



# National Textile University

*Department of Computer Science*

Subject:

**Operating System**

Submitted To:

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Submitted By:

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Registration No:

**23-NTU-CS-1163**

Lab No:

**1 - Home Task**

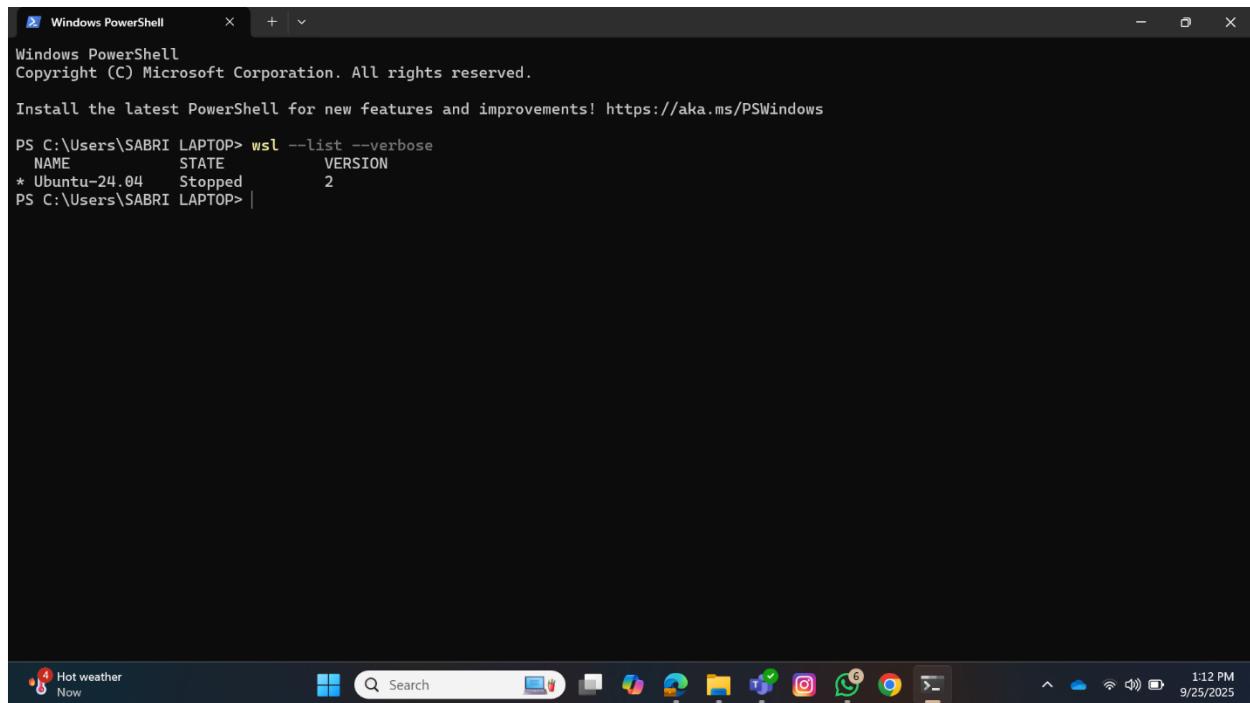
Semester:

**5<sup>th</sup>**

# Lab 1 - Home task

## Part A: WSL2 & Ubuntu Setup

### 1. Verify WSL2 and Ubuntu installation



```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\SABRI LAPTOP> wsl --list --verbose
  NAME      STATE      VERSION
* Ubuntu-24.04  Stopped        2
PS C:\Users\SABRI LAPTOP> |
```

### 2. Update Ubuntu environment

```
hafsatayyab@DESKTOP-L0JV4JP:~$ sudo apt update && sudo apt upgrade -y
[sudo] password for hafsatayyab:
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 [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://archive.ubuntu.com/ubuntu noble-updates/main Translation-en [282 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [419 kB]
Get:16 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:17 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:18 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
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]
Get:27 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:28 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7072 B]
Get:29 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [19.2 kB]
Get:30 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:31 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]

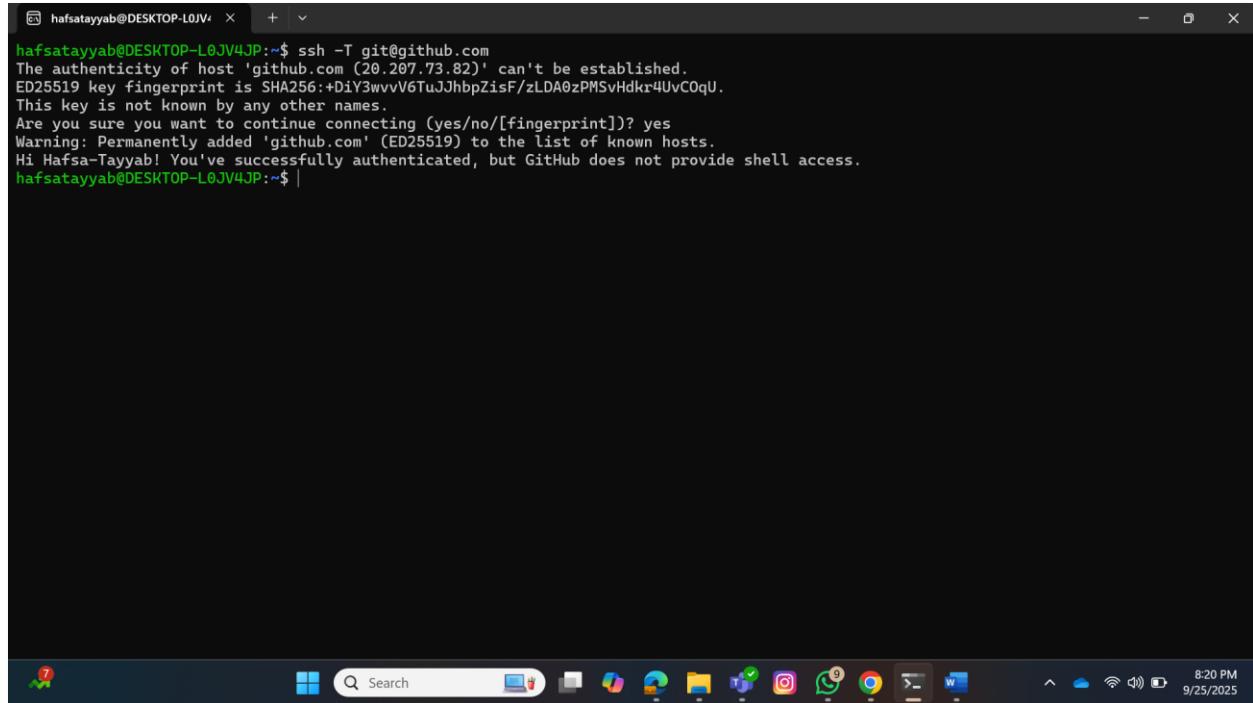
92°F Haze 7:01 PM 9/25/2025
```

## Part B: Git & GitHub SSH Setup

### 1. Configure Git

```
hafsatayyab@DESKTOP-L0JV4JP:~$ git config --list
user.name=Hafsa Tayyab
user.email=hafsatayyab681@gmail.com
hafsatayyab@DESKTOP-L0JV4JP:~$ |
```

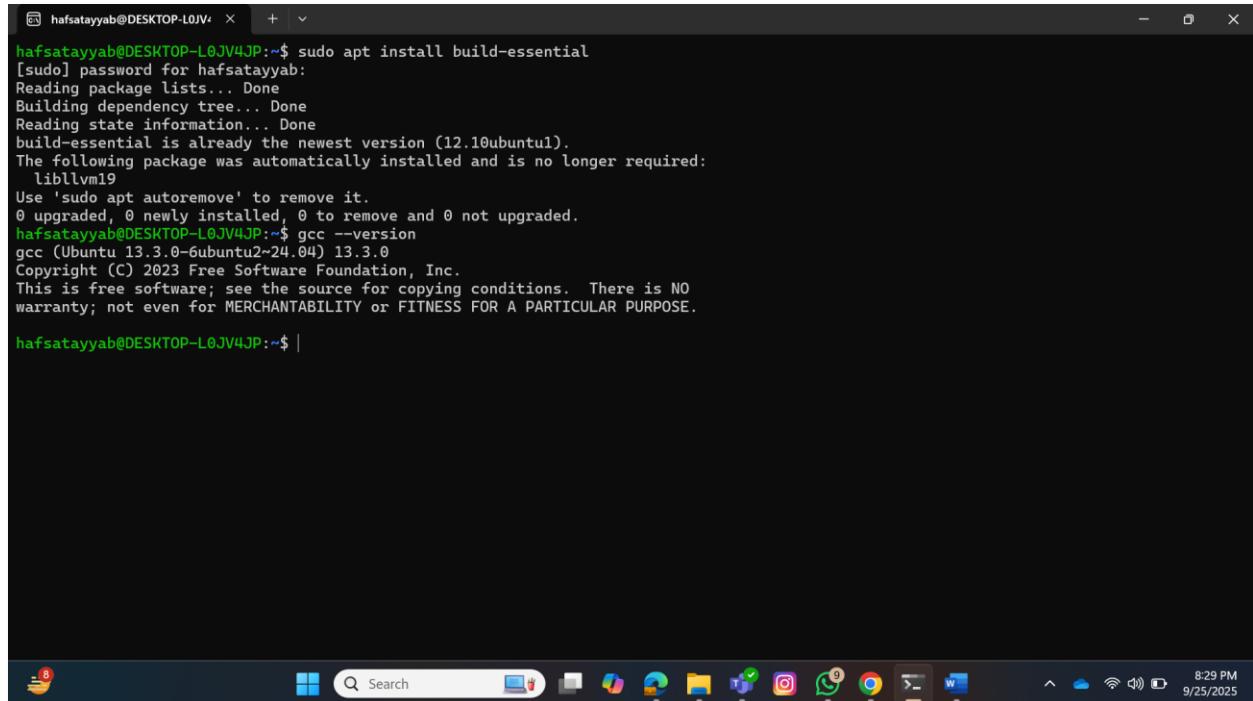
## 2. Generate SSH Keys



```
hafsatayyab@DESKTOP-L0JV4JP:~$ ssh -T git@github.com
The authenticity of host 'github.com (20.207.73.82)' can't be established.
ED25519 key fingerprint is SHA256:+DiY3wvvV6TuJhbzisF/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 Hafsa-Tayyab! You've successfully authenticated, but GitHub does not provide shell access.
hafsatayyab@DESKTOP-L0JV4JP:~$ |
```

## Part C: C Programming Environment & Practice

### Step 1: Install Build Tools



```
hafsatayyab@DESKTOP-L0JV4JP:~$ sudo apt install build-essential
[sudo] password for hafsatayyab:
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.
hafsatayyab@DESKTOP-L0JV4JP:~$ 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.
hafsatayyab@DESKTOP-L0JV4JP:~$ |
```

## Step 2: Write a C Program

The screenshot shows the Visual Studio Code interface running within a Windows Subsystem for Linux (WSL) environment. The title bar indicates the window is titled "OS-Labs [WSL: Ubuntu-24.04]". The Explorer sidebar on the left shows files in the directory "OS-LABS [WSL: UBUNTU-24.04]" including "hello.c", "hello.out", "hello.pdf", and "README.md". The main editor area displays the following C code:

```
#include <stdio.h>
int main() {
    char name[50];
    printf("Enter your name: ");
    scanf("%s", name);
    printf("Hello, %s! Welcome to C programming.\n", name);
    return 0;
}
```

The terminal tab at the bottom shows the output of running the program:

```
hafsatayyab@DESKTOP-L0JV4JP:~/OS-Labs$ ./hello.out
Enter your name: Hafsa Tayyab
Hello, Hafsa! Welcome to C programming.
```

The status bar at the bottom shows the current user is "Hafsa Tayyab" (13 minutes ago), the file is "main.c", and the terminal mode is "Ln 11, Col 2".

The screenshot shows a GitHub repository page for "OS-Labs" owned by "Hafsa-Tayyab". The repository is public and contains the following files:

- README.md (Initial commit, 35 minutes ago)
- hello.c (Add simple C program, 15 minutes ago)
- hello.pdf (Add pdf version of code, 5 minutes ago)

The repository has 3 commits and 0 stars. The "About" section notes "No description, website, or topics provided." The "Releases" section indicates "No releases published" and "Create a new release". The "Packages" section is empty.