

Large Programs

Lecture 10

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Large Programs

*When programs are long

- Need to split the file into several files
- Need to compile them together
- Example
 - ❑ main.c, list.c, file.c
 - ❑ cc -o proj main.c list.c file.c

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Large Programs

*Sharing global variables

- Define types in a .h file
- Declare global variables
 - ❑ external in a .h file
- Declare and initialize global variables
 - ❑ in the main .c file
- Include the .h file in all the .c files which use any of the global variables
 - #include "proj.h"

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Large Programs

*Use makefile to automate the compilation process

*Create a "makefile" file with instructions

*Command make will parse the makefile file and execute the appropriate command

```
## make proj
```

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makefile

```
proj1: main1.c list1.c io1.c
gcc -o proj1 main1.c list1.c io1.c
./proj1 filename

proj2: main2.c list2.c thr2.c
gcc -o proj2 main2.c list2.c thr2.c -lpthread
./proj2 filename1 filename2
```

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Development Tools

*Unix/Linux

➤Environment and commands

➤Tools

- ❑vi
- ❑grep
- ❑gdb
- ❑makefile
- ❑shell script

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Development Tools

*Libraries

- Math
- String
- Memory
- Threads

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