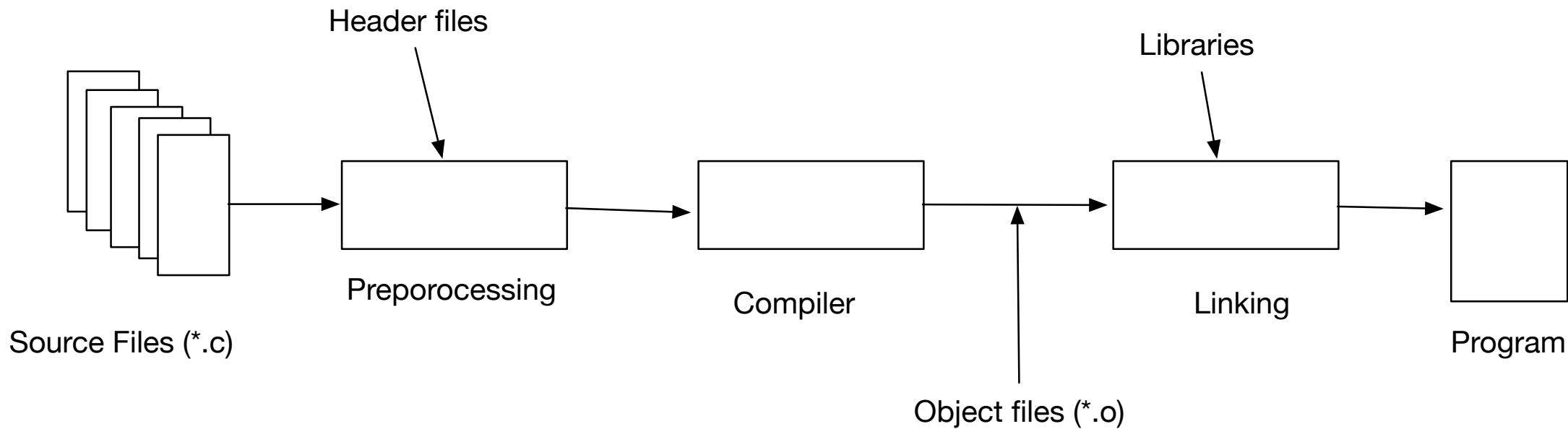


Libraries, standard and user-created

From Code to Executable program

ABC/LP

- C has a standard library which contains built-in functions, constants and header files.
- We have already used a number of these like:
 - <stdio.h>**
 - <string.h>**
 - <stdlib.h>**

- For the most part it is enough to include the header files in the source file where these libraries are used, for example:

#include <stdio.h>

#include <string.h>

#include <stdlib.h>

- But in some cases you need to link the library in your compiler (and linker) command.
- So to use the functions in the math library (<math.h>) the source code would have to be compiled (and linked) thusly:

```
gcc my_file.c -o my_file -lm
```

- Where the flag -l stands for library and m is the math library.

List of C standard libraries:

ABC/LP

<assert.h> <signal.h>

<ctype.h> <stdarg.h>

<errno.h> <stddef.h>

<float.h> <stdio.h>

<limits.h> <stdlib.h>

<locale.h> <string.h>

<math.h> <time.h>

<setjmp.h>

<http://www.cplusplus.com/reference/clibrary>

http://www.tutorialspoint.com/c_standard_library/index.htm

Egna bibliotek

ABC/LP

- Man samlar på sig en massa egna funktioner som ger bra saker, hantera inläsning, strängar etc.
- Dessa kan läggas i egna källkodsfiler, och utifrån *.c filen genereras en *.o
- Ett antal *.o filer kan sedan läggas samman till ett bibliotek

Bibliotek skapas via kommandot ar:

```
ar -cvq archive files
```

- Vi kan lista innehållet i ett bibliotek via
`nm biblioteksnamn`
- Vid kompileringen inkluderas biblioteket via:
`gcc c.c -lmittbibliotek -o program`
- Vi kan också behöva spec:a en sökväg till vårt bibliotek

```
gcc c.c. -L/home/lennart/lib -lmittbibliotek -o program
```