

HOW TO CREATE YOUR OWN LIBRARY IN C?

Ever wondered how you build your own library In C Program?

WHAT IS HEADER FILE?

- Header File Is Pre-define Library or preprocessor In C. Like `#include<stdio.h>`, A C header file is a **text file that contains pieces of code written in the C programming language.**

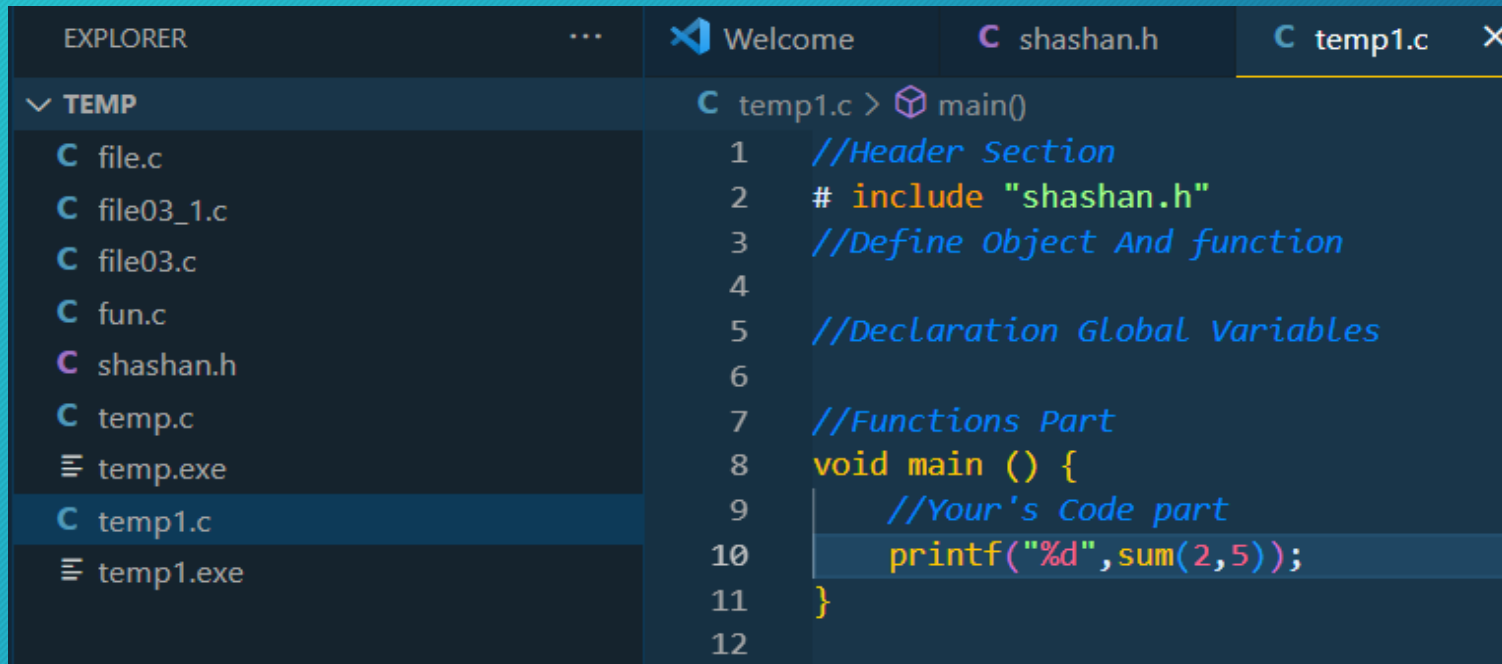
```
1  //Header Section
2  # include<stdio.h>
3  //Define Object And function
4
5  //Declaration Global Variables
6
7  //Functions Part
8  void main () {
9      //Your's Code part
10 }
11
12
```

Why Need To Create Header File?

- In C programming, a header file is a separate file that contains declarations of functions, constants, and data structures that are used across multiple source code files. Custom header files can help organize your code, improve maintainability, and promote code reusability. Let's discuss how to create a custom header file in C.

Create Header File For Local File(Program)

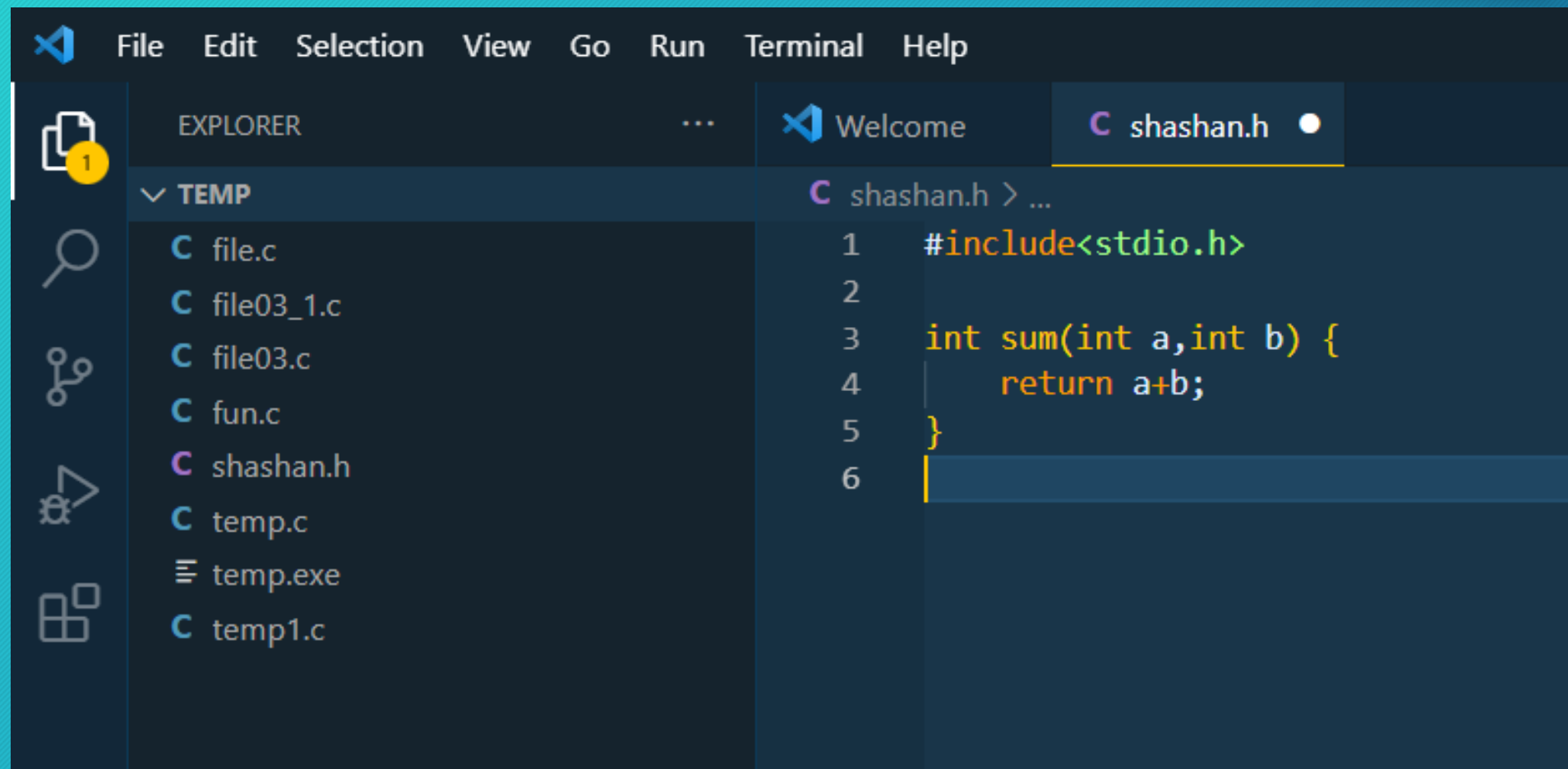
- For Local File You Can Create Library, It Works For Current Folder Not Any Folder.
- Header Code Is `#include "shashan.h"`



The screenshot shows the Visual Studio Code interface. On the left, the 'EXPLORER' sidebar displays a folder named 'TEMP' containing several files: 'file.c', 'file03_1.c', 'file03.c', 'fun.c', 'shashan.h' (highlighted in purple), 'temp.c', 'temp.exe', 'temp1.c' (highlighted in blue), and 'temp1.exe'. The main editor area shows the 'temp1.c' file with the following code:

```
C temp1.c > main()
1 //Header Section
2 #include "shashan.h"
3 //Define Object And function
4
5 //Declaration Global Variables
6
7 //Functions Part
8 void main () {
9     //Your's Code part
10    printf("%d",sum(2,5));
11 }
12
```

Header File Demo In Local Files



How To Make A local Library Global?

- Your Dream Is To Make Standard Library Like `#include<stdio.h>`?
- But How?

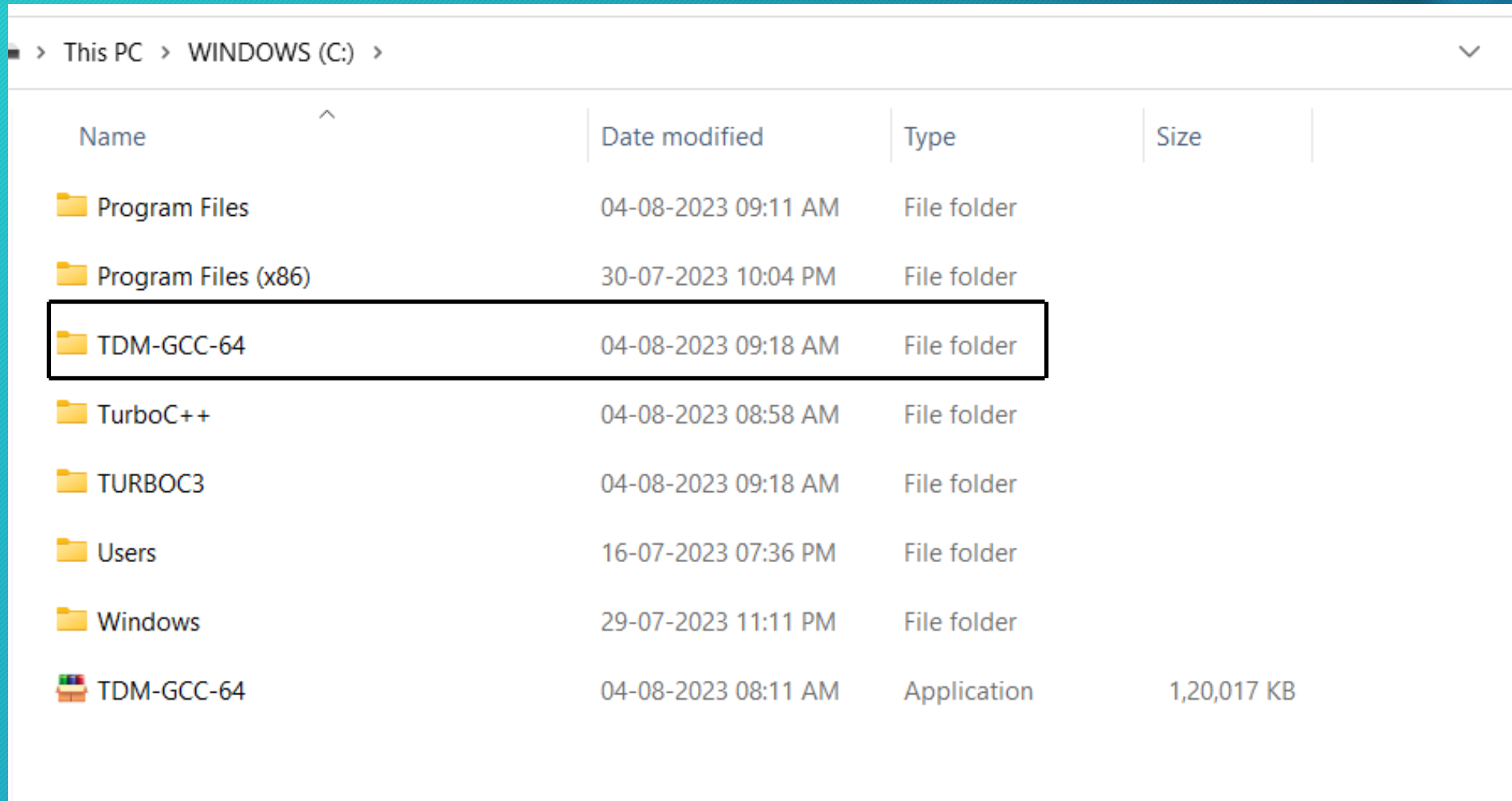
Compiler plays the main role to run the standard library or preprocessor.

- `#include<stdio.h>` In line `stdio.h` is header file like my header file `shashan.h`
- If My Library Converts To Global, It Can Be Used Just Like `#include<stdio.h>`

```
C temp1.c > ...
1  //Header Section
2  # include <shashan.h>
3  //Define Object And function
4
5  //Declaration Global Variables
6
7  //Functions Part
8  void main () {
9      //Your's Code part
10     printf("%d",factorial(5));
11 }
12
13
```

Let's Find Where Is Standard Headers File In Compiler

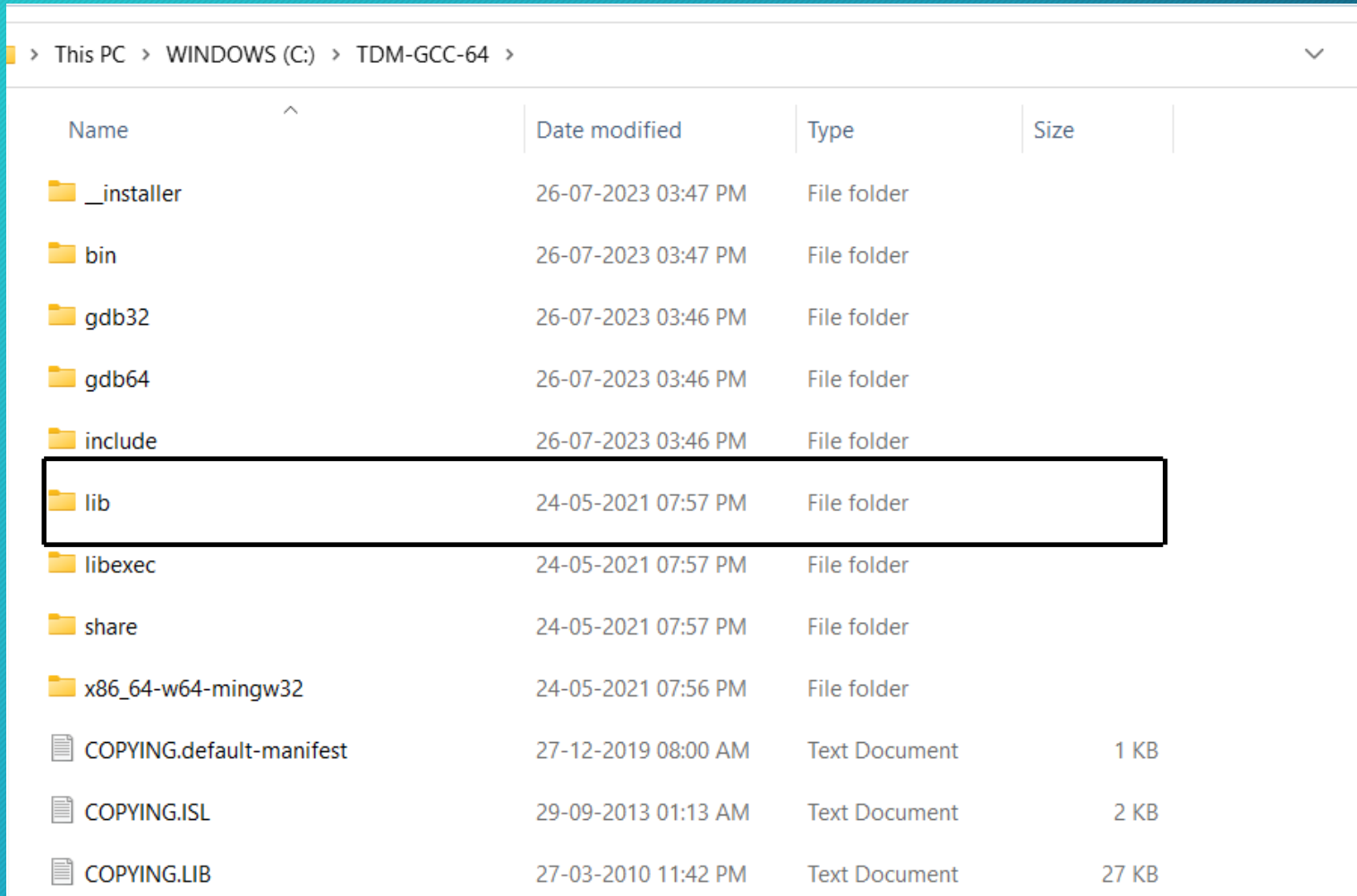
Find Where Is Your Compiler



File Explorer window showing the contents of the C:\Windows directory. The path is 'This PC > WINDOWS (C:)'. The table below lists the files and folders found.

Name	Date modified	Type	Size
Program Files	04-08-2023 09:11 AM	File folder	
Program Files (x86)	30-07-2023 10:04 PM	File folder	
TDM-GCC-64	04-08-2023 09:18 AM	File folder	
TurboC++	04-08-2023 08:58 AM	File folder	
TURBOC3	04-08-2023 09:18 AM	File folder	
Users	16-07-2023 07:36 PM	File folder	
Windows	29-07-2023 11:11 PM	File folder	
TDM-GCC-64	04-08-2023 08:11 AM	Application	1,20,017 KB

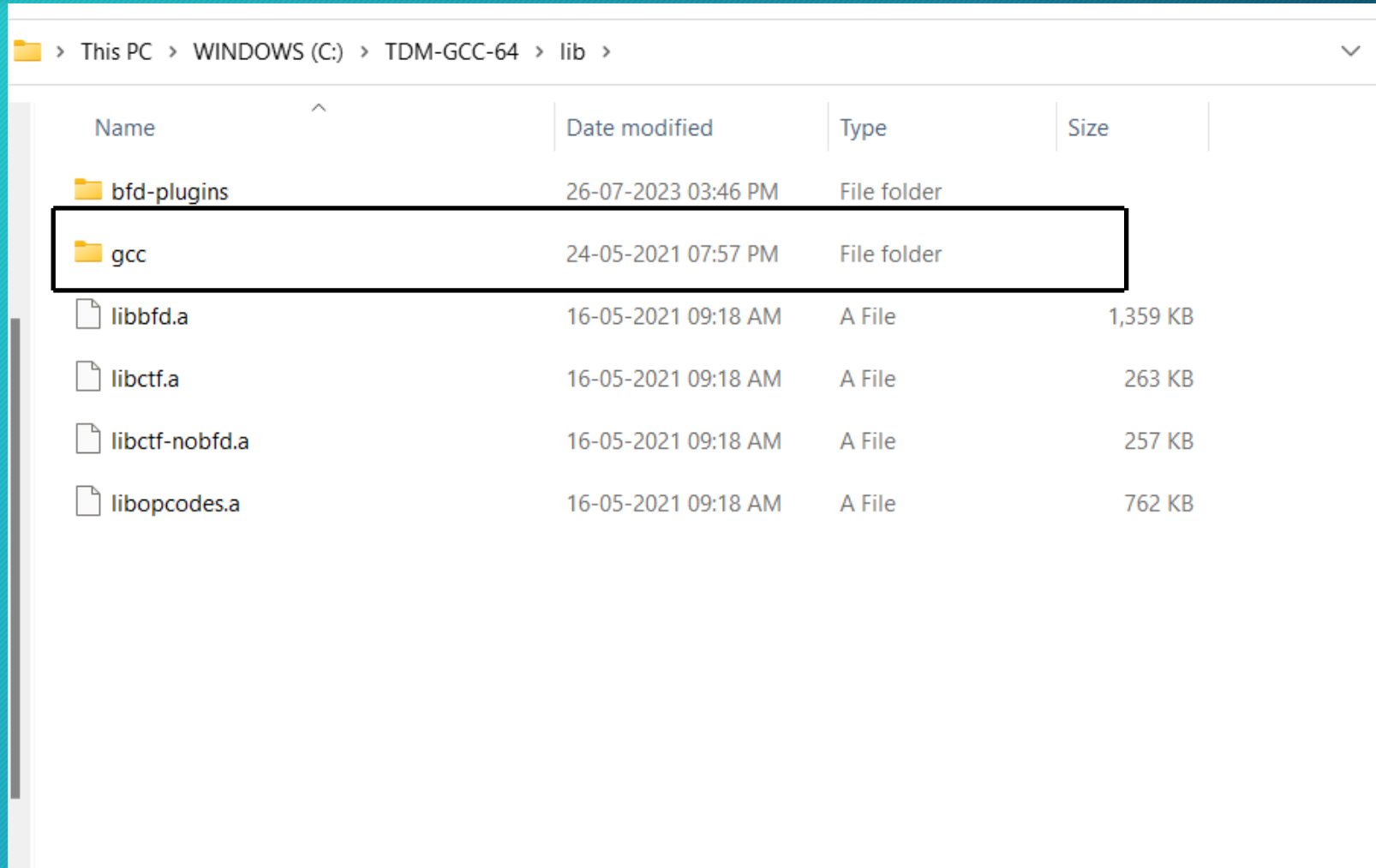
Go TO Lib File To Find Library



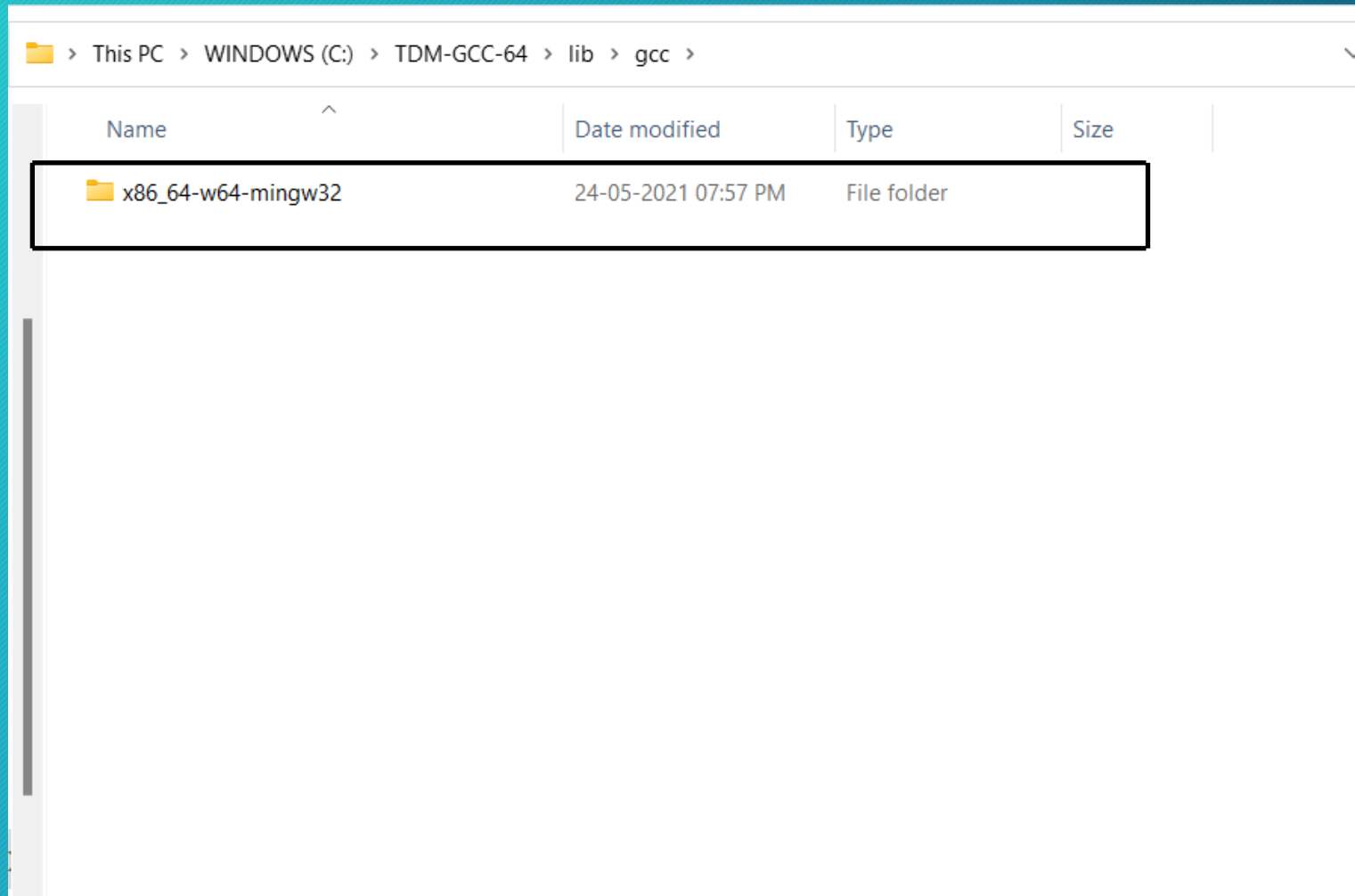
> This PC > WINDOWS (C:) > TDM-GCC-64 >

Name	Date modified	Type	Size
__installer	26-07-2023 03:47 PM	File folder	
bin	26-07-2023 03:47 PM	File folder	
gdb32	26-07-2023 03:46 PM	File folder	
gdb64	26-07-2023 03:46 PM	File folder	
include	26-07-2023 03:46 PM	File folder	
lib	24-05-2021 07:57 PM	File folder	
libexec	24-05-2021 07:57 PM	File folder	
share	24-05-2021 07:57 PM	File folder	
x86_64-w64-mingw32	24-05-2021 07:56 PM	File folder	
COPYING.default-manifest	27-12-2019 08:00 AM	Text Document	1 KB
COPYING.ISL	29-09-2013 01:13 AM	Text Document	2 KB
COPYING.LIB	27-03-2010 11:42 PM	Text Document	27 KB

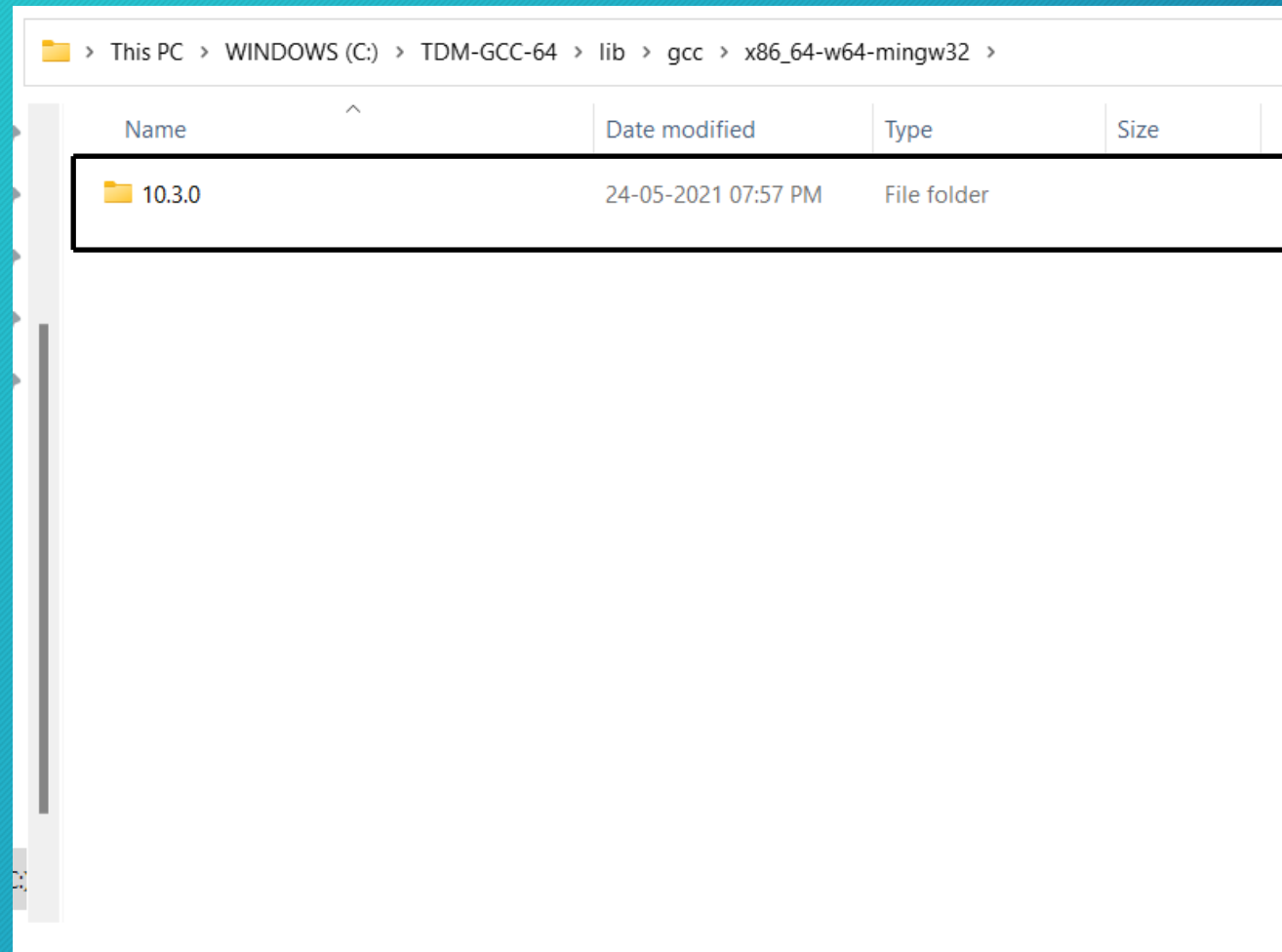
Go To gcc Folder.



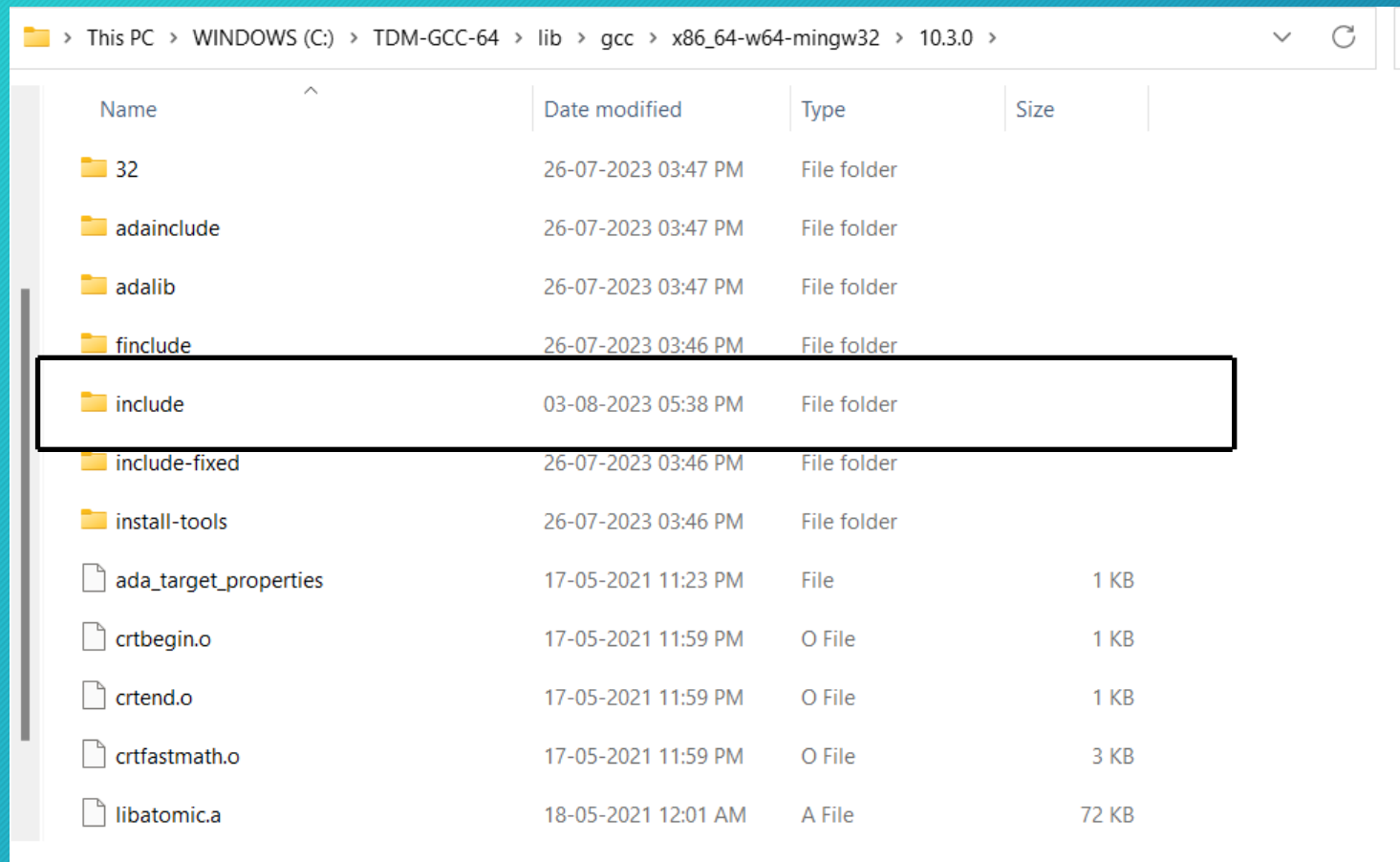
Click On This Folder



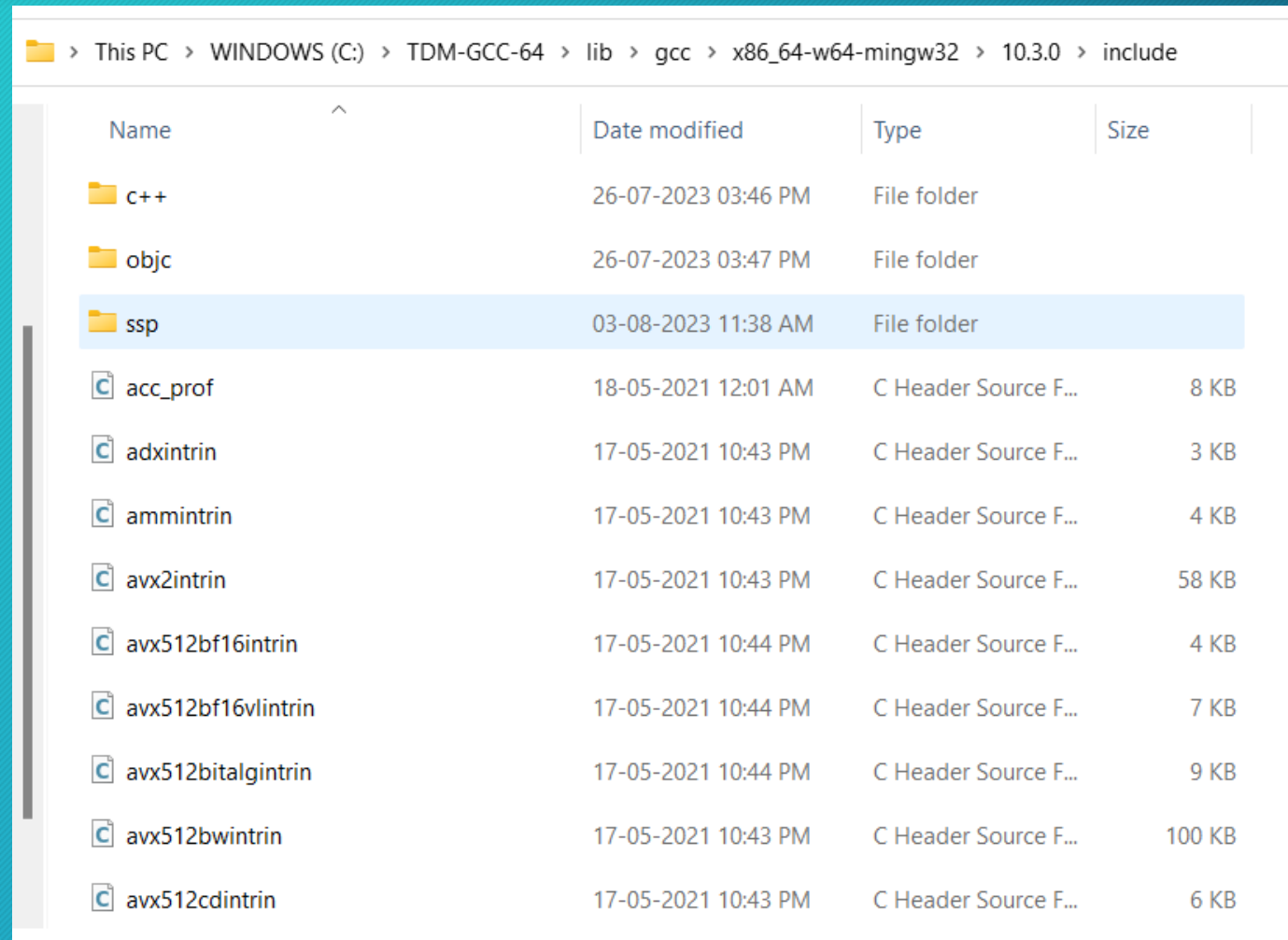
Click On This Forlder



You Write `#include<stdio.h>` so call compiler and make request to access header file, all header files are save in include folder.

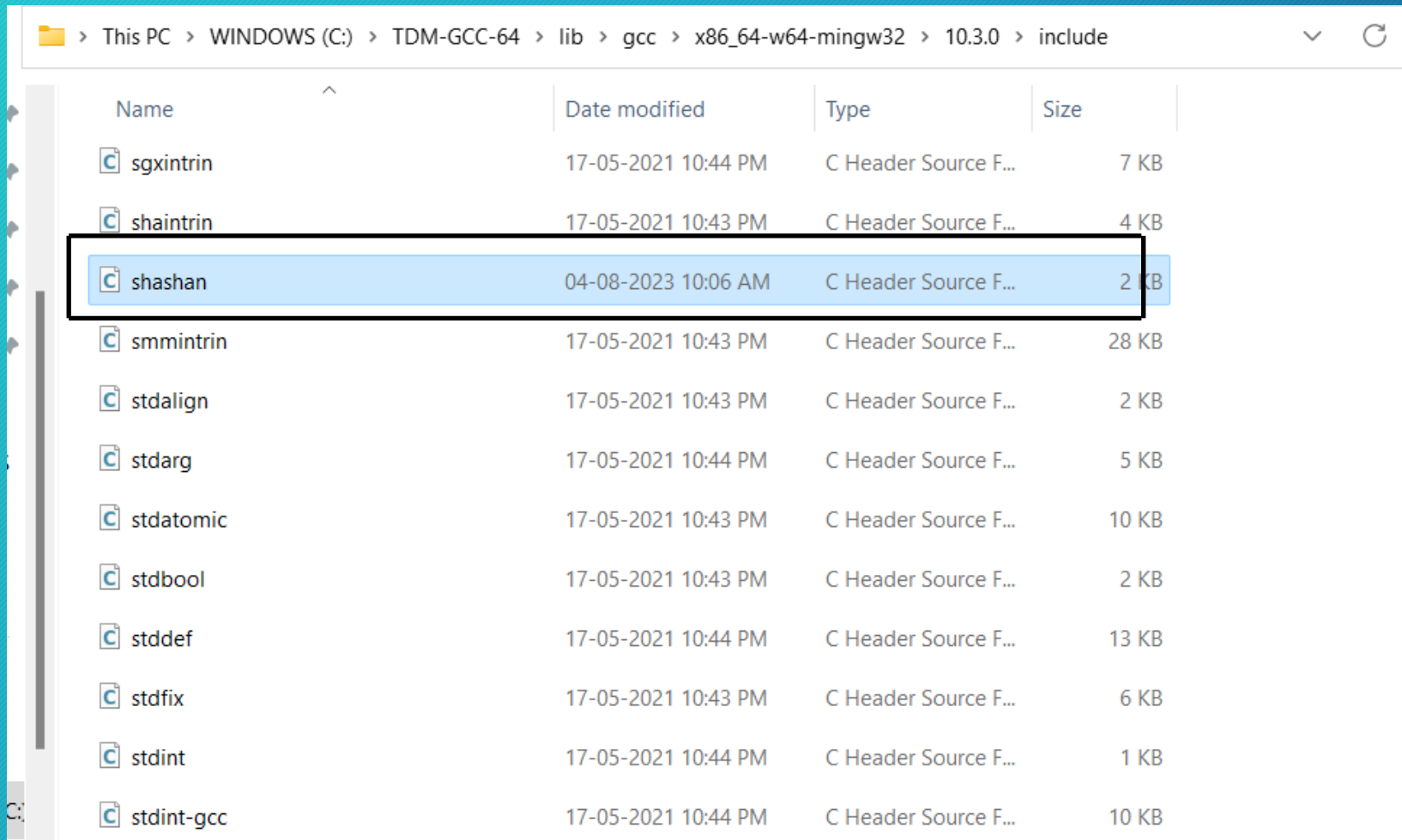


All Standard Header File is Available In This Folder
So You Need Add Your Header File In This Folder.



Name	Date modified	Type	Size
c++	26-07-2023 03:46 PM	File folder	
objc	26-07-2023 03:47 PM	File folder	
ssp	03-08-2023 11:38 AM	File folder	
acc_prof	18-05-2021 12:01 AM	C Header Source F...	8 KB
adxintrin	17-05-2021 10:43 PM	C Header Source F...	3 KB
ammintrin	17-05-2021 10:43 PM	C Header Source F...	4 KB
avx2intrin	17-05-2021 10:43 PM	C Header Source F...	58 KB
avx512bf16intrin	17-05-2021 10:44 PM	C Header Source F...	4 KB
avx512bf16lintrin	17-05-2021 10:44 PM	C Header Source F...	7 KB
avx512bitalgintrin	17-05-2021 10:44 PM	C Header Source F...	9 KB
avx512bwintrin	17-05-2021 10:43 PM	C Header Source F...	100 KB
avx512cdintrin	17-05-2021 10:43 PM	C Header Source F...	6 KB

Add Your Header File Like This



The screenshot shows a Windows File Explorer window with the address bar displaying the path: This PC > WINDOWS (C:) > TDM-GCC-64 > lib > gcc > x86_64-w64-mingw32 > 10.3.0 > include. The main area displays a list of files with columns for Name, Date modified, Type, and Size. The file 'shashan' is highlighted with a black rectangle.

Name	Date modified	Type	Size
sgxintrin	17-05-2021 10:44 PM	C Header Source F...	7 KB
shaintrin	17-05-2021 10:43 PM	C Header Source F...	4 KB
shashan	04-08-2023 10:06 AM	C Header Source F...	2 KB
smmintrin	17-05-2021 10:43 PM	C Header Source F...	28 KB
stdalign	17-05-2021 10:43 PM	C Header Source F...	2 KB
stdarg	17-05-2021 10:44 PM	C Header Source F...	5 KB
stdatomic	17-05-2021 10:43 PM	C Header Source F...	10 KB
stdbool	17-05-2021 10:43 PM	C Header Source F...	2 KB
stddef	17-05-2021 10:44 PM	C Header Source F...	13 KB
stdfix	17-05-2021 10:43 PM	C Header Source F...	6 KB
stdint	17-05-2021 10:44 PM	C Header Source F...	1 KB
stdint-gcc	17-05-2021 10:44 PM	C Header Source F...	10 KB

How Add Library In Old Platform Like Turbo C

- Turbo C Have Inbuild Compiler.
- First Step Is You Can Find Turbo C, Then Open “INCLUDE” Folder.
- Paste Your Header File In This Folder.
- In Turbo C have old compiler So some library are not work and some rules of code are follow else got errors.

Features of #include<shashan.h>

All Standard Library In Include One Library so you can use all function only
need #include<shashan.h>

~>ADDITIONAL FUNCTIONS IN THIS LIBRARY

1. Find Factorial.
2. Check Prime Or Not.
3. Swap Two Variable Values.
4. Check Greatest Of Nth Numbers.
5. *Find The Roots Of Quadratic Equation.*
6. *Find Sum Of Nth Natural Numbers.*
7. Encryption & Decryption strings.
8. *New Variable 'String' Using Typedef and New Function 'scans' This Scan Values Include Space.*

LETS START THE DEMO

EXAMPLE CODE

GCC FOLDER

HEADER FILE

$$\begin{aligned}y &= x^2 + 2x - 3 \\y &= \frac{-2 \pm \sqrt{(2)^2 - 4(1)(-3)}}{2(1)} \\y &= \frac{-2 \pm \sqrt{4 + 12}}{2} \\y &= \frac{-2 \pm \sqrt{16}}{2} \\y &= \begin{cases} \frac{-2 + 4}{2} = \frac{2}{2} = 1 \\ \frac{-2 - 4}{2} = \frac{-6}{2} = -3 \end{cases}\end{aligned}$$



<https://sites.google.com/view/shashan-gcc>

If You Want My Library Download Compiler.



THANK YOU

Special Thanks TO Charusat & Abhishek Sir.