



National Textile University

Department of Computer Science

Subject:

Operating System

Submitted to:

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Submitted by:

Ayema

Reg number:

23-NTU-CS-1142

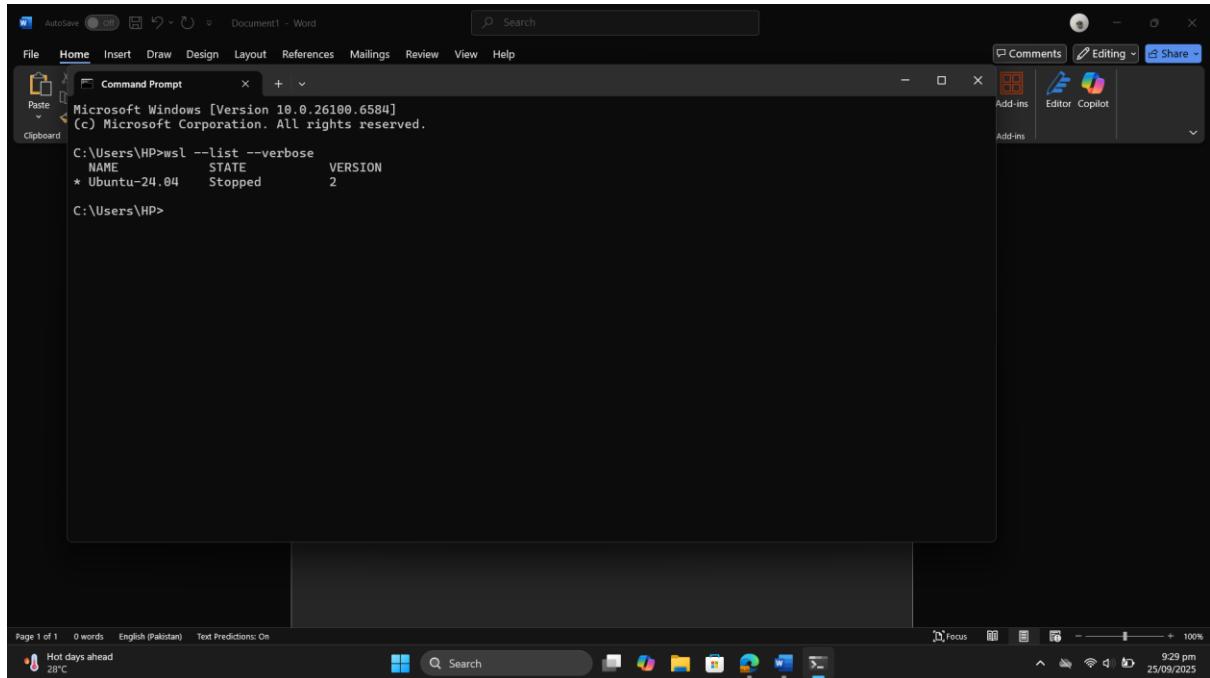
Lab no. :

01

Semester: 5Th

PART A:

1.Verify WSL2 & Ubuntu Setup:

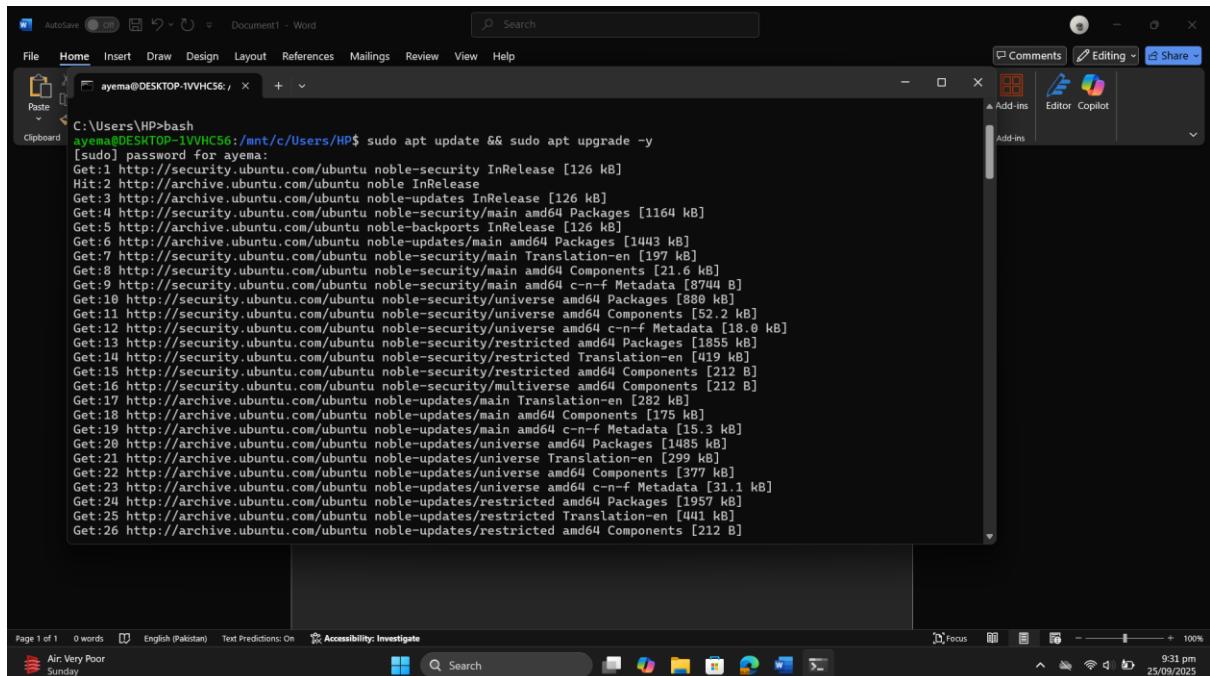


A screenshot of a Microsoft Word document titled "Document1 - Word". Inside the document, there is a "Command Prompt" window. The command entered is "wsl --list --verbose". The output shows one entry: "* Ubuntu-24.04 Stopped 2". The Microsoft Word ribbon is visible at the top, and the status bar at the bottom shows "Hot days ahead 28°C" and the date "25/09/2025".

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

C:\Users\HP>
```

2.Update Ubuntu environment:



A screenshot of a Microsoft Word document titled "Document1 - Word". Inside the document, there is a terminal window. The command entered is "sudo apt update && sudo apt upgrade -y". The terminal output shows a series of "Get:" and "Hit:" commands for various Ubuntu repositories, indicating the download of packages. The Microsoft Word ribbon is visible at the top, and the status bar at the bottom shows "Air: Very Poor Sunday" and the date "25/09/2025".

```
ayema@DESKTOP-1VVHCS6:/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 [126 kB]
Get:4 http://archive.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 [1443 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 [1085 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]
```

PART B:

1. Configure Git

2. Generate SSH keys

3. Test Connection

The screenshot shows a GitHub terminal window titled 'ayema20 / Operating-system'. The user is generating an SSH key named 'ed25519' and attempting to clone a repository. The terminal output includes a warning about the key already existing, a fingerprint check, and a successful cloning of the repository.

```
This message is shown once a day. To disable it please create the
/home/ayema/.hushlogin file
ayena@DESKTOP-1VHHC56:/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)?
ayena@DESKTOP-1VHHC56:/mnt/c/Users/HP$ cd ~/.ssh/
ayena@DESKTOP-1VHHC56:~/.ssh$ ls
id_ed25519 id_ed25519.pub
ayena@DESKTOP-1VHHC56:~/.ssh$ cat id_ed25519.pub
ssh-ed25519 AAAAC3NzaC1ZDINTE5AAAIAIwUEaIkqQftS0OROIFAb3+Lyzml62N0aCoqZ7gJYY ayena@DESKTOP-1VHHC56
ayena@DESKTOP-1VHHC56:~/.ssh$ ssh -T git@github.com
The authenticity of host 'github.com (20.207.73.82)' can't be established.
ED25519 key fingerprint is SHA256:+DiY3wwvV6TuJhbpZisF/zLD0azPMSvhdkr4UvC0qU.
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 ayena20! You've successfully authenticated, but GitHub does not provide shell access.
ayena@DESKTOP-1VHHC56:~/.ssh$ ayena@DESKTOP-1VHHC56:~/.ssh$ ayena@DESKTOP-1VHHC56:~/.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.
ayena@DESKTOP-1VHHC56:~/.ssh$
```

PART C:

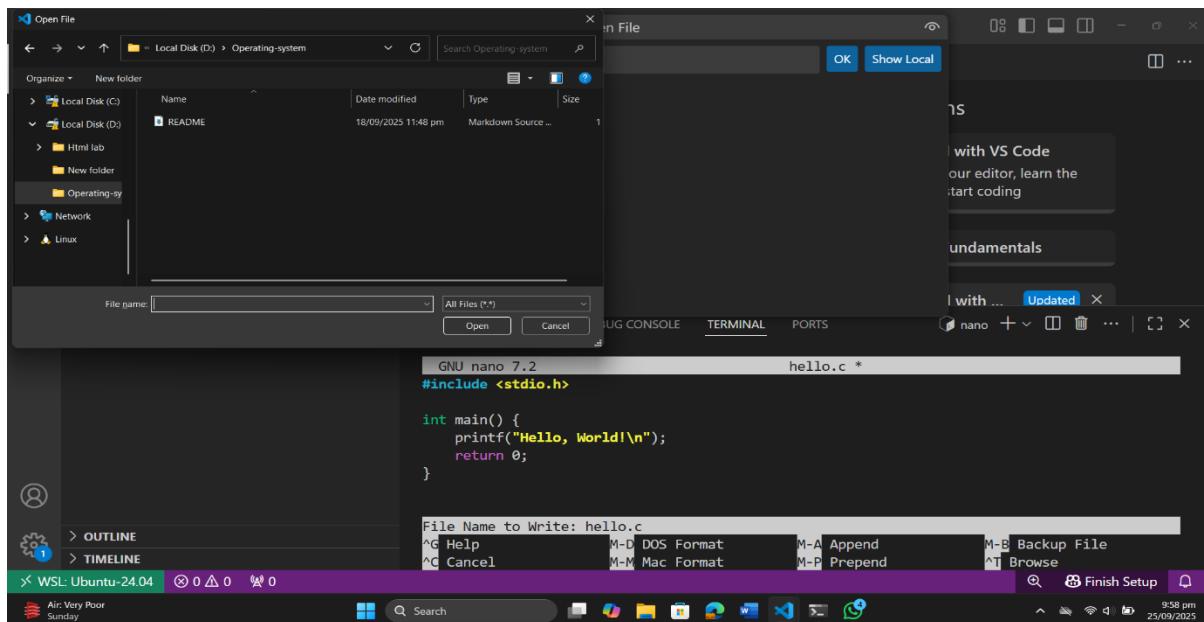
1. Install build tools and check version of gcc

The screenshot shows a Microsoft Word document containing a terminal session. The user installs build tools using 'sudo apt install build-essential' and checks the version of gcc using 'gcc --version'. The terminal output shows the package is already the newest version and provides the gcc version information.

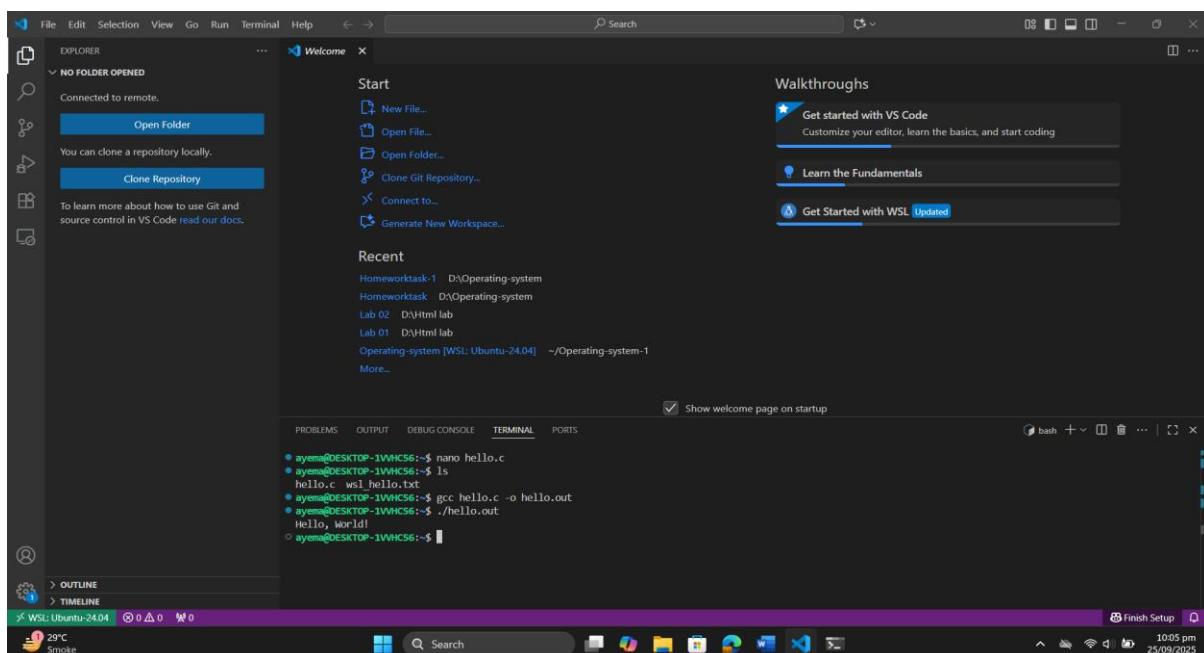
```
ayena@DESKTOP-1VHHC56:/mnt/c/Users/HP$ bash
ayena@DESKTOP-1VHHC56:/mnt/c/Users/HP$ sudo apt install build-essential
[sudo] password for ayena:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
build-essential is already the newest version (12.1.0ubuntu1).
The following package was automatically installed and is no longer required:
    libl1m19
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ayena@DESKTOP-1VHHC56:/mnt/c/Users/HP$ gcc --version
gcc (Ubuntu 13.3.0-1ubuntu2.24.0.1) 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.
```

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 hometask, I learnt about how to use ubuntu and create c file by using WSL and connect to github.