

LINK&COMPILE MULTIPLE SOURCE FILES IN C PROGRAMMING LANGUAGE

INPUT FILES

.c .h

c ve h dosyalarından oluşan programlarımız tek bir source dosyası gibi compile edilemediği, link edilmesi gerektiğinden bir makefile a ihtiyaç duyarız.



makefile dosyası sayesinde otomatik olarak compile ve link işlemleri yapılır.

```
C main.c M makefile x C dividing.c C dividing.h C multiplying.c
M makefile
1 # Define compiler and flags
2 CC = gcc
3 CFLAGS = -Wall -Wextra -Werror
4
5 # Define source files and object files
6 SOURCES = main.c adding.c subtracting.c multiplying.c dividing.c
7 OBJECTS = $(SOURCES:.c=.o)
8
9 # Define the target executable
10 TARGET = program
11
12 # Default rule to compile each source file into an object file
13 %.o: %.c
14 | $(CC) $(CFLAGS) -c $< -o $@
15
16 # Rule to build the target executable by linking object files
17 $(TARGET): $(OBJECTS)
18 | $(CC) $(OBJECTS) -o $(TARGET)
19
20 # Clean rule to remove generated files
21 clean:
22 | rm -f $(OBJECTS) $(TARGET)
23
24
```

Make file dosyasını çalıştırmak için mingw32-make gereklidir. Yüklü değilse "MinGW Installation Manager" ile gerekli yüklem yapılmalı, environments kısmından path eklenmeli. Aslında yapılan işlemler main.c den main.o adding.c den adding.o ... tüm output dosyalarını oluşturmak.

OLASI HATA DURUMU:makefile:14: *** missing separator. Stop.
ÇÖZÜM:

PS C:\Users\bayram\Desktop\PROJELER\Küçük Proje\Draft projects\multiple_c_files> mingw32-make.exe
gcc -Wall -Wextra -Werror -c main.c -o main.o
gcc -Wall -Wextra -Werror -c adding.c -o adding.o
gcc -Wall -Wextra -Werror -c subtracting.c -o subtracting.o
gcc -Wall -Wextra -Werror -c multiplying.c -o multiplying.o
gcc -Wall -Wextra -Werror -c dividing.c -o dividing.o
gcc main.o adding.o subtracting.o multiplying.o dividing.o -o program
PS C:\Users\bayram\Desktop\PROJELER\Küçük Proje\Draft projects\multiple_c_files> |

Command Palette... Ctrl+Shift+F
Profiles (Default) >
Settings Ctrl+,
Extensions Ctrl+Shift+X
Keyboard Shortcuts Ctrl+K Ctrl+S
User Snippets
User Tasks
Themes >
Backup and Sync Settings...
Check for Updates...
Default rule to compile each source file into an object file
%.o: %.c
\$(CC) \$(CFLAGS) -c \$< -o \$@
Default rule to compile each source file into an object file
%.o: %.c
\$(CC) \$(CFLAGS) -c \$< -o \$@

OUTPUT FILES

.o .exe

Sonuç olarak .o uzantıları oluşturuldu ve .exe uzantılı program oluştu.



MAKEFILE OLMADAN MANUEL COMPILE VE LINKING

gcc -c .\main.c .\adding.c .\dividing.c .\subtracting.c .\multiplying.c
gcc -o program .\main.o .\adding.o .\dividing.o .\subtracting.o .\multiplying.o

C:\Users\bayram\Desktop\PROJELER\Küçük Proje\Draft projects\multiple_c_files> gcc -c .\main.c .\adding.c .\dividing.c .\subtracting.c .\multiplying.c
C:\Users\bayram\Desktop\PROJELER\Küçük Proje\Draft projects\multiple_c_files> gcc -o program .\main.o .\adding.o .\dividing.o .\subtracting.o .\multiplying.o

ALTERNATIVE METHODE with JSON FILE

<https://code.visualstudio.com/docs/cpp/config-mingw>

<https://www.youtube.com/watch?v=Ar40VjBW3-M>

- tasks.json (build instructions)
- launch.json (debugger settings)
- c_cpp_properties.json (compiler path and IntelliSense settings)



@ComputerScience-pd7ad 6 months ago



Hi!

I have a problem. I followed everything on this video. However, when I tried to debug, it is showing ".*cpp: Invalid argument" error: no input files

How can I fix this? Thank you so much.

Show less

3 replies

@adnmx 5 months ago

I've been trying to solve this issue for myself for the past few hours. I found that if you have any spaces in your filepath, which causes the entire path to be surrounded by quotes, including the *.cpp part, which is then not recognized properly. Removing spaces from the filepath, or, if you can find a way to do:

2 replies

@ComputerScience-pd7ad 5 months ago

It is working now you are 100% correct. Thank you and I hope you have a good day!

1 reply

@mfbayramfence 6 minutes ago (edited)

It solved my issue too with a small "\\" update, thank you very much. Incase anyone needs (you can replace c files to cpp)

1

```
C main.c tasks.json M makefile C dividing.c C
1 {
2   "version": "2.0.0",
3   "tasks": [
4     {
5       "type": "cpbui",
6       "label": "PPB COMPILER",
7       "command": "gcc",
8       "args": [
9         "-c",
10        ".\\main.c",
11        ".\\adding.c",
12        ".\\dividing.c",
13        ".\\subtracting.c",
14        ".\\multiplying.c",
15        "-o",
16        "main.o",
17        "-o",
18        "adding.o",
19        "-o",
20        "dividing.o",
21        "-o",
22        "subtracting.o",
23        "-o",
24        "multiplying.o",
25        "-o",
26        "program",
27        ".\\main.o",
28        ".\\adding.o",
29        ".\\dividing.o",
30        ".\\subtracting.o",
31        ".\\multiplying.o",
32        "-o",
33        "program",
34        "-o",
35        "program"
36      ]
37     }
38   ]
39 }
40
```

The terminal process failed to launch (exit code: -1).
Terminal will be reused by tasks, press any key to close it.

Executing task: PPB COMPILER

Starting build...
gcc -c .\\main.c .\\adding.c .\\dividing.c .\\subtracting.c .\\multiplying.c && gcc -o program .\\main.o .\\adding.o .\\dividing.o .\\subtracting.o .\\multiplying.o
Build finished successfully.
Terminal will be reused by tasks, press any key to close it.

```
method 2
{
  "version": "2.0.0",
  "tasks": [
    {
      "type": "PPB COMPILER",
      "type": "cpbui",
      "command": "gcc",
      "args": [
        "-c",
        "${workspaceFolder}\\*.c",
        "-o",
        "main.o",
        "-o",
        "adding.o",
        "-o",
        "dividing.o",
        "-o",
        "subtracting.o",
        "-o",
        "multiplying.o",
        "-o",
        "program",
        "${workspaceFolder}\\*.o",
        "-o",
        "program",
        "-o",
        "program"
      ]
    }
  ]
}
```