

UE22CS242B – Operating Systems – Mini Project

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To compile and run this program in your WSL Ubuntu environment:

1. Save the C code to a file named `process_tree.c`.
2. Save the Makefile content to a file named `Makefile` in the same directory.
3. Open a terminal in that directory.
4. Run **make** to compile the program. This uses the Makefile you saved.

The 'make' command automates the compilation and building process of projects by reading instructions from a Makefile. It determines which parts of a program need to be recompiled and executes the necessary commands to compile and link the components.

```
siri@DESKTOP-F9UMPJU:~$ cd MP
siri@DESKTOP-F9UMPJU:~/MP$ make
make: Nothing to be done for 'all'.
```

This message means that all targets specified (in this case, 'all') are already up to date, and there's no need to recompile or rebuild anything.

5. Execute the program by running the command **./process_tree**.

The command './process_tree' runs the executable named 'process_tree' located in the current directory.

```
siri@DESKTOP-F9UMPJU:~/MP$ ./process_tree
Main Process ID: 584
  Thread ID: 140599426410304
    Thread ID: 140599426405952
|-- Child PID: 586 from Parent PID: 584
    Thread ID: 140599426405952
  |-- Child PID: 588 from Parent PID: 586
    Thread ID: 140599426405952
    |-- Child PID: 590 from Parent PID: 588
      Thread ID: 140599426405952
      |-- Child PID: 592 from Parent PID: 590
        Thread ID: 140599426405952
        |-- Child PID: 594 from Parent PID: 592
          Thread ID: 140599426405952
          |-- Child PID: 596 from Parent PID: 594
```

6. After the 'process_tree' program has finished running, executing '**make clean**' will remove the 'process_tree' executable, ensuring the program is cleanly terminated and its binary is deleted. This uses the 'rm -f' command, where 'rm' removes files and '-f' ensures removal without asking for confirmation.

```
siri@DESKTOP-F9UMPJU:~/MP$ make clean
rm -f process_tree
```