

Lab 6

Data Structures
C++ for C Coders

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Makefile
quicksort.cpp
print_list.cpp

Lab06: The make utility

- You may need to install some packages.
(Install it as **admin privilege**. 관리자모드로 설치하십시오)
\$ pacman -S base-devel #install the build toolchain
\$ pacman -Syu #update msys2
- For macOS, use 'Homebrew' to install these kinds of packages in general.
 - <https://osxdaily.com/2018/03/07/how-install-homebrew-mac-os/>
 - <https://whitepaek.tistory.com/3>
- For Linux,
\$./configure
\$ make
\$ sudo make install

Lab06: The make utility

- If you still have a problem running make, check the following in PC Windows.
- Check where you install msys2 and mingw64. Check the "make" file exists in such as:

`C:\msys64\usr\bin\make`

- If it does not exist, install it as shown below:

```
pacman -S --needed base-devel mingw-w64-i686-toolchain mingw-w64-x86_64-toolchain
```

- If "make" does exist, then check whether or not you set PATH environment variable correctly.
 - Make sure that PATH environment variable includes the folder name where "make" exists.

The make utility – a simple example of Makefile

■ Basic syntax for Makefile:

```
target: dependencies
<tab>system command(s)
```

■ Example:

Source files: quicksort.cpp,
 print_list.cpp
Executable: qsort.exe

■ Makefile:

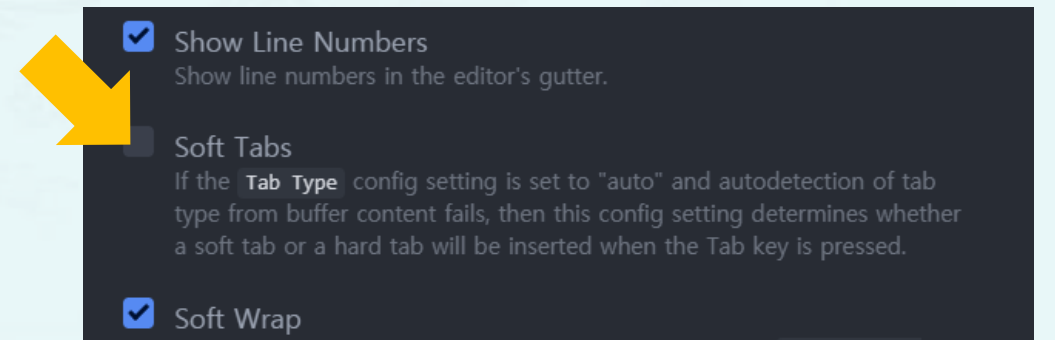
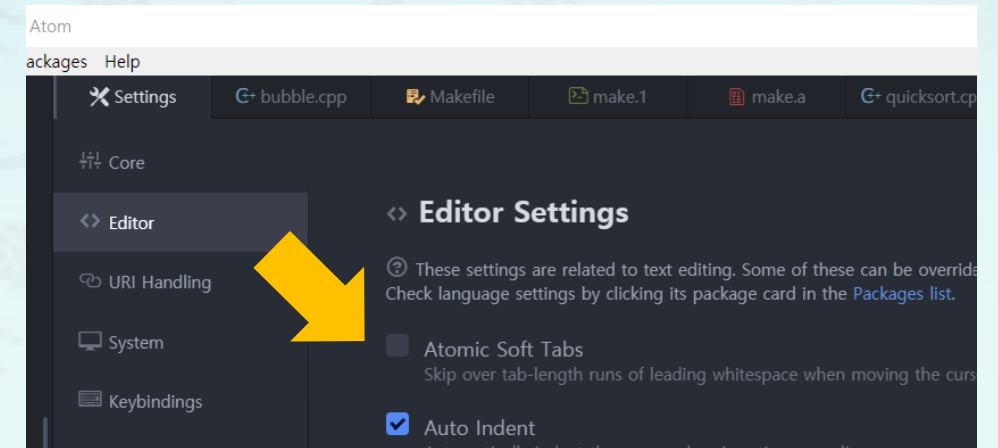
```
qsort: quicksort.o print_list.o
      g++ quicksort.o print_list.o -o qsort
```

```
quicksort.o: quicksort.cpp
      g++ -c quicksort.cpp
print_list.o: print_list.cpp
      g++ -c print_list.cpp
```

clean:

```
<tab>rm -f *.o qsort.exe qsort
```

- Use a hard <tab>
- Restart atom after turning on Hard Tabs



Lab 06:

- Use make and Makefile and build qsort.exe.
- Files to submit:
 - **Makefile, qsort.exe**
- Due:
 - 11:55 pm, 강의 당일 **11:55 PM**까지
- Grade: 출석체크
 - If not submitted, -1.0 point.

Lab 5

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insertion sort
selection sort
bubble sort
quick sort
#if