



National Textile University
Department of Computer Science
Subject:

Operating System

Submitted to:

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Submitted by:

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Reg number:

1160

Lab no. :
01

Semester:

5th

Part A: WSL2 & Ubuntu Setup

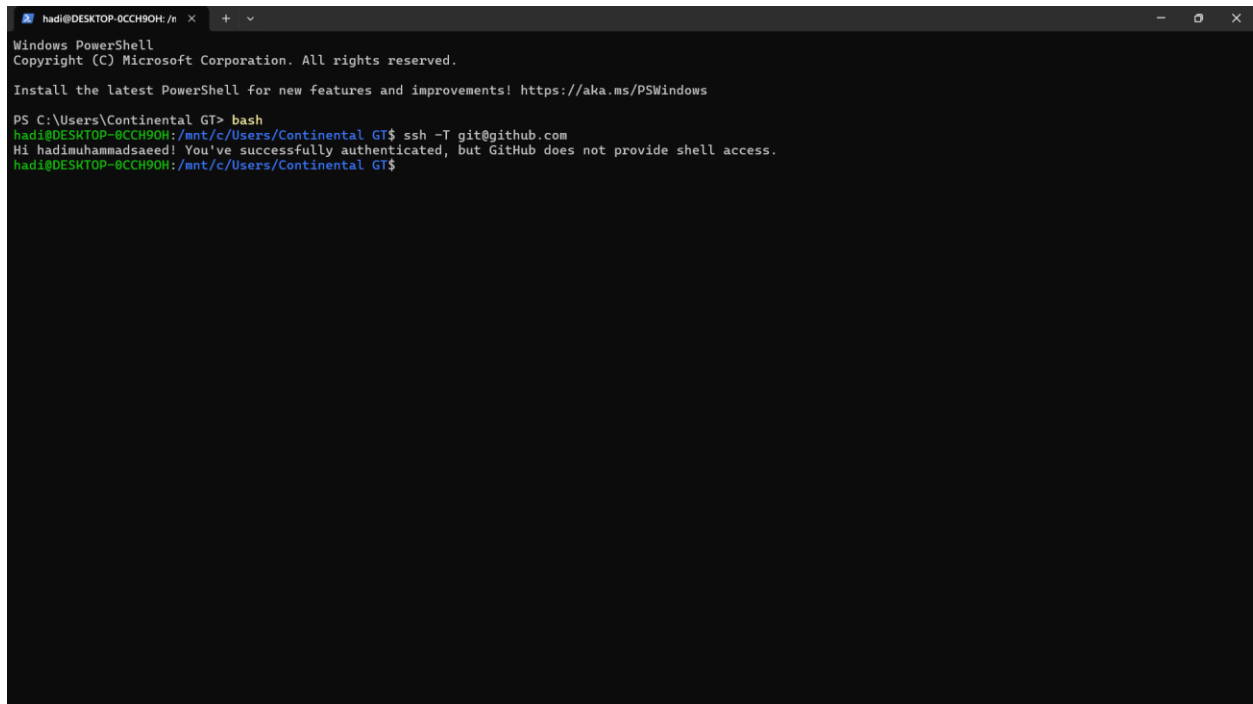
1. Verify WSL2 and Ubuntu installation

```
Command Prompt
had1@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$ exit
logout
C:\Users\Continental GT>wsl --list --verbose
NAME      STATE      VERSION
* Ubuntu   Running    2
C:\Users\Continental GT>
```

Part B: Git & GitHub SSH Setup

```
had1@DESKTOP-0CCH90H: /mnt/c/Users/Continental GT$ exit
logout
C:\Users\Continental GT>wsl --list --verbose
  NAME      STATE      VERSION
* Ubuntu    Running     2
C:\Users\Continental GT>1. Verify WSL2 and Ubuntu installation
C:\Users\Continental GT>
C:\Users\Continental GT>
C:\Users\Continental GT>
C:\Users\Continental GT>
C:\Users\Continental GT>sudo apt update && sudo apt upgrade -y
Sudo is disabled on this machine. To enable it, go to the Developer Settings page in the Settings app
C:\Users\Continental GT>clear
'clear' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\Continental GT>git config --list
'git' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\Continental GT>bash
had1@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$ git config --list
user.name=Hadi
user.email=hms71431@gmail.com
had1@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$
```

Test Connection



```
hadi@DESKTOP-0CCH90H: /n x + v
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\Continental GT> bash
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$ ssh -T git@github.com
Hi hadimuhammadsaeed! You've successfully authenticated, but GitHub does not provide shell access.
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$
```

Part C: C Programming Environment & Practice Step 1: Install Build Tools

```
hadi@DESKTOP-0CCH90H: /n x + v
Preparing to unpack .../16-libfile-fcntllock-perl_0.22-4ubuntu5_amd64.deb ...
Unpacking libfile-fcntllock-perl (0.22-4ubuntu5) ...
Setting up lto-disabled-list (47) ...
Setting up libfile-fcntllock-perl (0.22-4ubuntu5) ...
Setting up libalgorithm-diff-perl (1.201-1) ...
Setting up bzip2 (1.0.8-5.1build0.1) ...
Setting up libfakeroot:amd64 (1.33-1) ...
Setting up fakeroot (1.33-1) ...
update-alternatives: using /usr/bin/fakeroot-sysv to provide /usr/bin/fakeroot (fakeroot) in auto mode
Setting up make (4.3-4.1build2) ...
Setting up libdpkg-perl (1.22.6ubuntu6.5) ...
Setting up libalgorithm-diff-xs-perl:amd64 (0.04-8build3) ...
Setting up libstdc++-13-dev:amd64 (13.3.0-6ubuntu2~24.04) ...
Setting up libalgorithm-merge-perl (0.08-5) ...
Setting up g++-13-x86-64-linux-gnu (13.3.0-6ubuntu2~24.04) ...
Setting up dpkg-dev (1.22.6ubuntu6.5) ...
Setting up g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up g++-13 (13.3.0-6ubuntu2~24.04) ...
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) ...
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$ 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.

hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$
```

Step 2: How to run a C Program

```
Operating-system-repo [WSL: Ubuntu]
C task1.c U x
hadi@DESKTOP-0CCH90H: /n x + v
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.

hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT$ cd Desktop
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop$ ls
'1129 (1st lab).pdf' 'Operating-system-repo' desktop.ini
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop$ cd Operating-system-repo
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$ touch task1.c
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$ code .
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$ cat task1.c
#include <stdio.h>

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

hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$ gcc task1.c -o task1.out
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$ ./task1.out
Hello, World!
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$
```

contains your C program.

→ -o filename.out

- The option -o means "output."
- By default, gcc creates an executable file named a.out if you don't specify anything.
- With -o, you can choose the name of the output executable.
- In this case, the compiled file will be named filename.out.

Step 3: Write a C Program

```
hadi@DESKTOP-0CCH90H: /n × + -  
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$ ./task1.out  
Hello, World!  
hadi@DESKTOP-0CCH90H:/mnt/c/Users/Continental GT/Desktop/Operating-system-repo$
```