National Textile University

Department of Computer Science

Subject:

Operating System

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Submitted to:

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Reg number:

23-NTU-CS-1157

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Lab no. :
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Semester:
5th

Lab 1 Plan: WSL2 Setup and Ubuntu Configuration

Objective

The purpose of this lab is to introduce students to Windows Subsystem for Linux (WSL2) and guide them through the installation, setup, and configuration of Ubuntu. By the end of this lab, students should be able to run and use a Linux environment on Windows for development and operating system–related tasks.

Learning Outcomes

After completing this lab, students will be able to:

1. Understand the concept and advantages of WSL2.

2. Install and enable WSL2 on Windows.

3. Install Ubuntu from Microsoft Store.

4. Configure Ubuntu environment (update, upgrade, user setup).
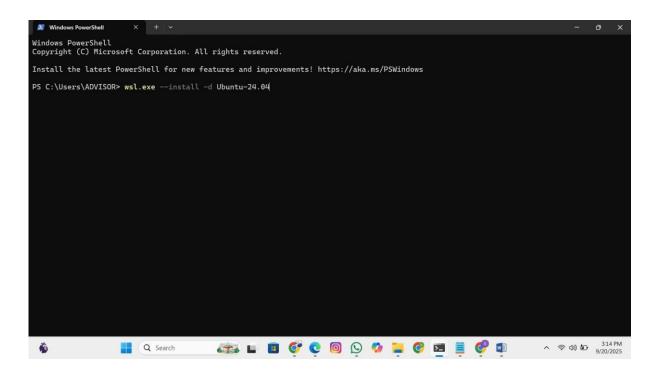
5. Run basic Linux commands in Ubuntu under WSL2.

Lab Activities

Task 01: Installing WSL2 on Windows

Step 1: Open PowerShell as Administrator.

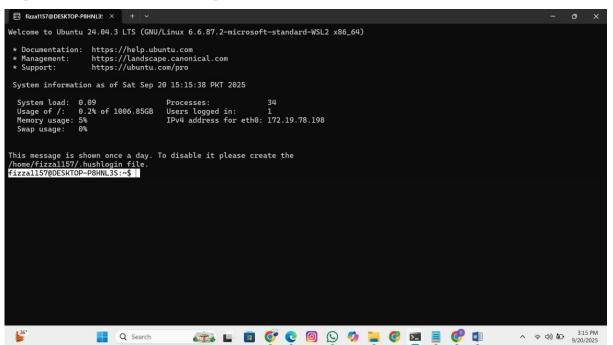Step 2: Run command to enable WSL and Virtual Machine Platform:
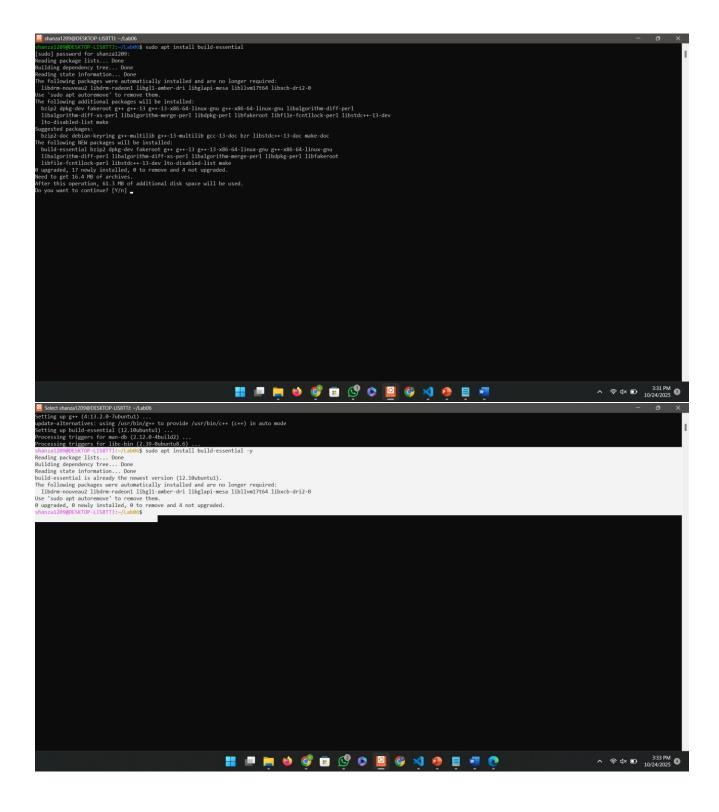
```
wsl.exe -–install -d Ubuntu-24.04
```

Task 02: Verifying setup on Windows

Step 1: Open Ubuntu 24.04 in Windows terminal or Ubuntu shell directly

Step 2: Create new user and password

Step 3:   Run   the   following
        commands sudo apt update sudoapt
        upgrade

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shanza1209@DESKTOP-LIS8TTJ:~/Lab06$ sudo apt install build-essential
[sudo] password for shanza1209:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libdrm-nouveau2 libdrm-radeon1 libgl1-amber-dri libglapi-mesa libllvm17t64 libxcb-dri2-0
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  bzip2 dpkg-dev fakeroot g++ g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu libalgorithm-diff-perl
  libalgorithm-diff-xs-perl libalgorithm-merge-perl libdpkg-perl libfakeroot libfile-fcntllock-perl libstdc++-13-dev
  lto-disabled-list make
Suggested packages:
  bzip2-doc debian-keyring g++-multilib g++-13-multilib gcc-13-doc bzr libstdc++-13-doc make-doc
The following NEW packages will be installed:
  build-essential bzip2 dpkg-dev fakeroot g++ g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libdpkg-perl libfakeroot
  libfile-fcntllock-perl libstdc++-13-dev lto-disabled-list make
0 upgraded, 17 newly installed, 0 to remove and 4 not upgraded.
Need to get 16.4 MB of archives.
After this operation, 61.3 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

```
Setting up g++ (4:13.2.0-7ubuntu1) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.10ubuntu1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
shanza1209@DESKTOP-LIS8TTJ:~/Lab06$ sudo apt install build-essential -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
build-essential is already the newest version (12.10ubuntu1).
The following packages were automatically installed and are no longer required:
  libdrm-nouveau2 libdrm-radeon1 libgl1-amber-dri libglapi-mesa libllvm17t64 libxcb-dri2-0
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
shanza1209@DESKTOP-LIS8TTJ:~/Lab06$
```

Generate SSH Key:

Navigate to SSH Folder:

Copy Public Key and add to Github and then test connection:

Clone Repo via SSH

```
shanza1209@DESKTOP-LIS8TTJ: ~
Please make sure you have the correct access rights
and the repository exists.
shanza1209@DESKTOP-LIS8TTJ:~/.ssh$ cd wsl_lab1
-bash: cd: wsl_lab1: No such file or directory
shanza1209@DESKTOP-LIS8TTJ:~/.ssh$ pwd
/home/shanza1209/.ssh
shanza1209@DESKTOP-LIS8TTJ:~/.ssh$ cd ~
shanza1209@DESKTOP-LIS8TTJ:~$ ls
Lab06  Lab4_OS  Lab_07  Labs_OS
shanza1209@DESKTOP-LIS8TTJ:~$ cd ~
shanza1209@DESKTOP-LIS8TTJ:~$ ls
Lab06  Lab4_OS  Lab_07  Labs_OS  WSL_Lab1
shanza1209@DESKTOP-LIS8TTJ:~$ cd WSL_Lab1
shanza1209@DESKTOP-LIS8TTJ:~/WSL_Lab1$ echo " # My first WSL lab project"> README.md
shanza1209@DESKTOP-LIS8TTJ:~/WSL_Lab1$ git add .
fatal: not a git repository (or any of the parent directories): .git
shanza1209@DESKTOP-LIS8TTJ:~/WSL_Lab1$ cd lab1_wsl
-bash: cd: lab1_wsl: No such file or directory
shanza1209@DESKTOP-LIS8TTJ:~/WSL_Lab1$ cd lab1_wsl
-bash: cd: lab1_wsl: No such file or directory
shanza1209@DESKTOP-LIS8TTJ:~/WSL_Lab1$ cd ~
shanza1209@DESKTOP-LIS8TTJ:~$ cd lab1_wsl
-bash: cd: lab1_wsl: No such file or directory
shanza1209@DESKTOP-LIS8TTJ:~$ cd ~/.ssh/lab1_wsl
-bash: cd: /home/shanza1209/.ssh/lab1_wsl: No such file or directory
shanza1209@DESKTOP-LIS8TTJ:~$
```

Task 03: Linux filesystem and directory structure

Step 1: Explore Linux filesystem and basic linux files.

Step 2: Explore how Ubuntu (Linux) can access Windows file system under /mnt/c/.

Step 3: Practice creating files in Windows and accessing them in Ubuntu.

File   Edit   View

Hello GitHub from WSL + Windows!

Ln 1, Col 33   33 characters   Plain text   100%   Unix (LF)   UTF-8