How can I create C header files [closed]

I want to be able to create a collection of functions in a header file that I could #include in one of my C Programs.

c | function | header-files | modular

asked May 14 '10 at 1:41

user340838
231 1 4 3

closed as too broad by H2CO3, Chris Laplante, zero323, Flimzy, CoverosGene Nov 12 '13 at 1:42

There are either too many possible answers, or good answers would be too long for this format. Please add details to narrow the answer set or to isolate an issue that can be answered in a few paragraphs.

If this question can be reworded to fit the rules in the help center, please edit the question.

34 with a text editor? – stefanB May 14 '10 at 1:45

12 If I follow properly, what you want is to create a library, similar to the standard C libraries so you include a header file with function definitions, then link against that library when building your final executable. Is that right? – Conspicuous Compiler May 14 '10 at 2:06

Yes, you are right. – user340838 May 14 '10 at 2:07

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3 Answers

1. Open your favorite text editor
2. Create a new file named whatever.h
3. Put your function prototypes in it

DONE.

Example whatever.h

```
#ifndef WHATEVER_H_INCLUDED
#define WHATEVER_H_INCLUDED
int f(int a);
#endif
```

Note: include guards (preprocessor commands) added thanks to luke. They avoid including the same header file twice in the same compilation. Another possibility (also mentioned on the comments) is to add `#pragma once` but it is not guaranteed to be supported on every compiler.

Example whatever.c

```
#include "whatever.h"

int f(int a) { return a + 1; }
```

And then you can include "whatever.h" into any other .c file, and link it with whatever.c's object file.

Like this:

sample.c

```
#include "whatever.h"

int main(int argc, char **argv)
{
    printf("%d\n", f(2)); /* prints 3 */
    return 0;
}
```

To compile it (if you use GCC):

```
$ gcc -c whatever.c -o whatever.o
$ gcc -c sample.c -o sample.o
```

To link the files to create an executable file:

```
$ gcc sample.o whatever.o -o sample
```

You can test sample:

```
$ ./sample
3
$
```

edited Dec 1 '12 at 13:06
elias
570 2 13

answered May 14 '10 at 1:45
Pablo Santa Cruz
78.7k 12 139 185

6 you might want to mention header guards – luke May 14 '10 at 1:48

@luke: Thanks a lot. Have no idea what header guards are. Going to google it now. Thanks again. – Pablo Santa Cruz May 14 '10 at 1:50

@luke: oh! I see. Good point. Going to add them. – Pablo Santa Cruz May 14 '10 at 1:50

2 @luke They're officially called include guards, but your term is pretty common. There's also `#pragma once`, which is non-standard but widely supported and (in my opinion) much simpler – Michael Mrozek May 14 '10 at 1:57

1 That is nice, but can't I say what a function does in the header file to? Is there any other form of modular programming? – user340838 May 14 '10 at 2:03

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Header files can contain any valid C code, since they are injected into the compilation unit by the pre-processor prior to compilation.

If a header file contains a function, and is included by multiple `.c` files, each `.c` file will get a copy of that function and create a symbol for it. The linker will complain about the duplicate symbols.

It is technically possible to create `static` functions in a header file for inclusion in multiple `.c` files. Though this is generally not done because it breaks from the convention that code is found in `.c` files and declarations are found in `.h` files.

See the discussions in C/C++: Static function in header file, what does it mean? for more explanation.

answered Aug 28 '13 at 15:52
Bryan Ash
2,351 16 34

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Keep in mind that you can also place the header file in another director so long as you give the path in the include statement. Just make sure you keep the path relative instead of absolute. That way your code remains portable.

For example:

```
#include "../my_headers_directory/whatever.h"
```

tells the program to include whatever.h that in the parent directory's my_headers_director.

edited Nov 20 '11 at 20:49
HostileFork
16.3k 1 36 75

answered May 14 '10 at 3:09
stratz
35 2

9 This is not an answer, it should be a comment. – ocharles Aug 30 '11 at 23:40

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