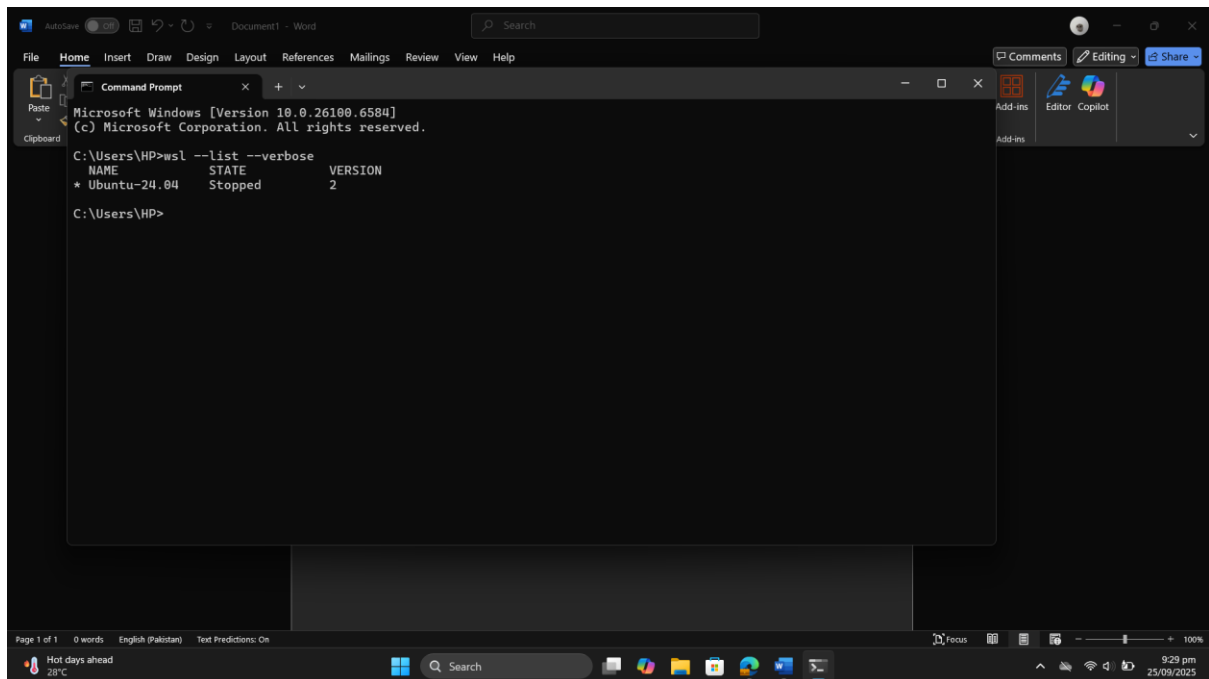
**Lab no. :**

01

**Semester:** 5Th

## PART A:

### 1. Verify WSL2 & Ubuntu Setup:



The screenshot shows a Windows Command Prompt window with the following output:

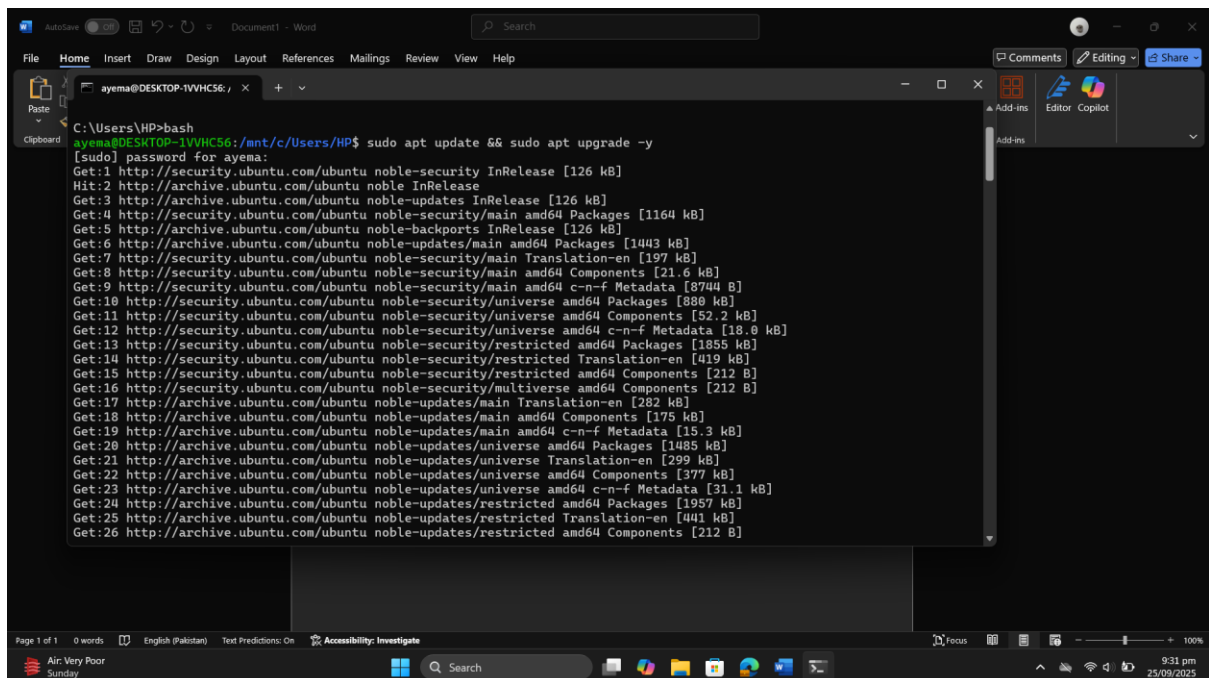
```
Microsoft Windows [Version 10.0.26100.6594]
(c) Microsoft Corporation. All rights reserved.

C:\Users\HP>wsl --list --verbose
NAME                STATE              VERSION
* Ubuntu-24.04      Stopped            2

C:\Users\HP>
```

The window is titled "Command Prompt" and has a search bar at the top. The taskbar at the bottom shows the date and time as 9:29 pm on 25/09/2025.

### 2. Update Ubuntu environment:



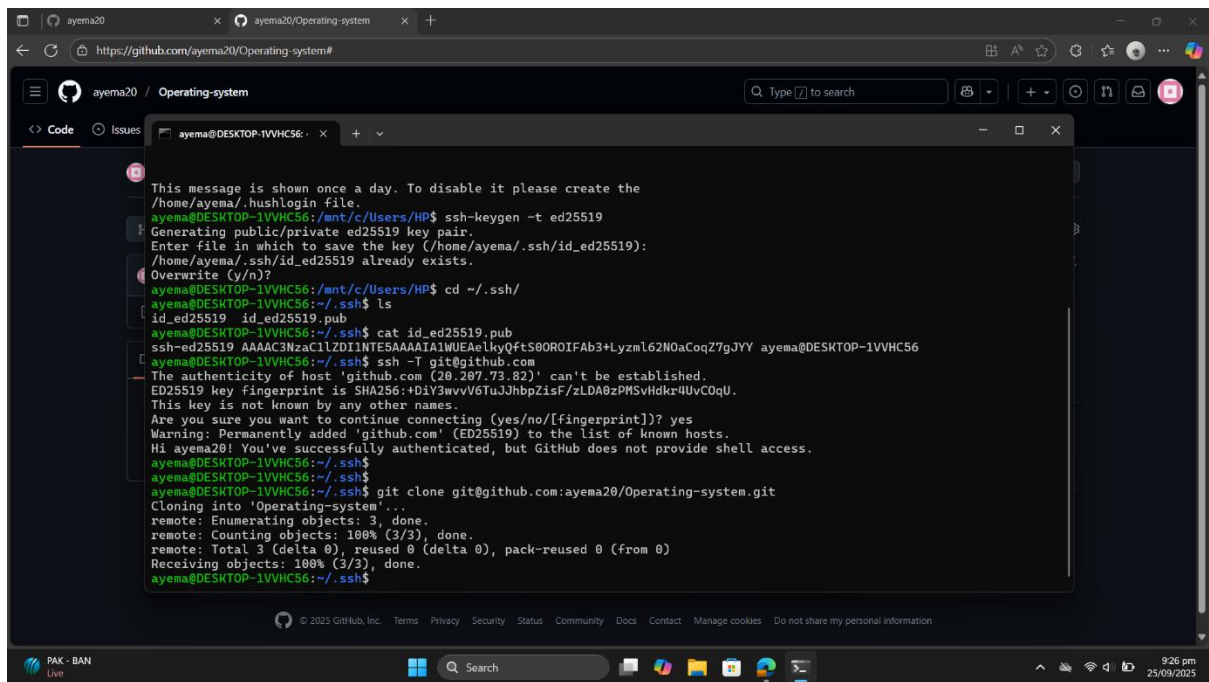
The screenshot shows a Windows Command Prompt window with the following output:

```
C:\Users\HP>bash
ayema@DESKTOP-1VH5C56:/mnt/c/Users/HP$ sudo apt update && sudo apt upgrade -y
[sudo] password for ayema:
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1164 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1442 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [197 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.6 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [8744 B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [880 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [18.0 kB]
Get:13 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [1855 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [419 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:16 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Get:17 http://archive.ubuntu.com/ubuntu noble-updates/main Translation-en [282 kB]
Get:18 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:19 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.3 kB]
Get:20 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1485 kB]
Get:21 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [299 kB]
Get:22 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:23 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.1 kB]
Get:24 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [1957 kB]
Get:25 http://archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [441 kB]
Get:26 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
```

The window is titled "ayema@DESKTOP-1VH5C56: /mnt/c/Users/HP" and has a search bar at the top. The taskbar at the bottom shows the date and time as 9:31 pm on 25/09/2025.

## PART B:

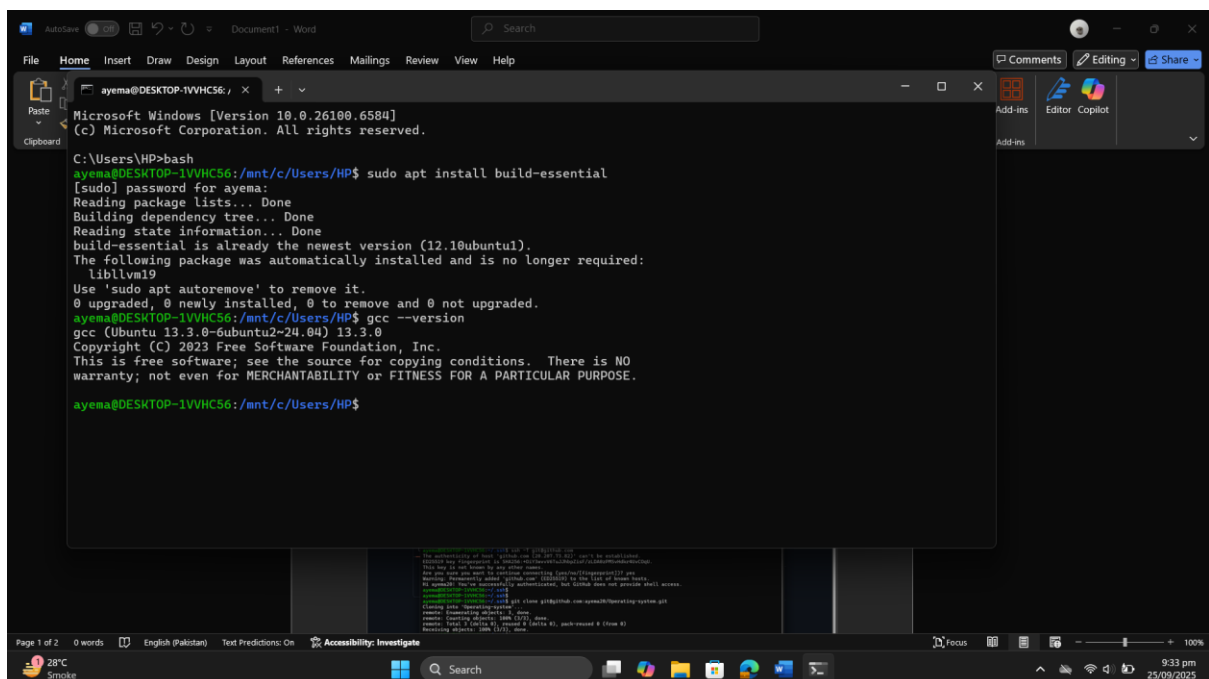
1. Configure Git
2. Generate SSH keys
3. Test Connection



```
ayema20 / Operating-system
This message is shown once a day. To disable it please create the
/home/ayema/.hushlogin file.
ayema@DESKTOP-1VVHC56:/mnt/c/Users/HP$ ssh-keygen -t ed25519
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/ayema/.ssh/id_ed25519):
/home/ayema/.ssh/id_ed25519 already exists.
Overwrite (y/n)?
ayema@DESKTOP-1VVHC56:/mnt/c/Users/HP$ cd ~/.ssh/
ayema@DESKTOP-1VVHC56:~/.ssh$ ls
id_ed25519  id_ed25519.pub
ayema@DESKTOP-1VVHC56:~/.ssh$ cat id_ed25519.pub
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIA1WUEAelkyQftS00R0IFAb3*Lyzm162N0aCoqZ7gJYV ayema@DESKTOP-1VVHC56
ayema@DESKTOP-1VVHC56:~/.ssh$ ssh -T git@github.com
Warning: Permanently added 'github.com' (ED25519) to the list of known hosts.
ED25519 key fingerprint is SHA256:+DiY3wvvV6TuJJhbpZisF/zLDA0zPMSvHdKr4UvC0qU.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'github.com' (ED25519) to the list of known hosts.
Hi ayema20! You've successfully authenticated, but GitHub does not provide shell access.
ayema@DESKTOP-1VVHC56:~/.ssh$
ayema@DESKTOP-1VVHC56:~/.ssh$
ayema@DESKTOP-1VVHC56:~/.ssh$ git clone git@github.com:ayema20/Operating-system.git
Cloning into 'Operating-system'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
ayema@DESKTOP-1VVHC56:~/.ssh$
```

## PART C:

1. Install build tools and check version of gcc

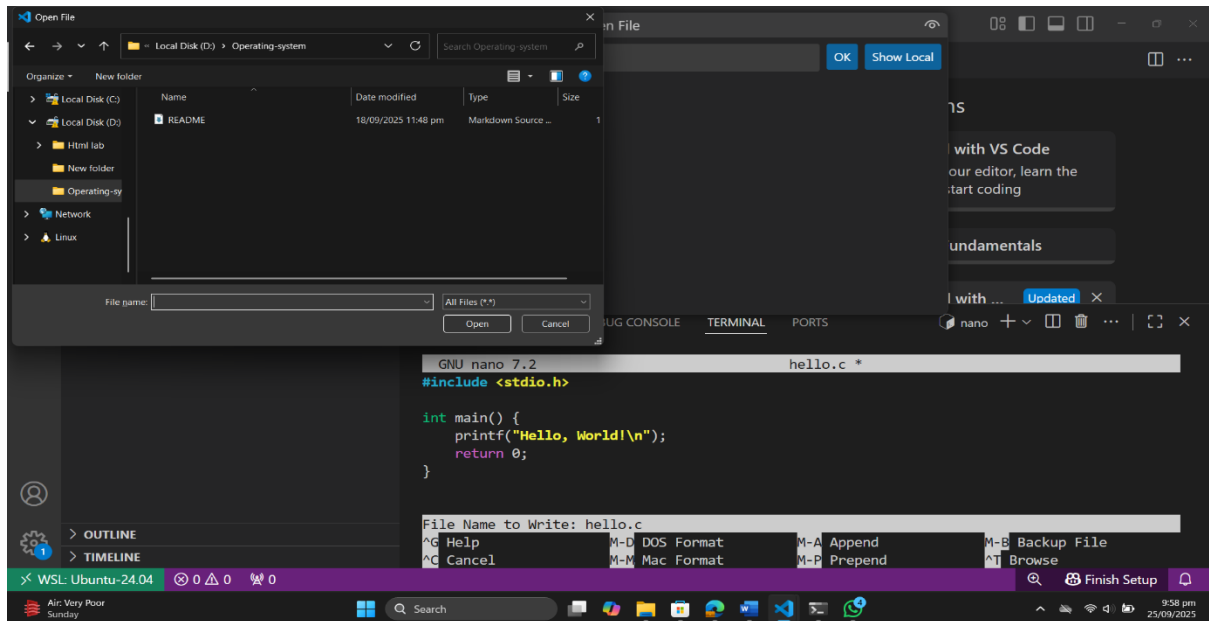


```
C:\Users\HP>bash
ayema@DESKTOP-1VVHC56:/mnt/c/Users/HP$ sudo apt install build-essential
[sudo] password for ayema:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
build-essential is already the newest version (12.10ubuntu1).
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ayema@DESKTOP-1VVHC56:/mnt/c/Users/HP$ gcc --version
gcc (Ubuntu 13.3.0-6ubuntu2~24.04) 13.3.0
Copyright (C) 2023 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

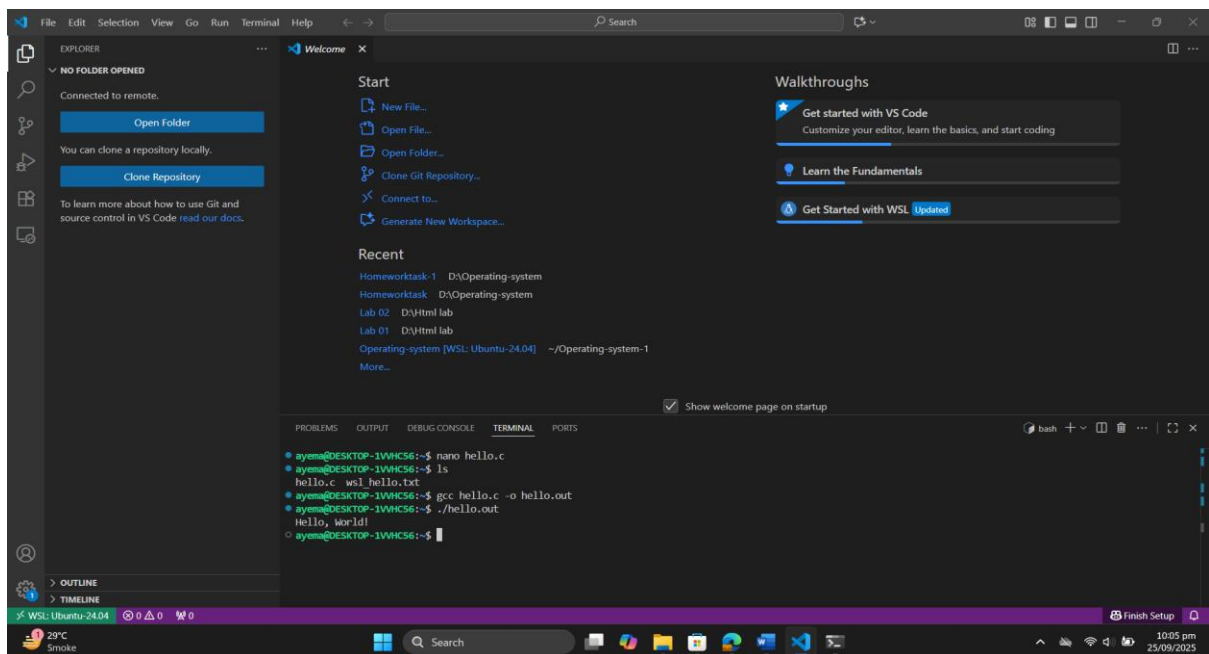
ayema@DESKTOP-1VVHC56:/mnt/c/Users/HP$
```

## 2.Steps to create C Program:

- Open Vs code
- Connect to **ubuntu** and **WSL**
- Open new terminal
- Write nano hello.c
- Write C code
- Press **Ctrl + O**
- Press Enter



- Write gcc hello.c -o hello. Out
- Write **./hello. Out** to check the file



**Source code of c:**

```
#include <stdio.h>

int main() {
    printf("Hello, World!\n");
    return 0;
}
```

**Remarks:**

In this homework, I learnt about how to use ubuntu and create c file by using WSI and connect to github.