Practical – 01

Installation of Java on Unix/Linux Machine (Without VirtualBox)

This guide uses WSL (Windows Subsystem for Linux) to simulate a Linux environment directly on Windows.

Step 1: Enable WSL

1. Open PowerShell as Administrator.

2. Run the following command:

    wsl --install

3. Restart your computer when prompted.

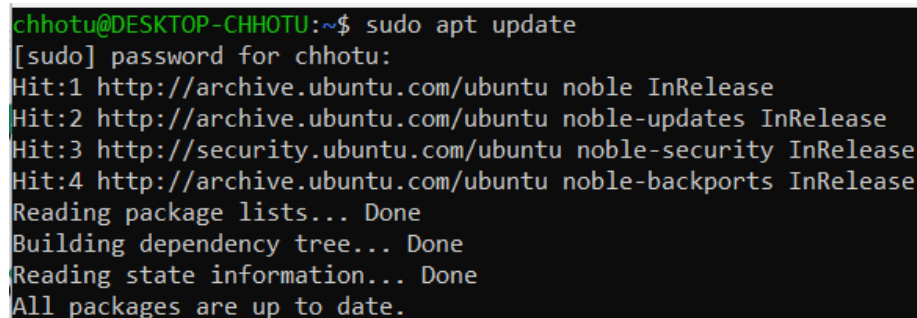4. After restart, choose Ubuntu or install it from the Microsoft Store.

Step 2: Open Ubuntu (WSL)

-   Search for "Ubuntu" in the Start Menu and open it.

-   It will initialize and ask for a username and password.

Step 3: Update the Package List

Run the following command:

    sudo apt update

```
chhotu@DESKTOP-CHHOTU:~$ sudo apt update
[sudo] password for chhotu:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

Step 4: Install Java (OpenJDK 21)

Run:

    sudo apt install openjdk-21-jdk -y

    or, sudo apt install default-jdk

Step 5: Verify Java Installation

Run:

    java -version

output:

```
chhotu@DESKTOP-CHHOTU:~$ java --version
openjdk 21.0.8 2025-07-15
OpenJDK Runtime Environment (build 21.0.8+9-Ubuntu-0ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.8+9-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
chhotu@DESKTOP-CHHOTU:~$
```
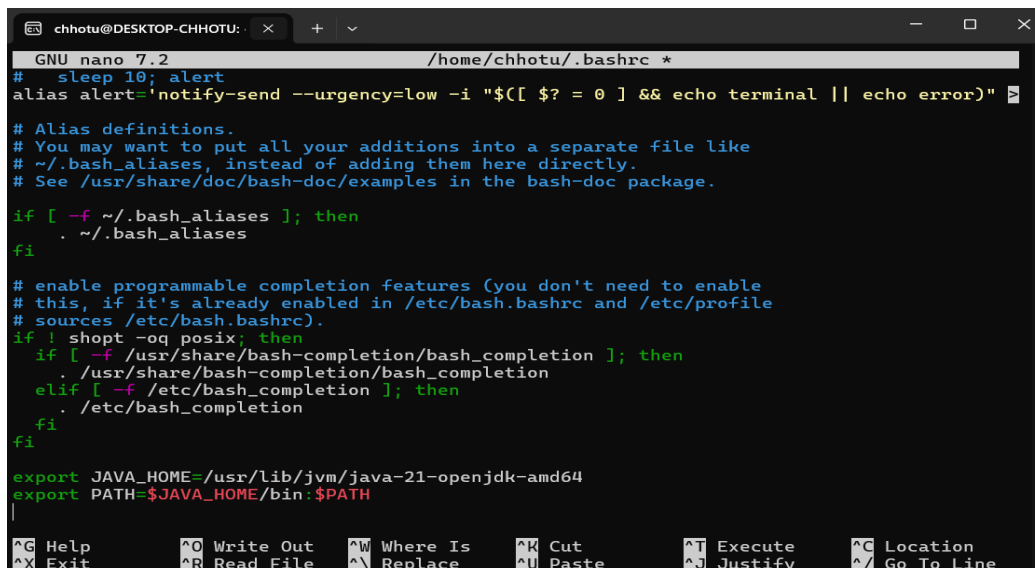
Step 6: Set JAVA_HOME Environment Variable (Optional)

1. Open .bashrc file:

    nano ~/.bashrc

2. Add the following lines at the end:

    export JAVA_HOME=/usr/lib/jvm/java-21-openjdk-amd64

    export PATH=$JAVA_HOME/bin:$PATH

```
chhotu@DESKTOP-CHHOTU: ·   ×    +   ∨                                          —    □    ×

  GNU nano 7.2                        /home/chhotu/.bashrc *
#   sleep 10; alert
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo error)"

# Alias definitions.
# You may want to put all your additions into a separate file like
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi

export JAVA_HOME=/usr/lib/jvm/java-21-openjdk-amd64
export PATH=$JAVA_HOME/bin:$PATH


^G Help        ^O Write Out   ^W Where Is    ^K Cut       ^T Execute    ^C Location
^X Exit        ^R Read File   ^\ Replace     ^U Paste     ^J Justify    ^/ Go To Line
```

3. Save and exit (Ctrl + X, then Y, then Enter).

4. Reload bashrc:

    source ~/.bashrc

5. Verify JAVA_HOME is set:

    echo $JAVA_HOME

```
chhotu@DESKTOP-CHHOTU:~$ echo $JAVA_HOME
/usr/lib/jvm/java-21-openjdk-amd64
```

Result:

Now Java 21 installed on a Linux system simulated within Windows using WSL — no VirtualBox needed.