

# CS236-Lab 2024-2

## Lab 1

### Instructions

- **Instructions to open Terminal:**

#### **Method 1: Using a Keyboard Shortcut**

1. Press **Ctrl + Alt + T** on your keyboard to open a terminal window.

#### **Method 2: Using the Application Menu**

1. Click the **"Activities"** button or press the Windows key to open the search bar.
2. Type **"Terminal"** in the search bar.
3. Click on the **"Terminal"** icon from the search results to open it.

#### **Method 3: Using the Right-Click Menu**

1. **Right-click** on the desktop or inside any folder.
2. Select **"Open Terminal"** or **"Open in Terminal"** from the menu.

- **Instructions to write, compile, and run a C program:**

#### **Step 1: Write Your C Program**

1. Open your terminal.
2. Use a text editor like **nano**, **vim**, or **gedit** to create a new C file using the command:  
**"nano helloworld.c"** or **"vim helloworld.c"** or **"gedit helloworld.c"**
3. Write your C code in the file and save it. For example:



```
preeti@preeti-Inspiron-14-5420: ~  
GNU nano 4.8 helloworld.c Modified  
#include <stdio.h>  
  
int main() {  
    printf("Hello, World!\n");  
    return 0;  
}
```

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^\_ Go To Line

4. Save and exit the editor (**Ctrl + X** in **nano** or **:wq** in **vim**).

## Step 2: Compile the C Program

1. In the terminal, use the **gcc** compiler to compile the C program using the command: **"gcc helloworld.c -o helloworld"** where, **gcc** is the GNU C Compiler, **-o** **helloworld** specifies the output file name (you can change it) and **helloworld.c** is the name of your source file.
2. You can also save the compiled executable using its default name **a.out** by just compiling without the **"-o"** option: **"gcc helloworld.c"**

## Step 3: Run the Compiled Program

1. To run the compiled program, type the command: **"./helloworld"**
2. If you use the default **a.out** as the executable name, type: **"./a.out"**

- **Instructions to untar the compressed file:**

1. Open your terminal.
2. Navigate to the directory where your **.tar** or **.tar.gz** file is located:
3. Use the following command to extract a **.tar** file: **"tar -xzf filename.tar.gz"**

- **Instructions to use man pages:**

[**man** (short for manual) pages provide detailed documentation for commands, functions, system calls, and other aspects of the Linux operating system.]

1. Open your terminal.
2. To view the man page for a specific command, type: **"man command"**. Ex: **man ls**
3. **Scroll Down:** Press the **Spacebar** or **Down Arrow** key to scroll down one screen at a time.
4. **Scroll Up:** Press the **Up Arrow** key to scroll up one line at a time, or press **"b"** to scroll up one screen.
5. **Search Within the Page:** Press **"/"** followed by the search term to find specific text within the **man** page. Press **"n"** to go to the next occurrence or **"N"** to go to the previous one.
6. Press **"g"** to go to the beginning of the page. Press **"G"** to go to the end of the page.
7. To exit the **"man"** page and return to the terminal, press **"q"**.

- **Practice to use man pages to search the description (usage and different options available) of the following:**

1. **ps**
2. **top**
3. **cd**
4. **htop**
5. **pmap**
6. **pstree**
7. **proc**
8. **ls**
9. **strace**
10. **fork**
11. **wait**
12. **exec**