

Math 157

.h, .cpp, and .lib files

Jan. 21, 2009

File structure : .h and .cpp files

What do we put in .h files?

- Class declarations
- Function declarations/prototypes

What do we put in .cpp files?

- main() program
- Class implementations
- Function implementations
- Static data member initializations

Why is there this convention?

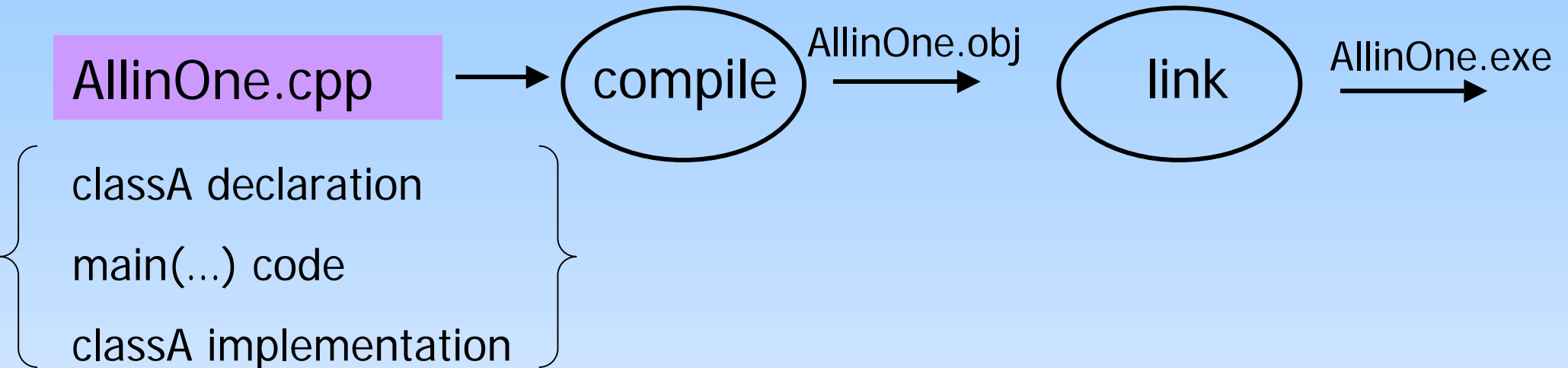
Why .h and .cpp file conventions?

- Enables modular code construction/management
- Enables the construction of collections of pre-compiled routines (libraries)

Example :

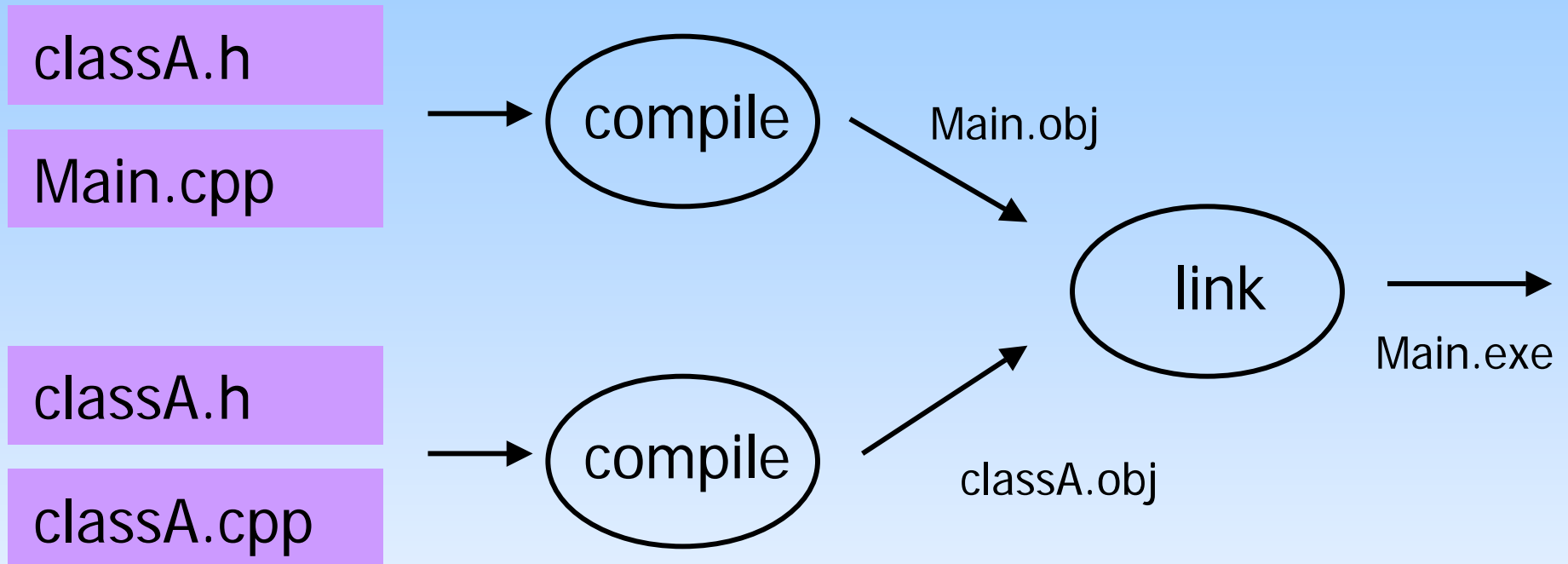
Suppose one has a main() program that uses a single class "classA"

"All in one" approach ...



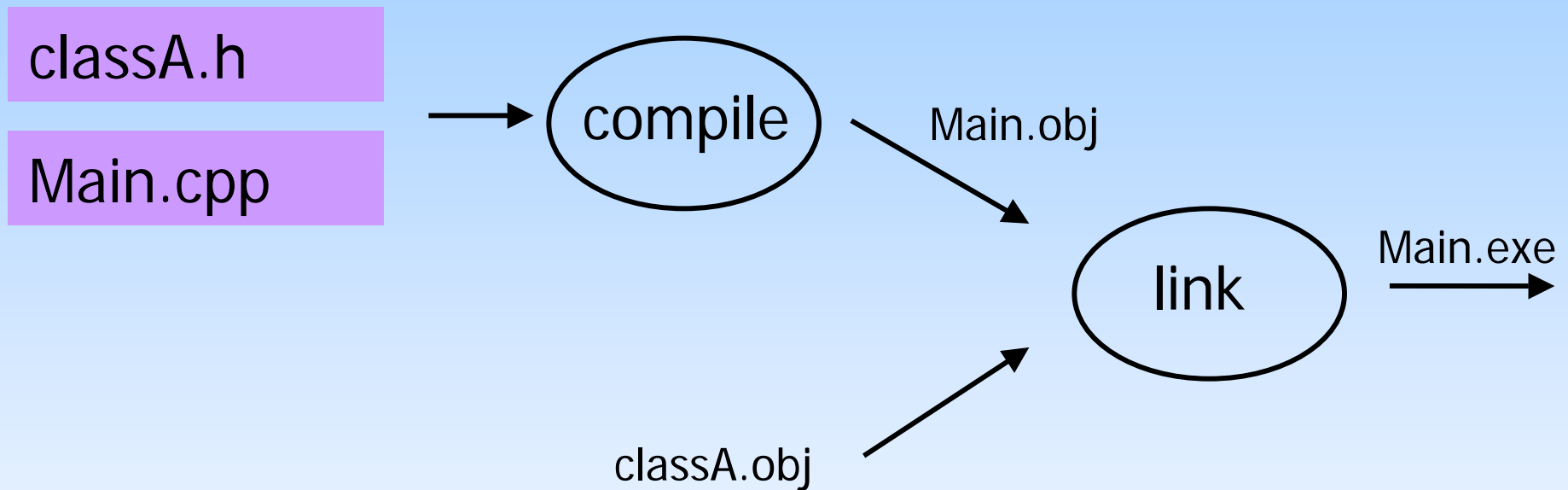
- Any change in `main(...)` induces a re-compile of `classA`.
- `classA` source (implementation) is required to use it.

Using .h/.cpp convention...



Why .h and .cpp file conventions?

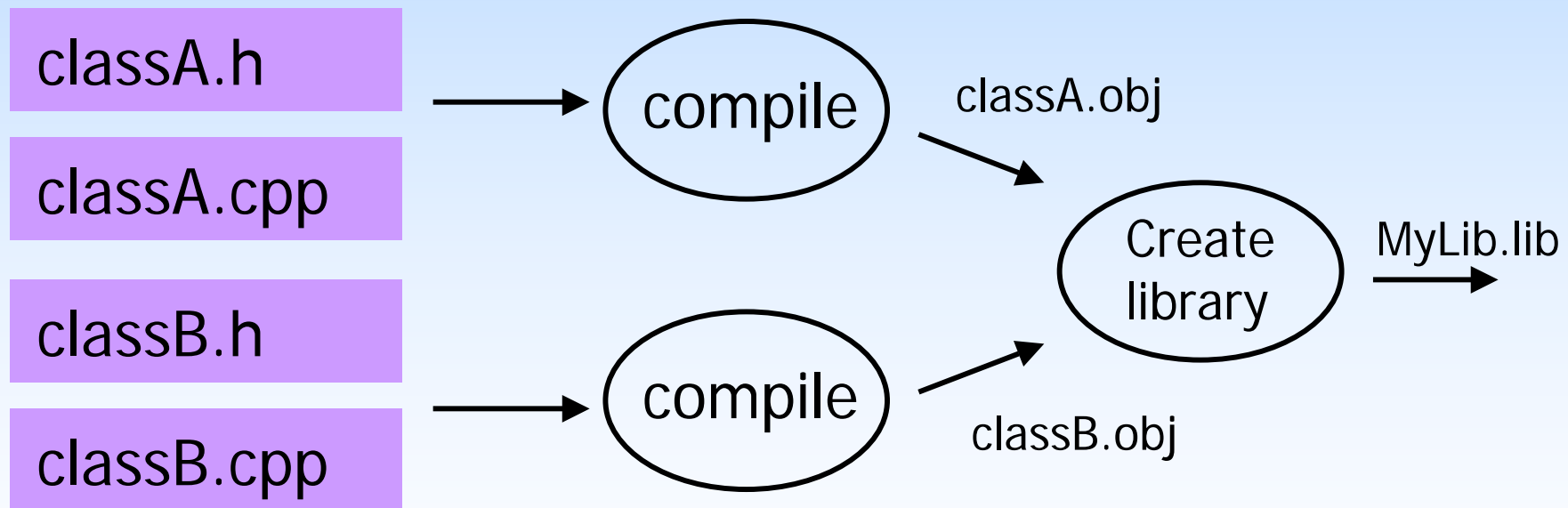
You only need classA.h and classA.obj to use classA ...



- `classA` is not re-compiled when `main(..)` changes
- `classA` source (implementation) is not required to use it.

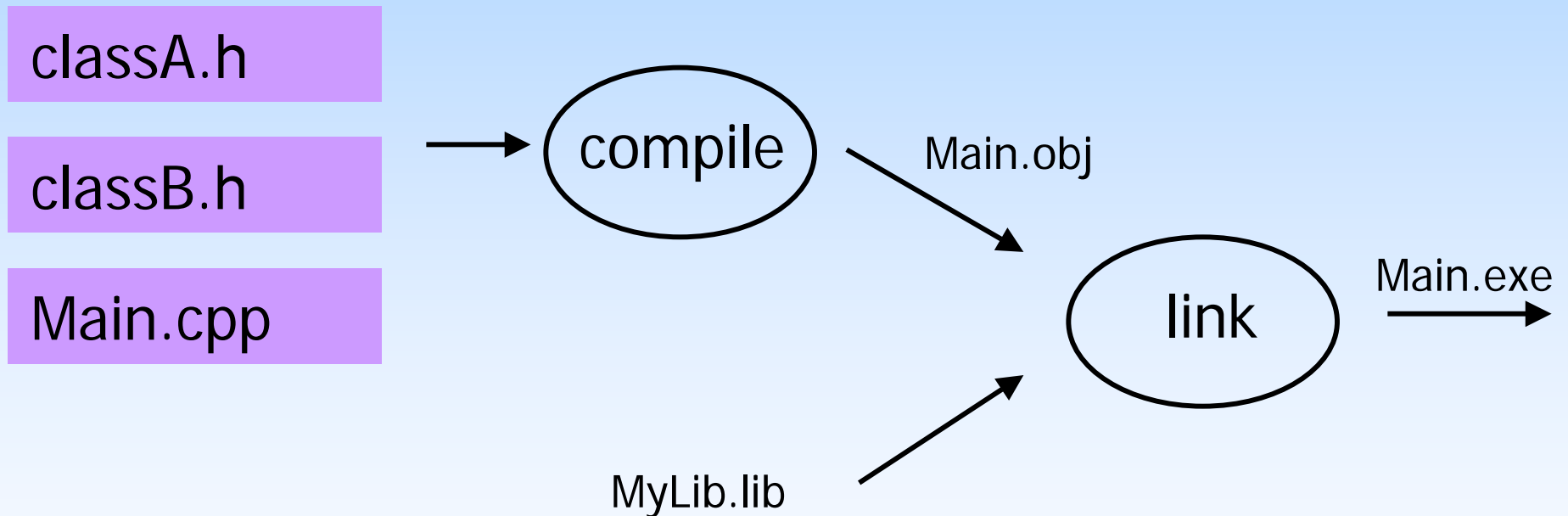
Why .h and .cpp file conventions?

- If one uses the .h/.cpp convention, then one need only distribute .h files and .obj files.
- Collections of .obj files can be constructed ... one creates libraries (.lib) files.



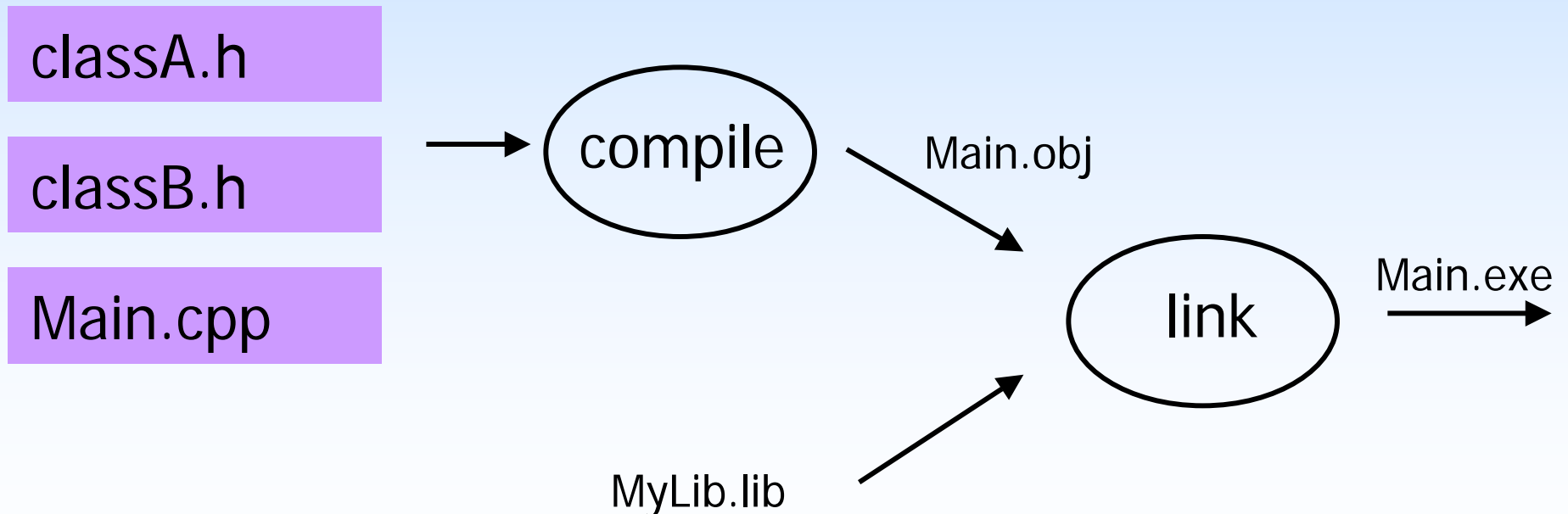
To use .lib files...

Include header (.h) files; link to .lib file.



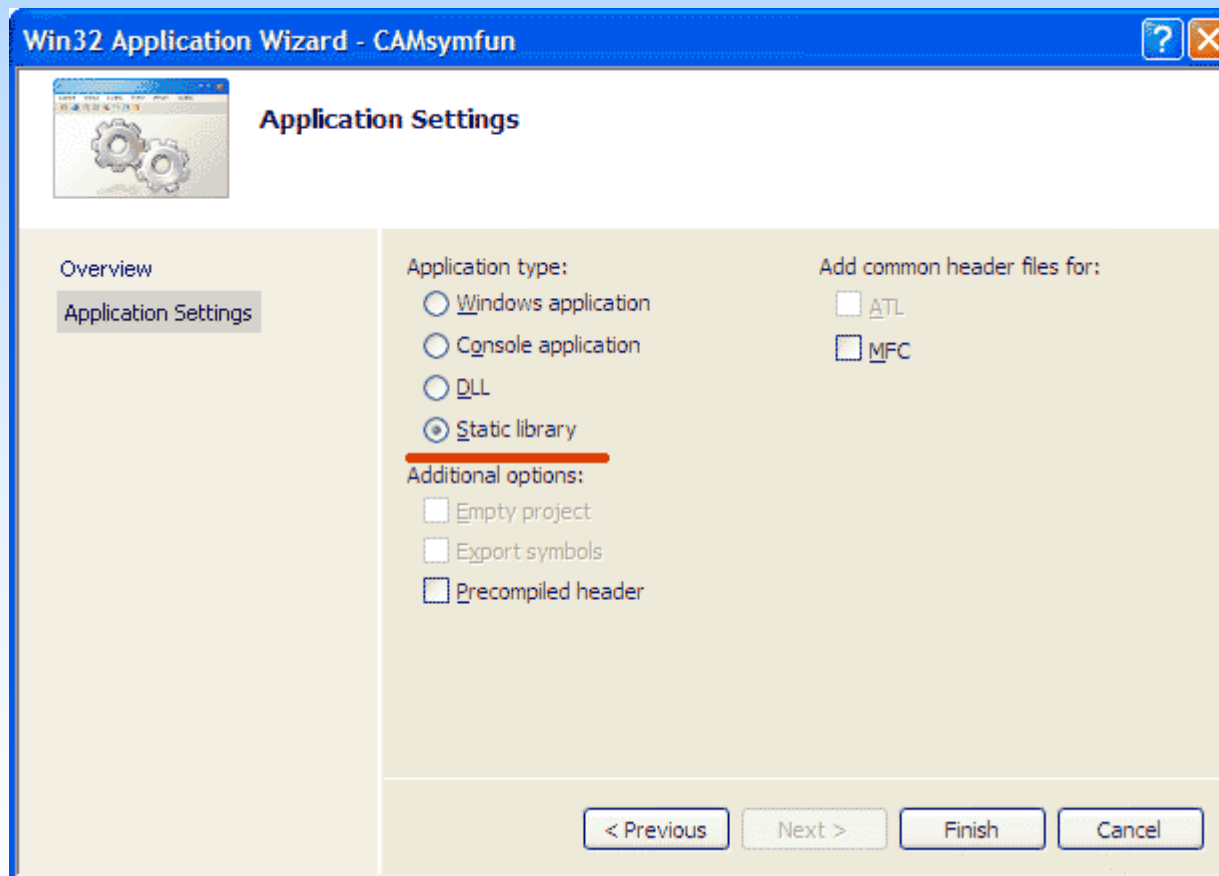
To use .lib files in a project...

- You need to specify the location of the headers for the library routines (add an “include path”).
- You need to specify the name and location of the library.
- The project compiler settings must match those used to create the library.



How to build a .lib files?

Create a new project, choose Win32, specify Static library as application type. A link to specific instructions is on the class announcement page...



We'll talk about Dynamic-Link (DLL) libraries later...