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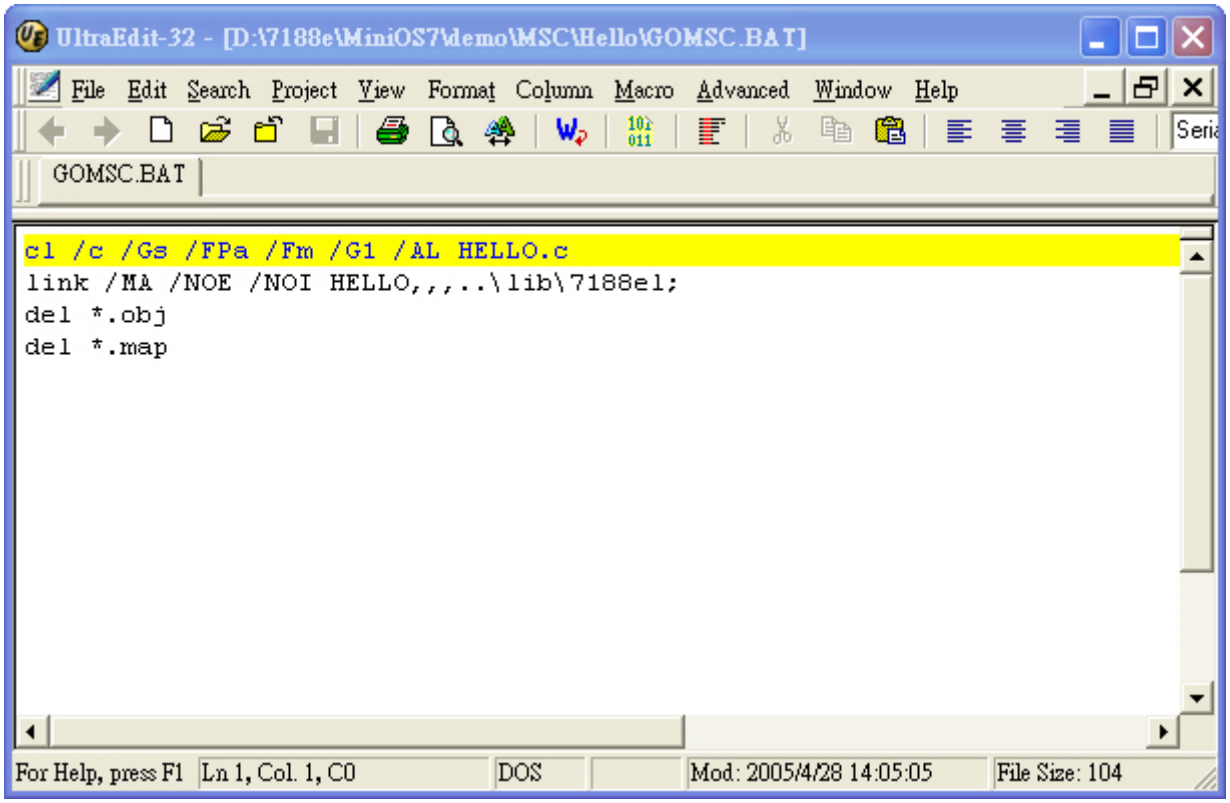
First editor: Liam

Last editor: Vic, 2014/2/25

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Compiling using the MSC 6.00 Compiler

Step 1: In the source file folder, create a batch file called Gomsc.bat.



NOTE: **/C** : don't strip comments

/Gs : no stack checking

/FPa : calls with altmath

/Fm : [map file]

/G1 : 186 instructions

/AL : large model

HELLO.C : the source file

..\lib\7188el : the path of the function library

Step 2: Run the Gomsc.bat file.

```
D:\7188e\MiniOS7\demo\MSC\Hello>Gomsc

D:\7188e\MiniOS7\demo\MSC\Hello>cl /c /Gs /FPa /Fm /G1 /AL HELLO.c
Microsoft (R) C Optimizing Compiler Version 6.00
Copyright (c) Microsoft Corp 1984-1990. All rights reserved.

HELLO.c

D:\7188e\MiniOS7\demo\MSC\Hello>link /MA /NOE /NOI HELLO,,,,..\lib\7188el;

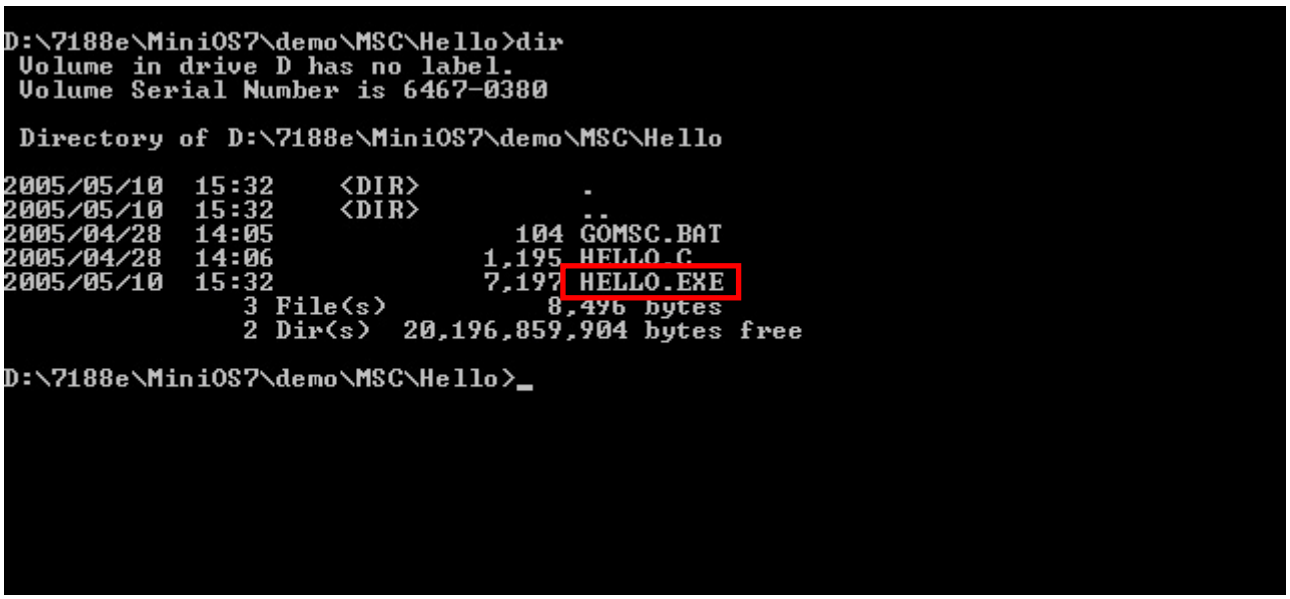
Microsoft (R) Segmented-Executable Linker  Version 5.10
Copyright (C) Microsoft Corp 1984-1990.  All rights reserved.


D:\7188e\MiniOS7\demo\MSC\Hello>del *.obj

D:\7188e\MiniOS7\demo\MSC\Hello>del *.map
D:\7188e\MiniOS7\demo\MSC\Hello>_
```


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Step 3: A new executable file will be created if it is successfully compiled.



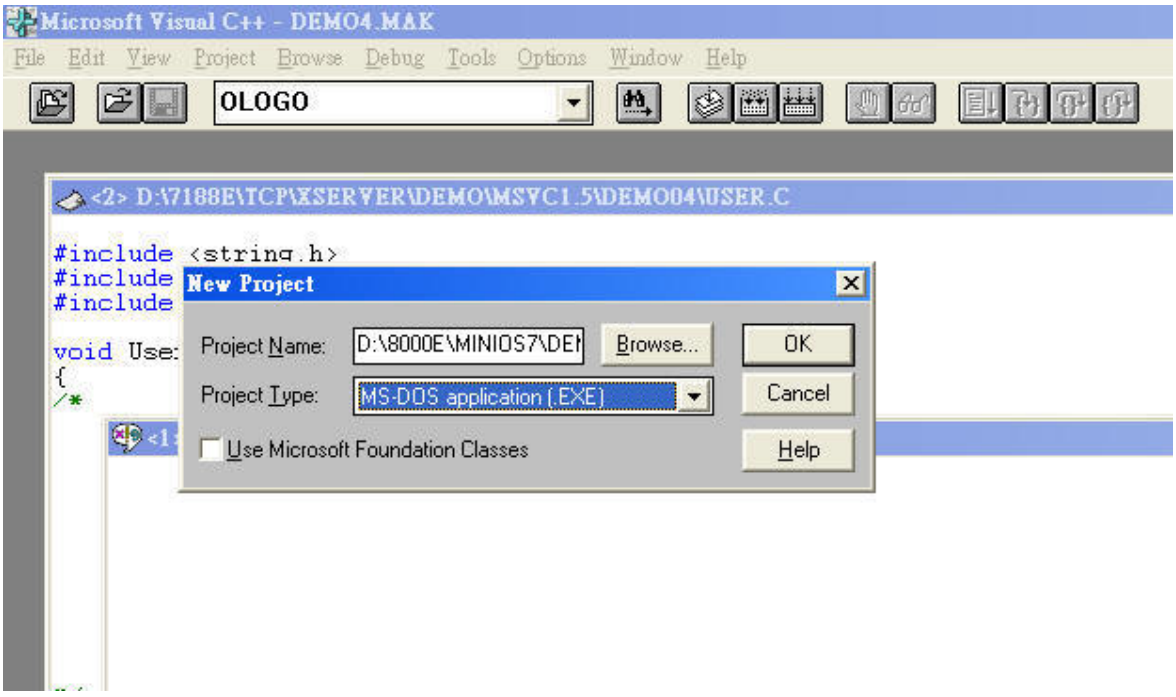
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Compiling using the MSVC 1.50 Compiler

Step 1: Run MSVC.exe

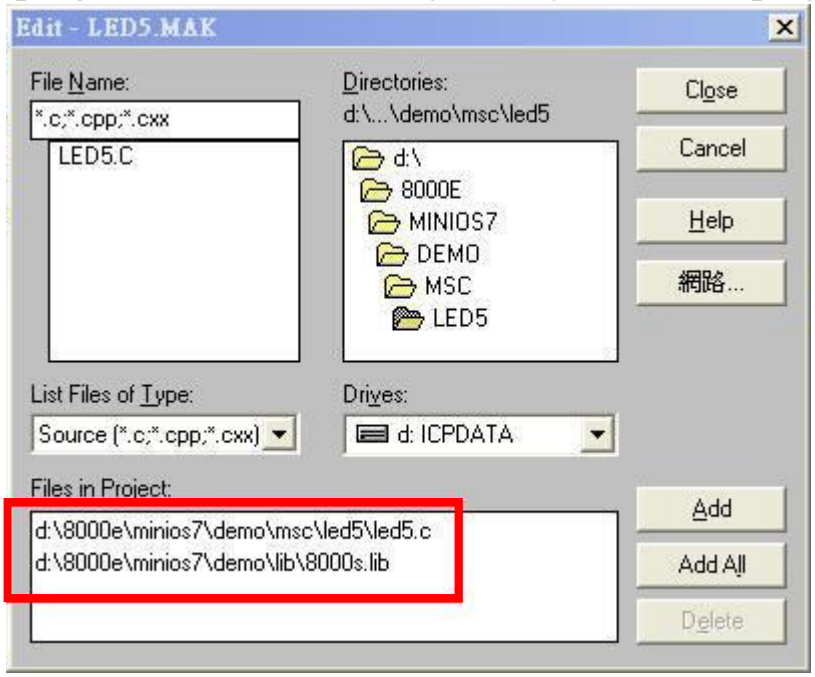


Step 2: Create a new project (*.mak) by entering the name of the project in the Project Name field and then select MS-DOS application (EXE) as the Project type.

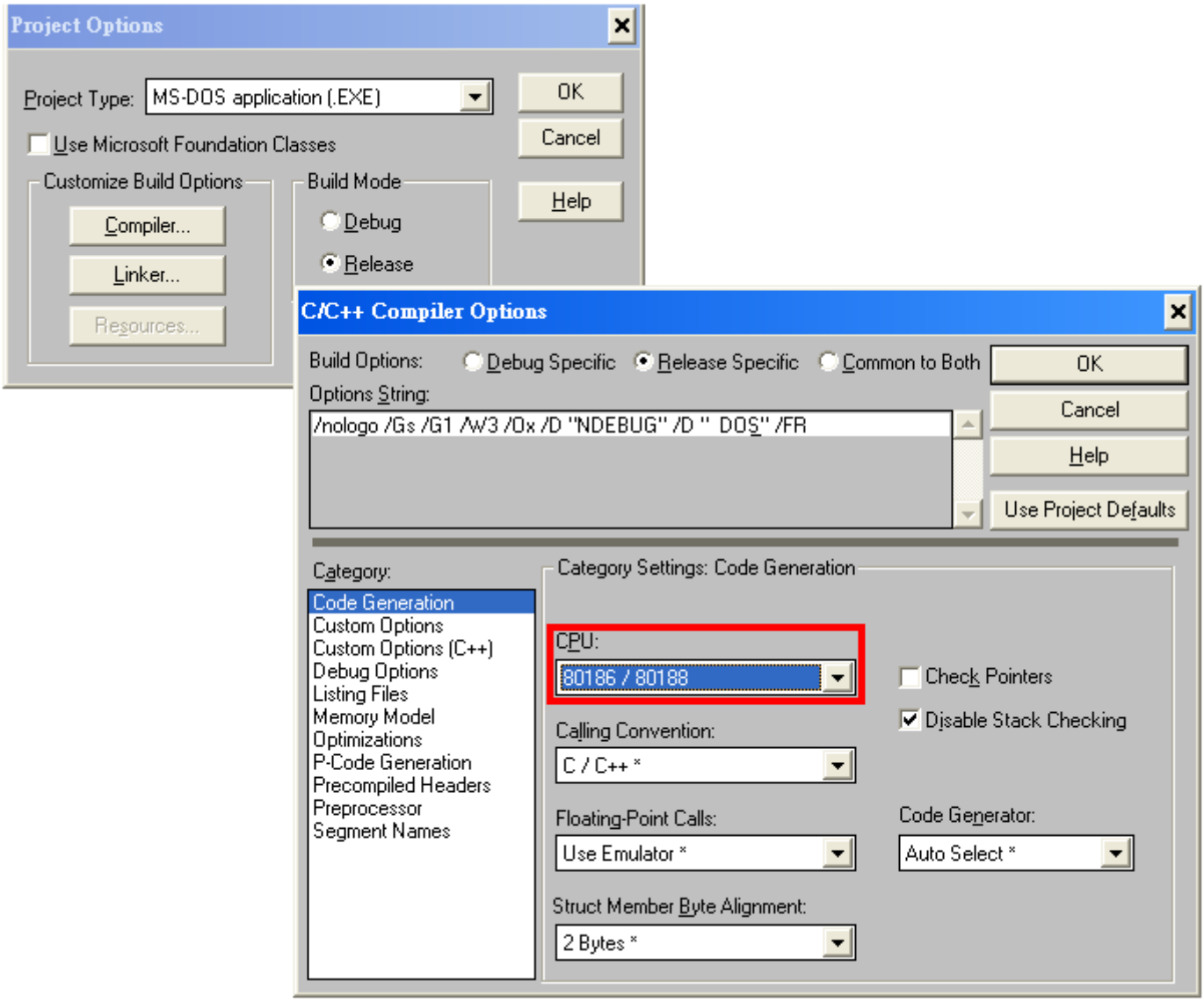


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Step 3: Add the user's program and the necessary library files to the project.

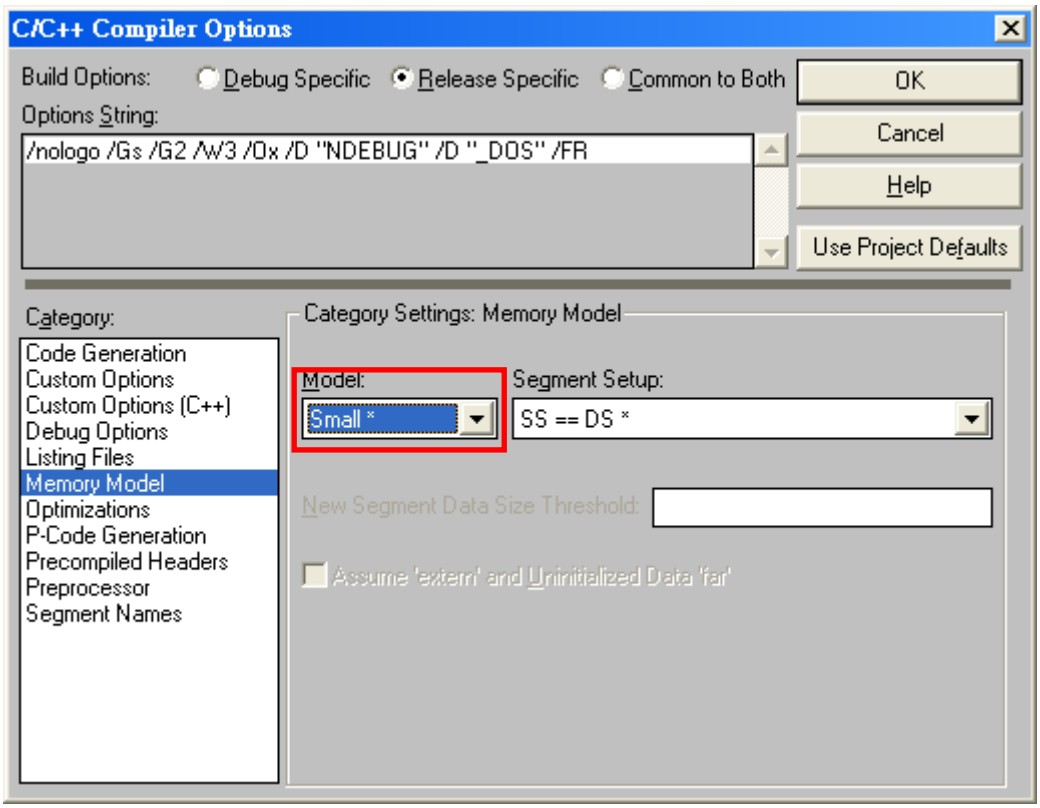


Step 4: Set the Code Generation on the Compiler.

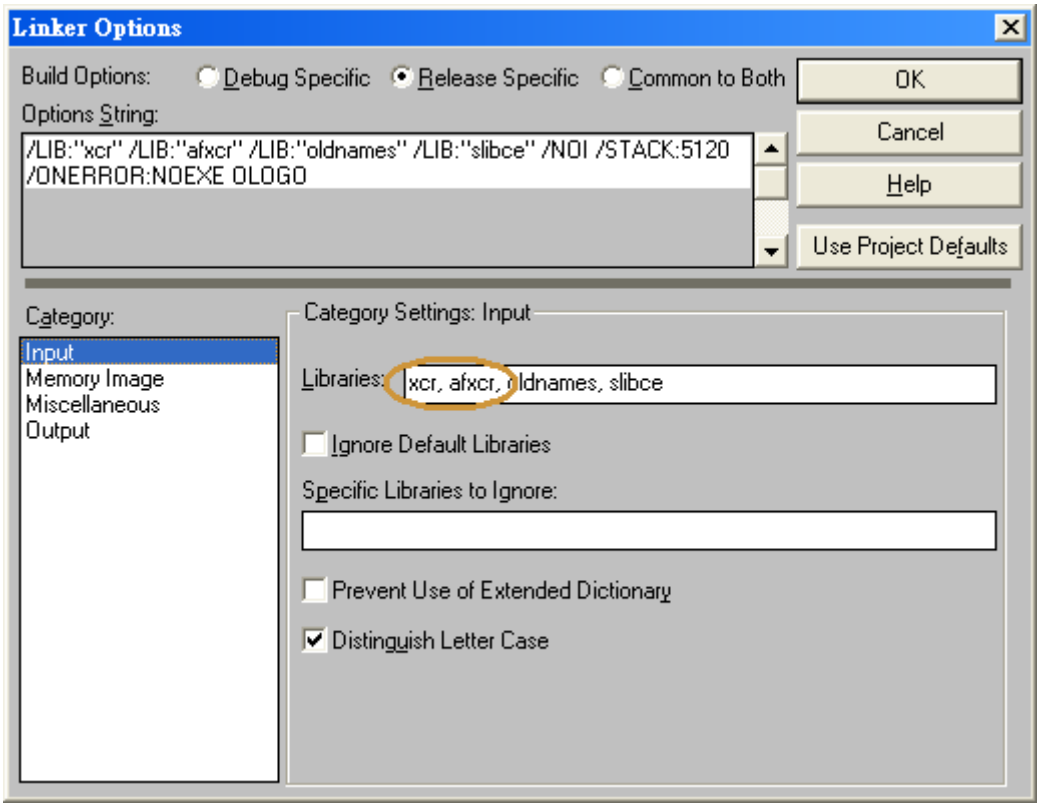


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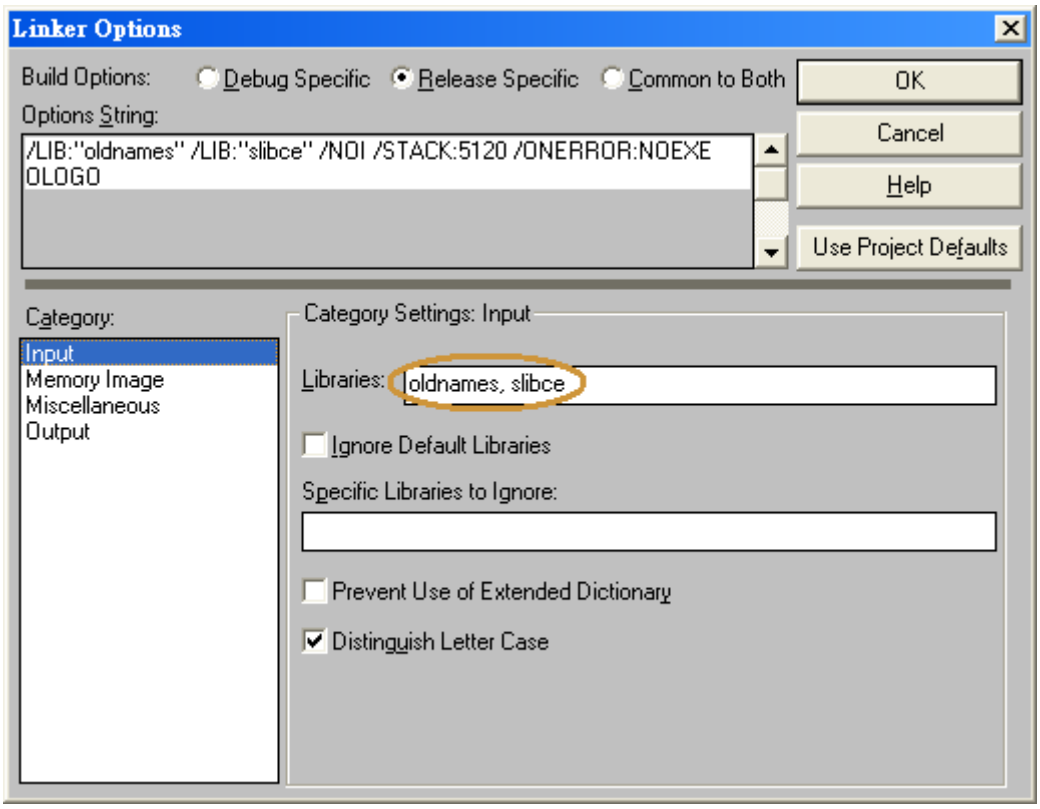
Step 5: Change the Memory model (Small for 8000s.lib\7188es.lib, large for 8000l.lib\7188el.lib).



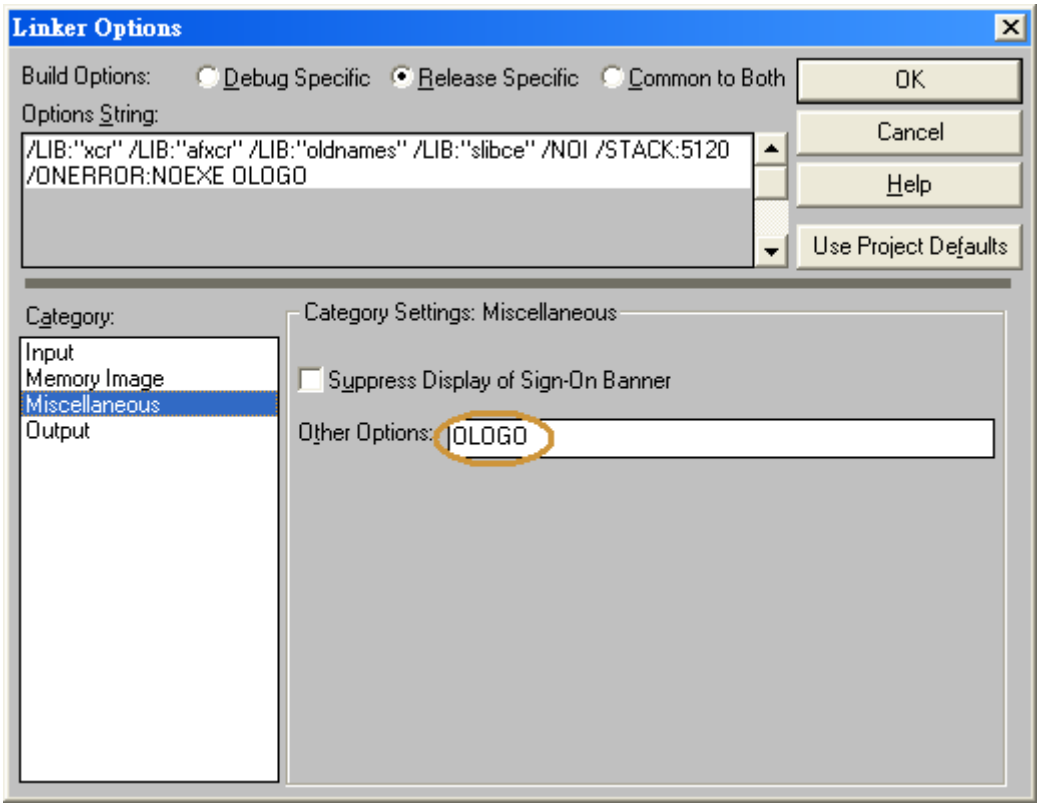
Step 6: Remove the xcr, afxcr library from the Input Category.



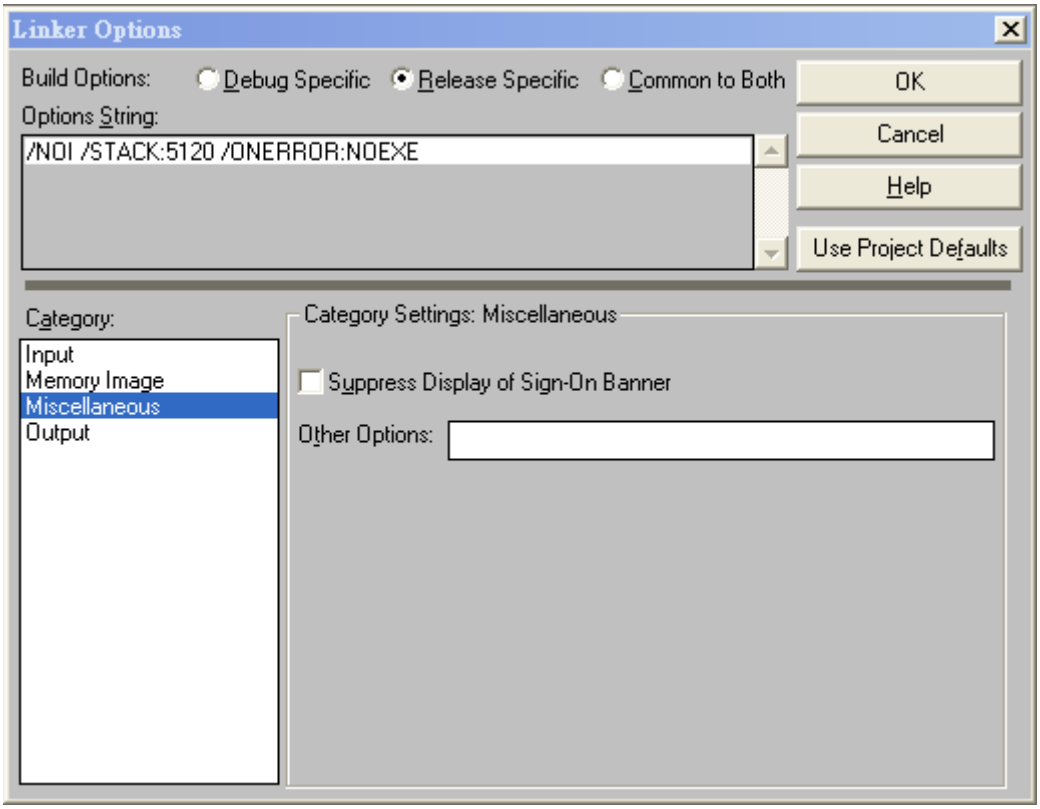
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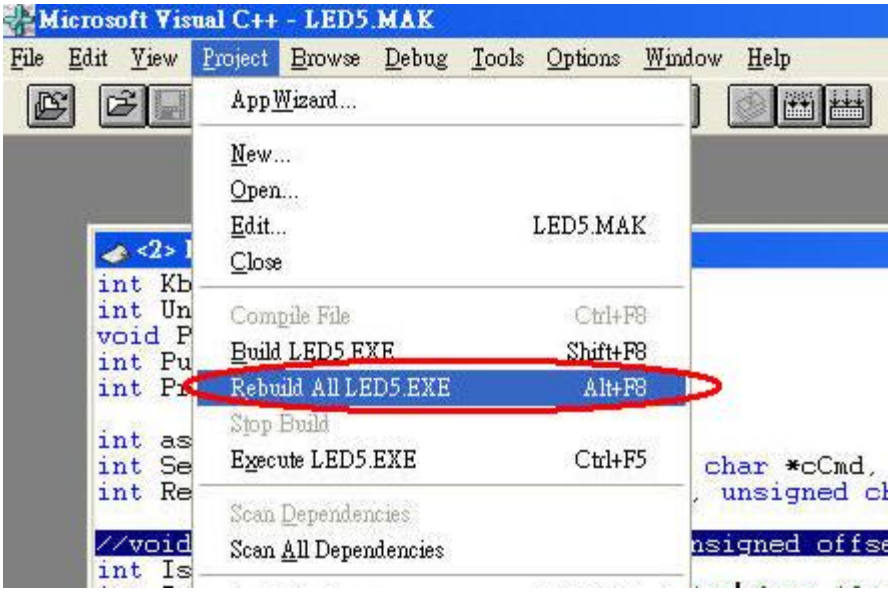
Step 7: Remove the OLOGO option from the miscellaneous Category.



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Step 8: Rebuild the project.



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```
<1> Output
Initializing...
Compiling...
d:\8000e\minios7\demo\msc\led5\led5.c
Linking...

Microsoft (R) Segmented Executable Linker  Version 5.60
Copyright (C) Microsoft Corp 1984-1993.  All rights reserved.

Object Modules [.obj]: /NOI /STACK:5120 /ONERROR:NOEXE   LED5.OBJ +
Object Modules [.obj]:
Run File [LED5.exe]: LED5.EXE
List File [d:LED5.map]: nul
Libraries [.lib]: c:\msvc\lib\+
Libraries [.lib]: c:\msvc\mfc\lib\+
Libraries [.lib]: ..\..\LIB\8000S.LIB+
Libraries [.lib]: oldnames+
Libraries [.lib]: slibce;
Creating browser database...
LED5.EXE - 0 error(s), 0 warning(s)
```

NOTE: If an error occurs while compiling, please commend out the line "void far *_MK_FP(unsigned segment, unsigned offset);" in the 8000.h include file.

```
<1> Output
Compiling...
d:\8000e\minios7\demo\msc\hello\hello.c
d:\8000e\minios7\demo\msc\hello\..\..\lib\8000.h(303) : error C2062: type 'void ' unexpected
 CL returned error code 2.
HELLO.C - 1 error(s), 0 warning(s)
```

<3> D:\8000E\MINIOS7\DEMO\LIB\8000.H

```
int Kbhit(void);
int Ungetch(int key);
void Putch(int data);
int Puts(char *str);
int Print(char *fmt,...);

int ascii_to_hex(char ascii);
int SendCmdTo7000(int iPort, unsigned char *cCmd, int iChksum);
int ReceiveResponseFrom7000(int iPort, unsigned char *cCmd, long lTimeout, int iChksum);

void far *_MK_FP(unsigned segment,unsigned offset);
int IsResetByWatchDogTimer(void);
int IsResetByPowerOff(void); /* for bios date 12/12/98 or later */

int Show5DigitLedWithDot(int pos, int data);
void Set5DigitLedTestMode(int mode);
void Set5DigitLedIntensity(int mode);
void Disable5DigitLed(void);
void Enable5DigitLed(void);
unsigned GetLibVersion(void);
```


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<3> D:\8000E\MINIOS7\DEMO\LIB\8000.H

```
int Kbhit(void);
int Ungetch(int key);
void Putch(int data);
int Puts(char *str);
int Print(char *fmt,...);

int ascii_to_hex(char ascii);
int SendCmdTo7000(int iPort, unsigned char *cCmd, int iChksum);
int ReceiveResponseFrom7000(int iPort, unsigned char *cCmd, long lTimeout, int iChksum);

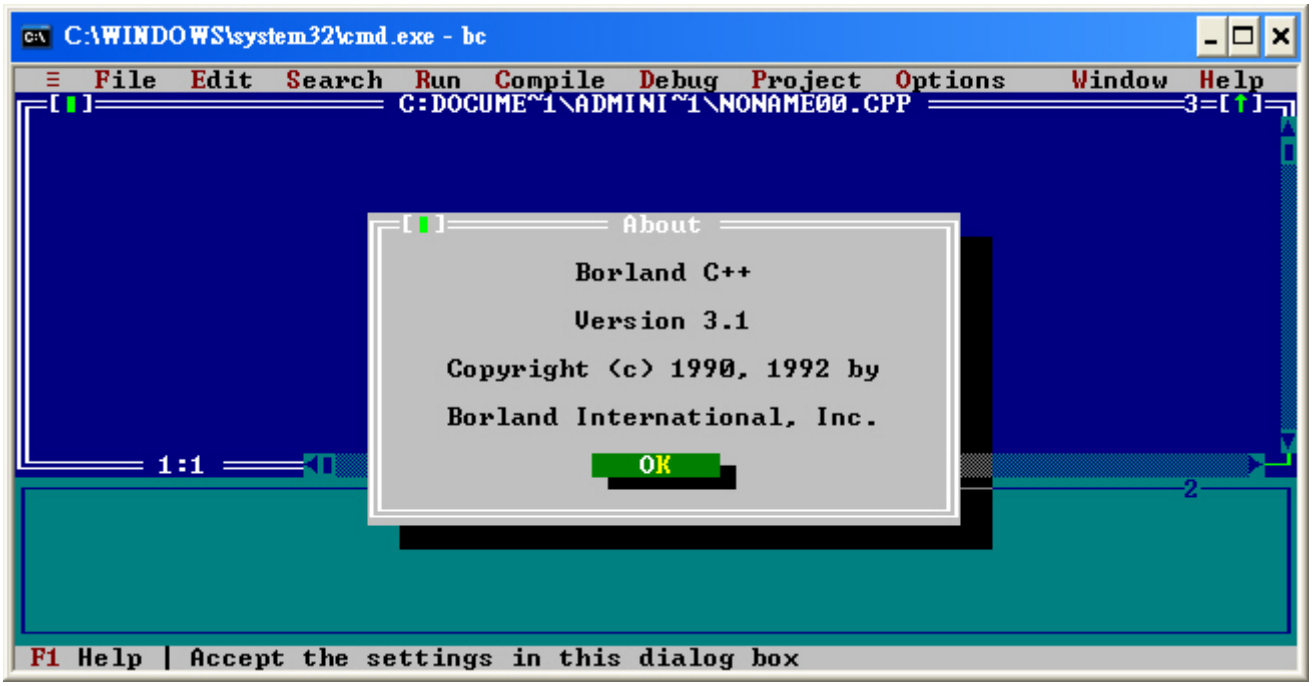
/*void far *_MK_FP(unsigned segment,unsigned offset);
int IsResetByWatchDogTimer(void);
int IsResetByPowerOff(void); /* for bios date 12/12/98 or later */

int Show5DigitLedWithDot(int pos, int data);
void Set5DigitLedTestMode(int mode);
void Set5DigitLedIntensity(int mode);
void Disable5DigitLed(void);
void Enable5DigitLed(void);
```

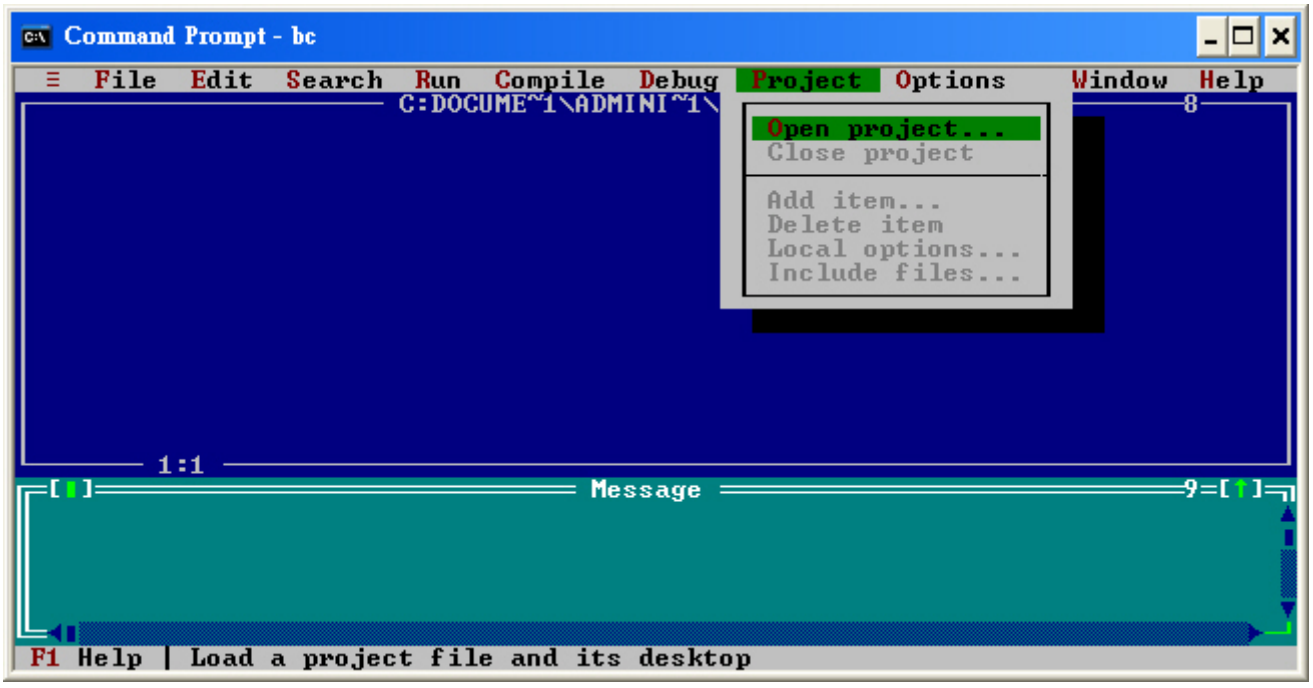

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Compiling using the BC++ 3.1 IDE

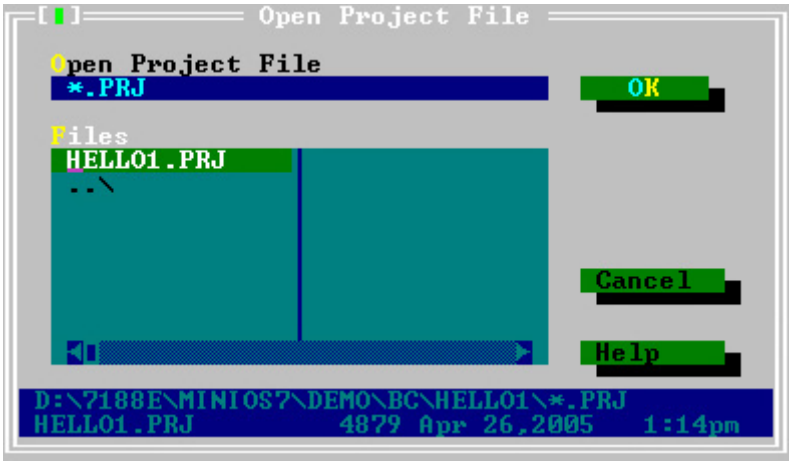
Step 1: Run Borland C++ 3.1.



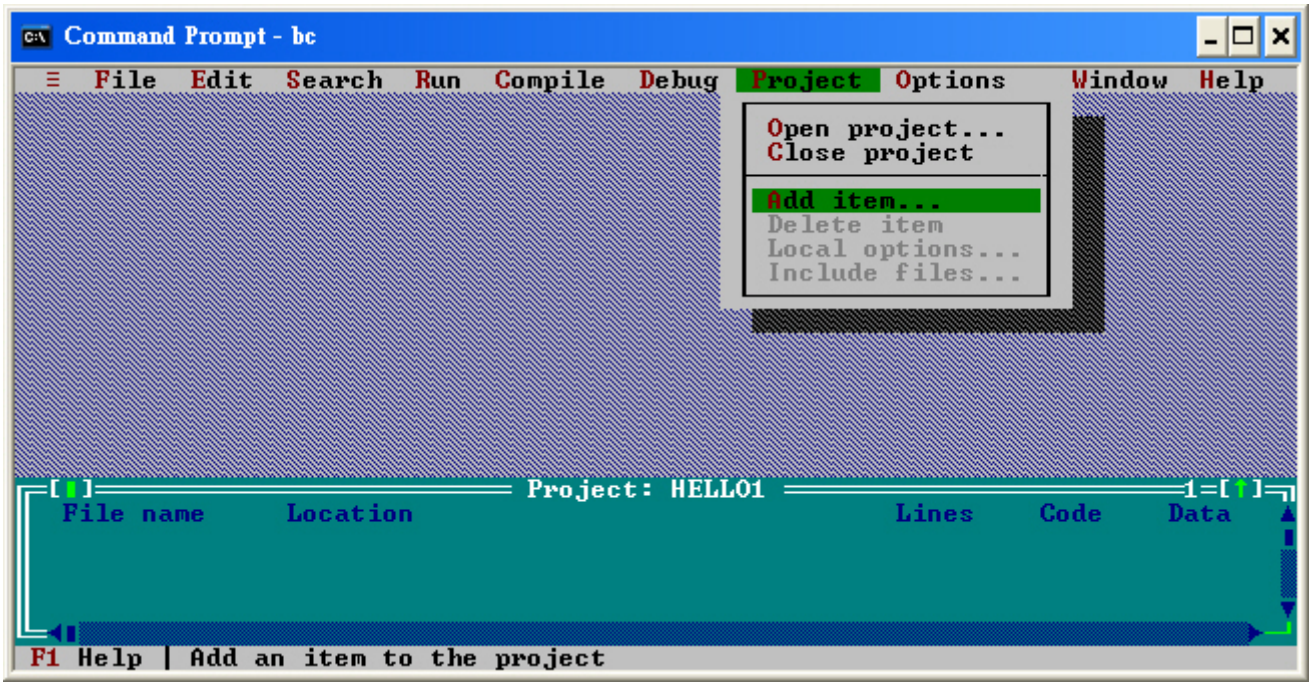
Step 2: Create a new project file (*.prj).



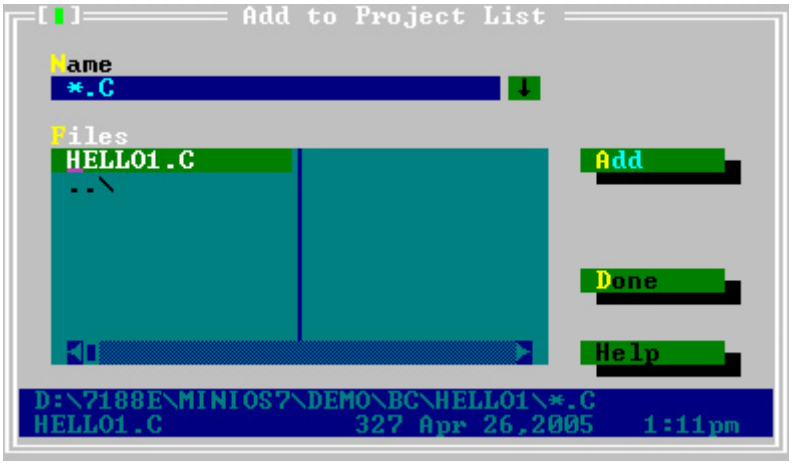
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Step 3: Add all necessary files to the project.

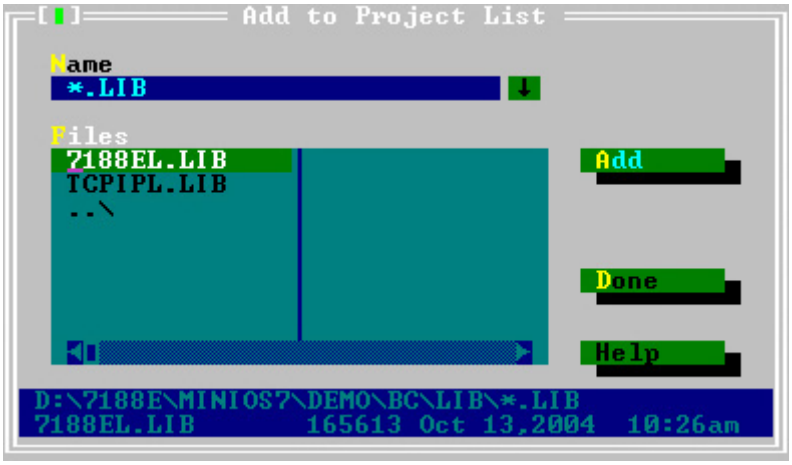


3.1 Select the source file.

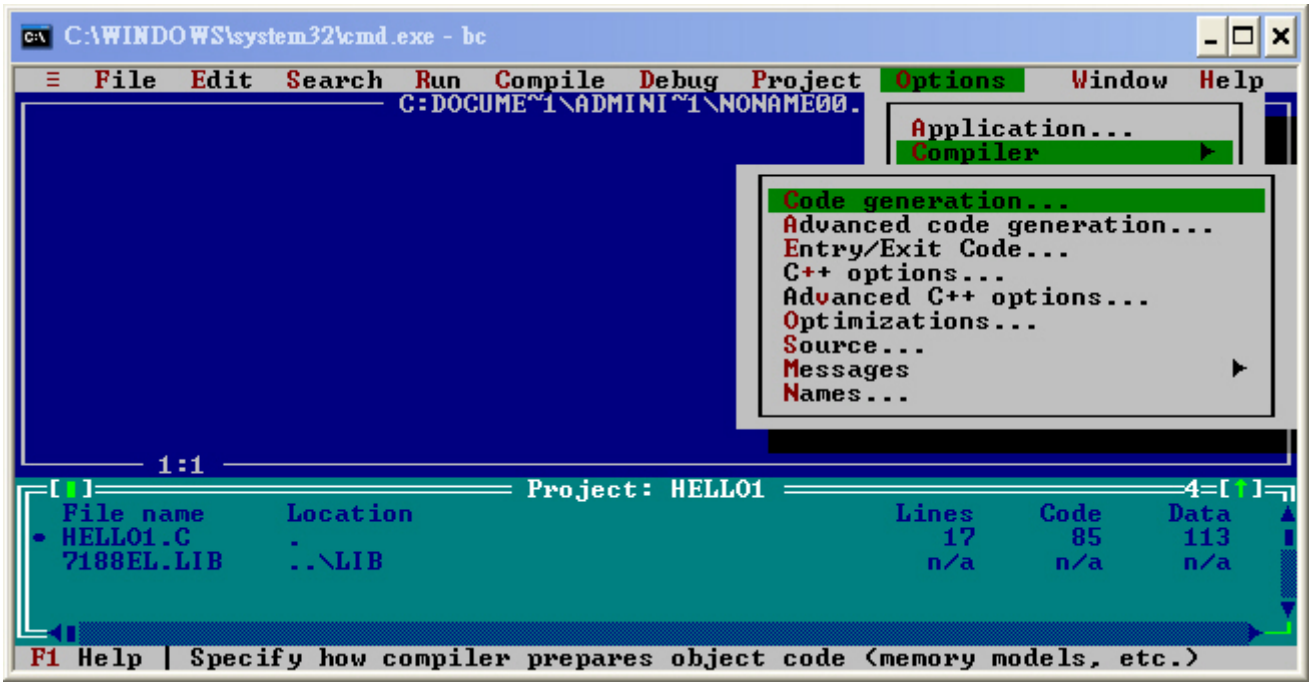


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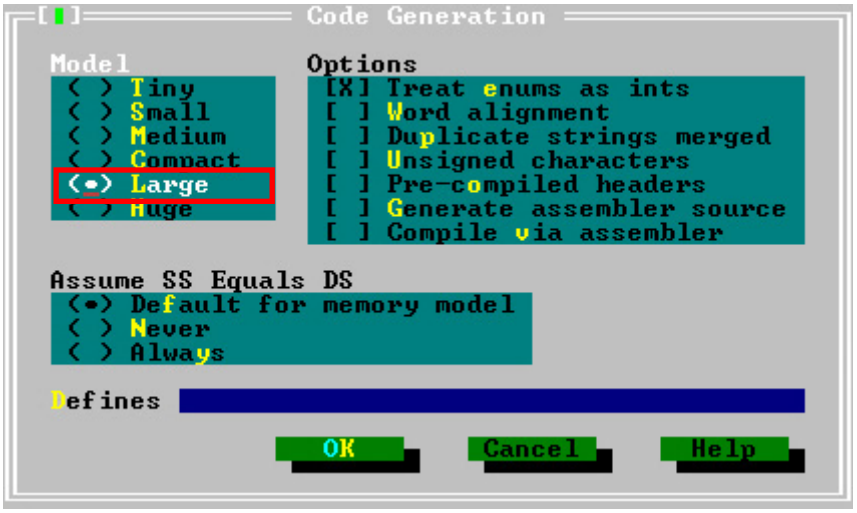
3.2 Select the function library and then click the Done button.



Step 4: Set the Code generation options.

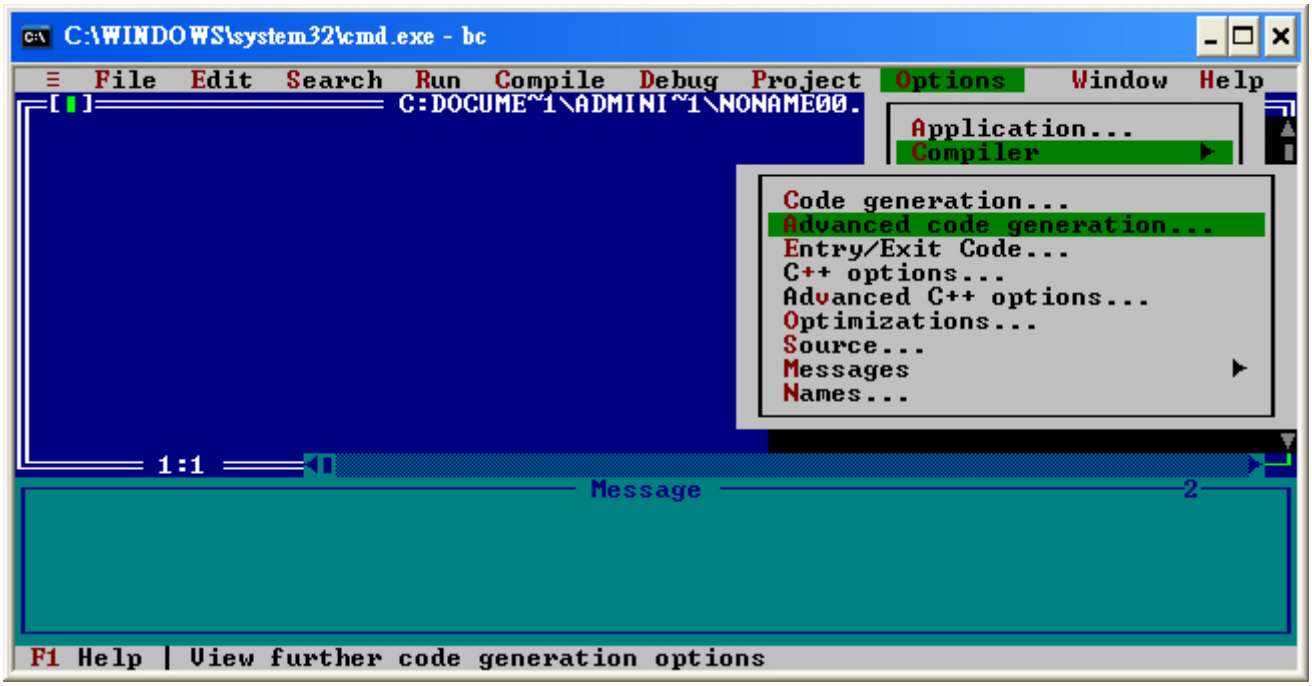


4.1 Change the Memory model (Small for 8000s.lib/7188es.lib, large for 8000l.lib/7188el.lib).

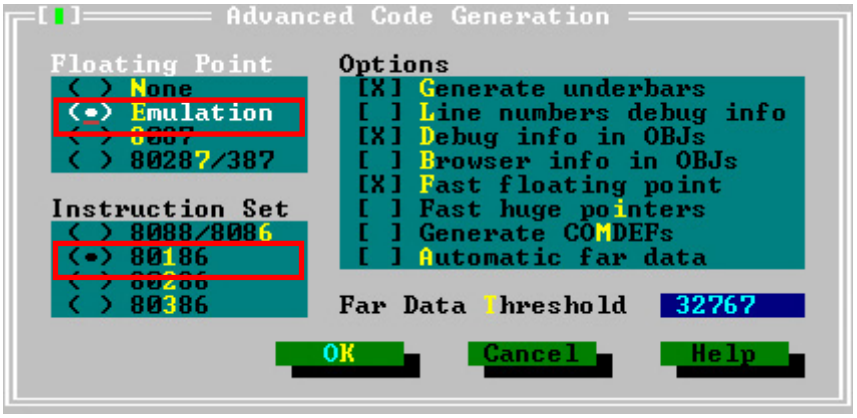


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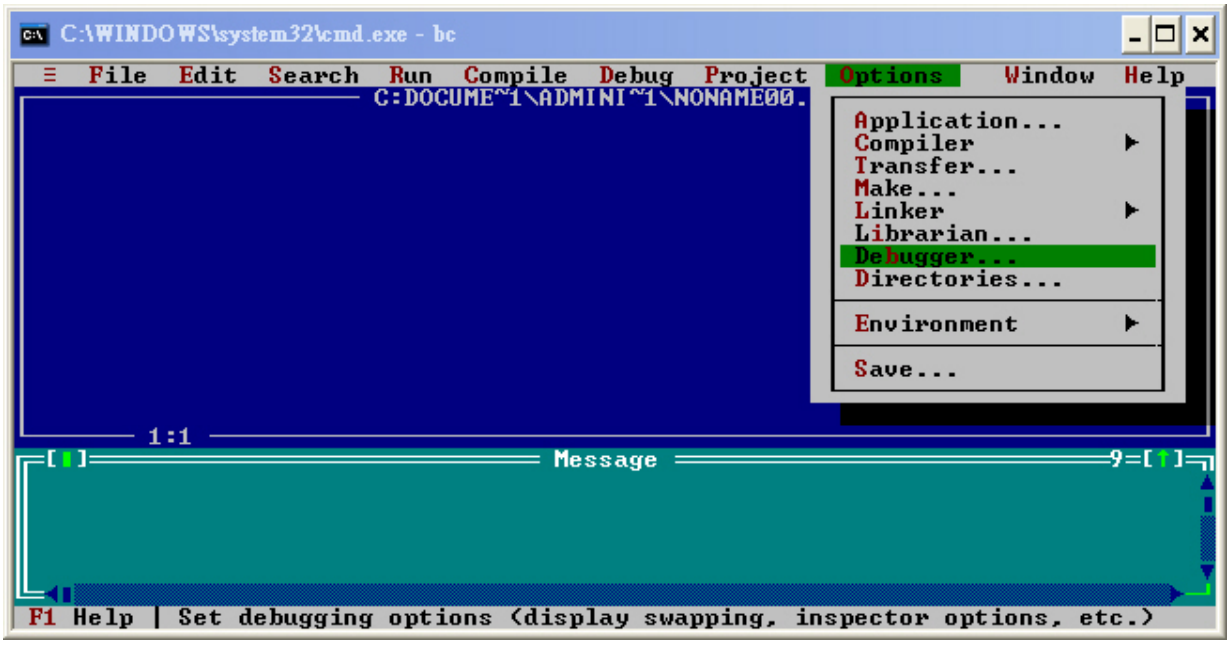
Step 5: Set the Advanced code generation options.



5.1 Set the Floating Point to Emulation and the Instruction Set to 80186.

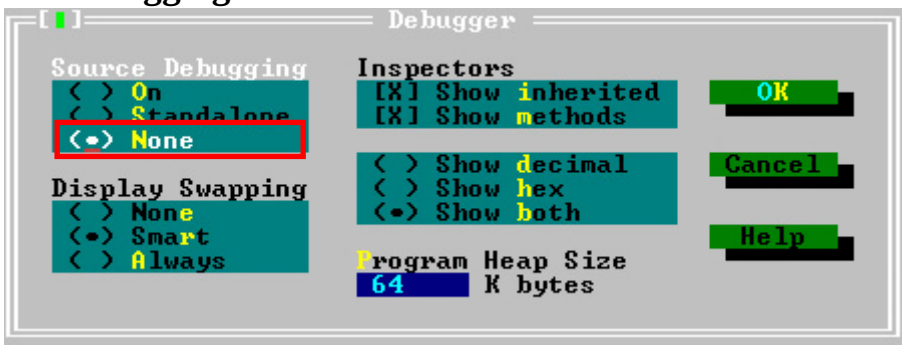


Step 6: Set the Debugger Options.

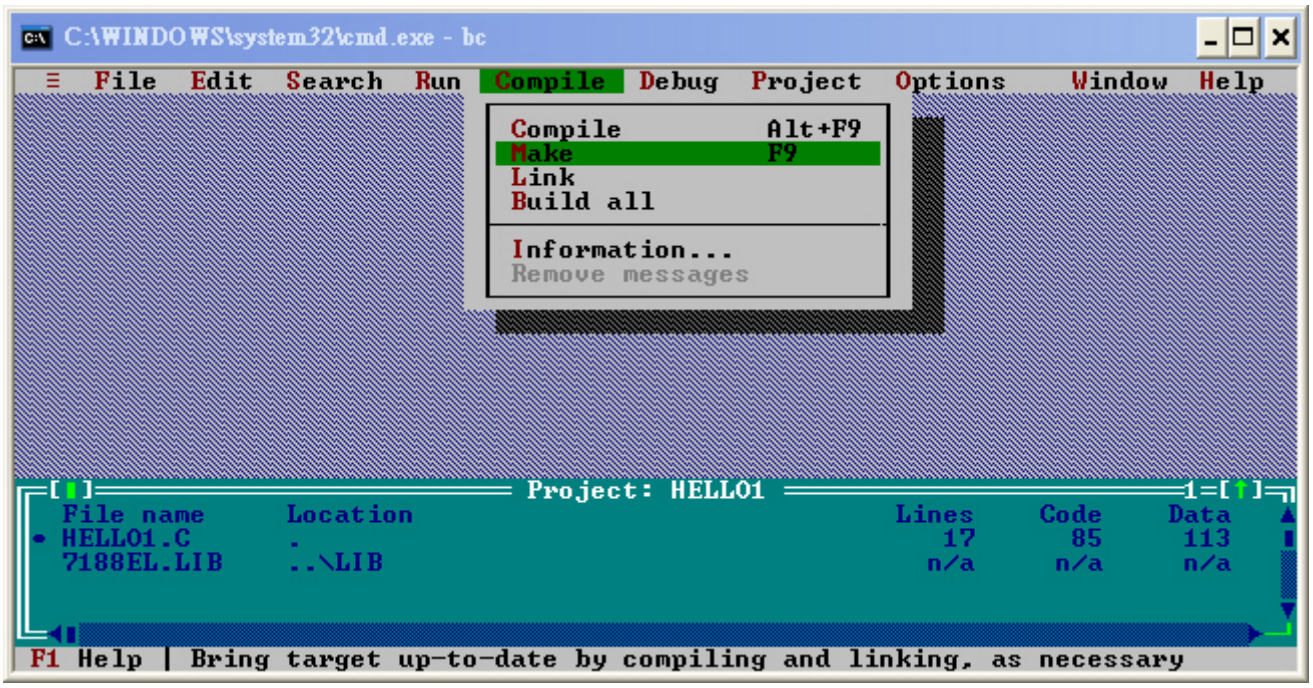


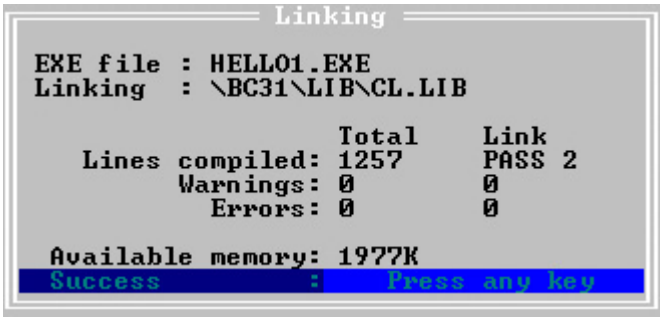
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6.1 Set Source Debugging to None.



Step 7: Make the project.

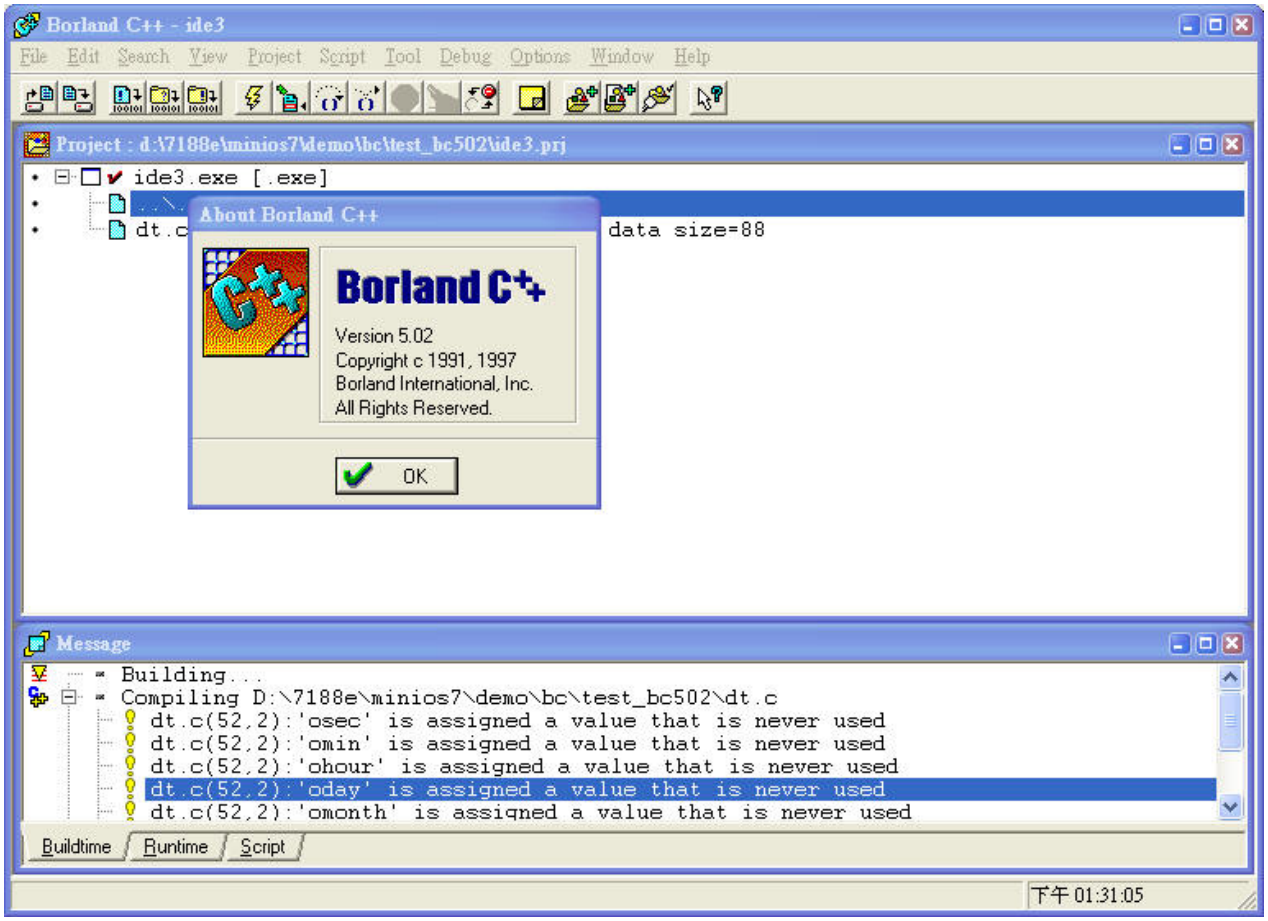




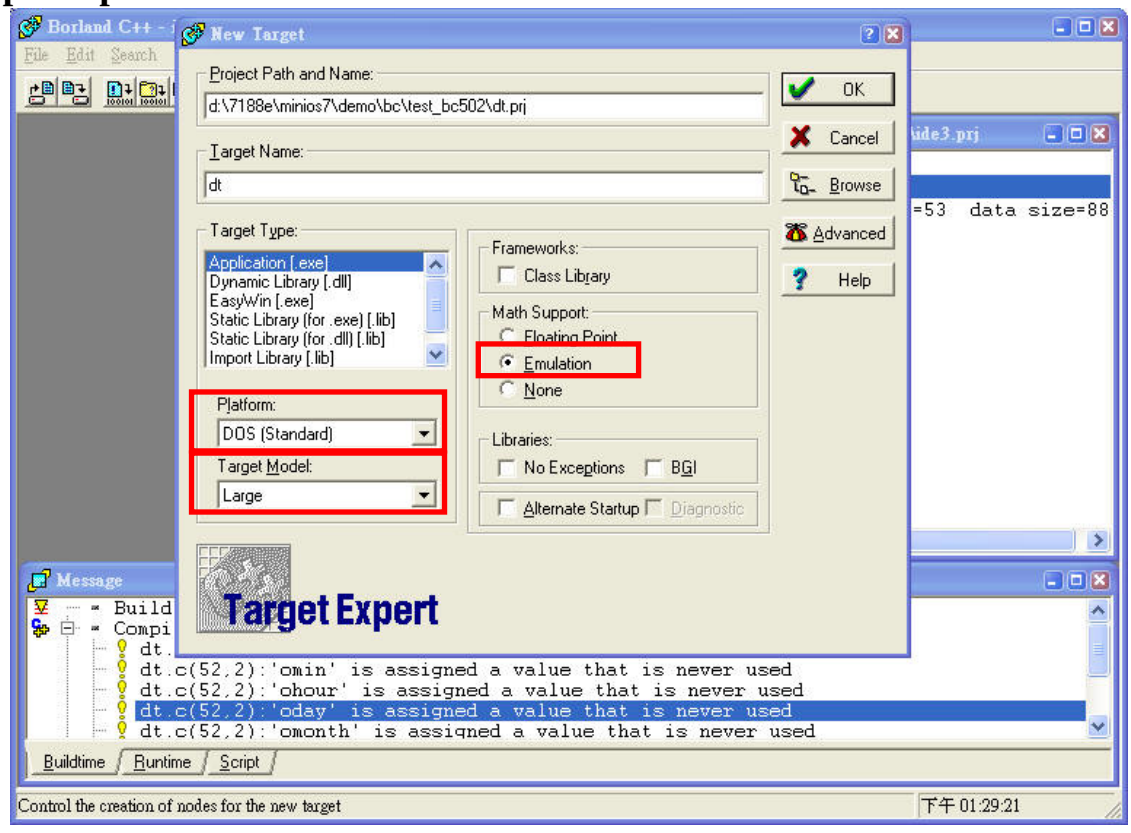
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Compiling using the BC++ 5.02 IDE

Step 1: Run BC.

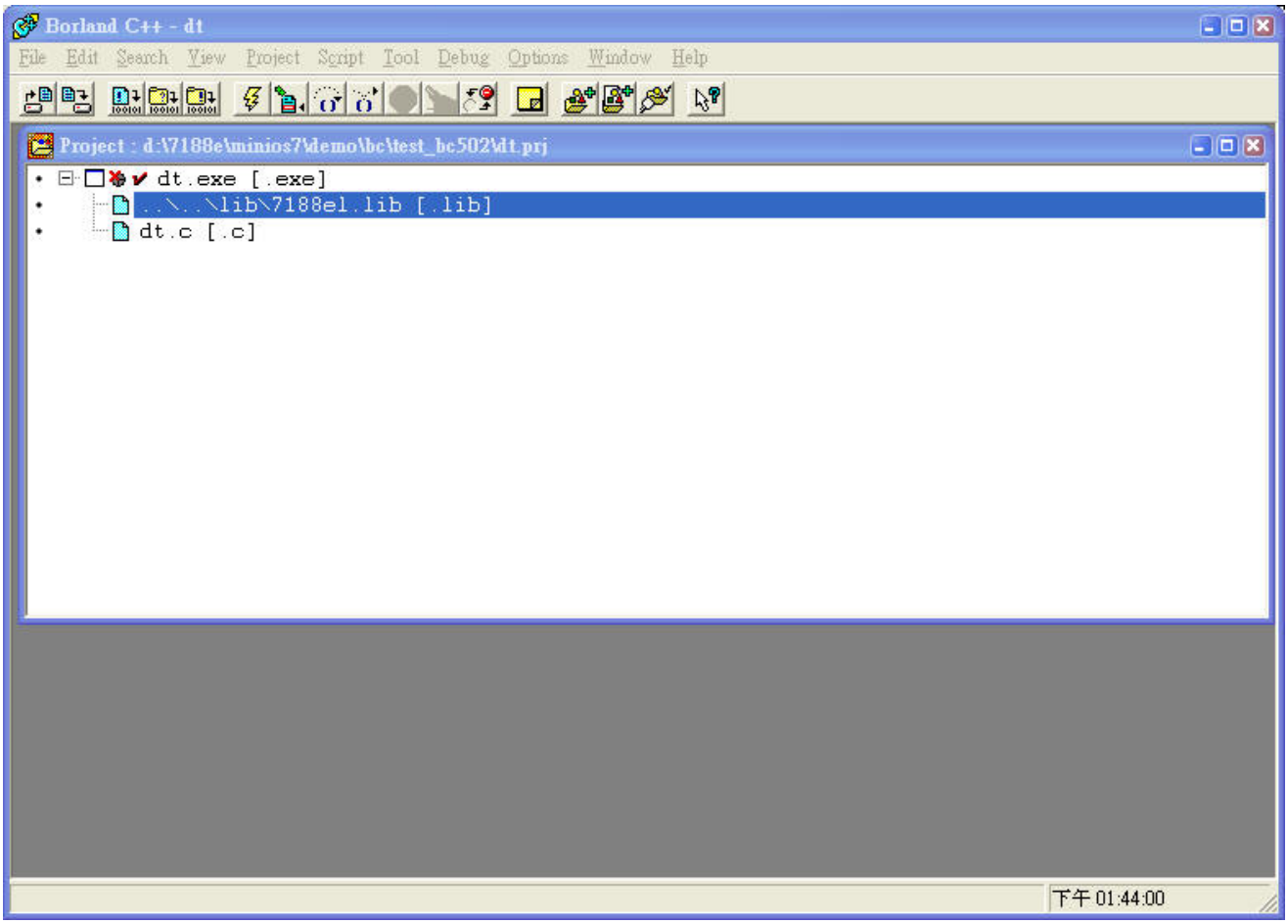


Step 2: Create a new project and set the Target Type, Platform, Target Model and Math Support options.

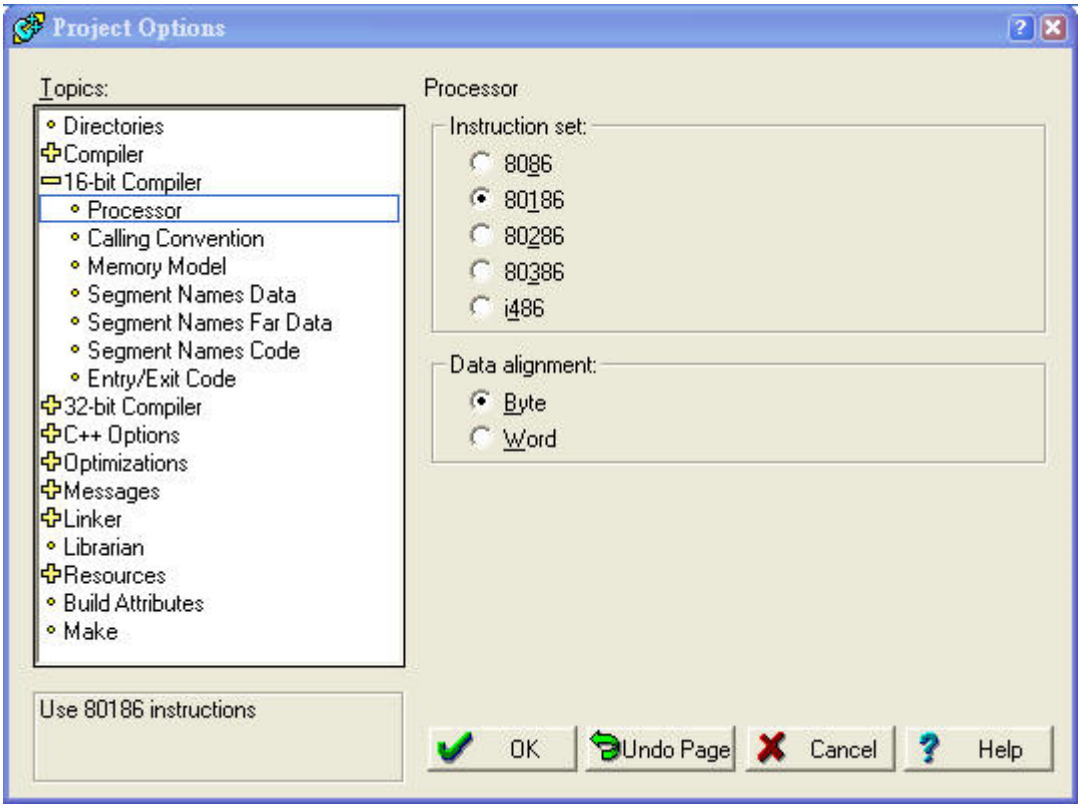


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Step 3: Add all necessary files to the project.

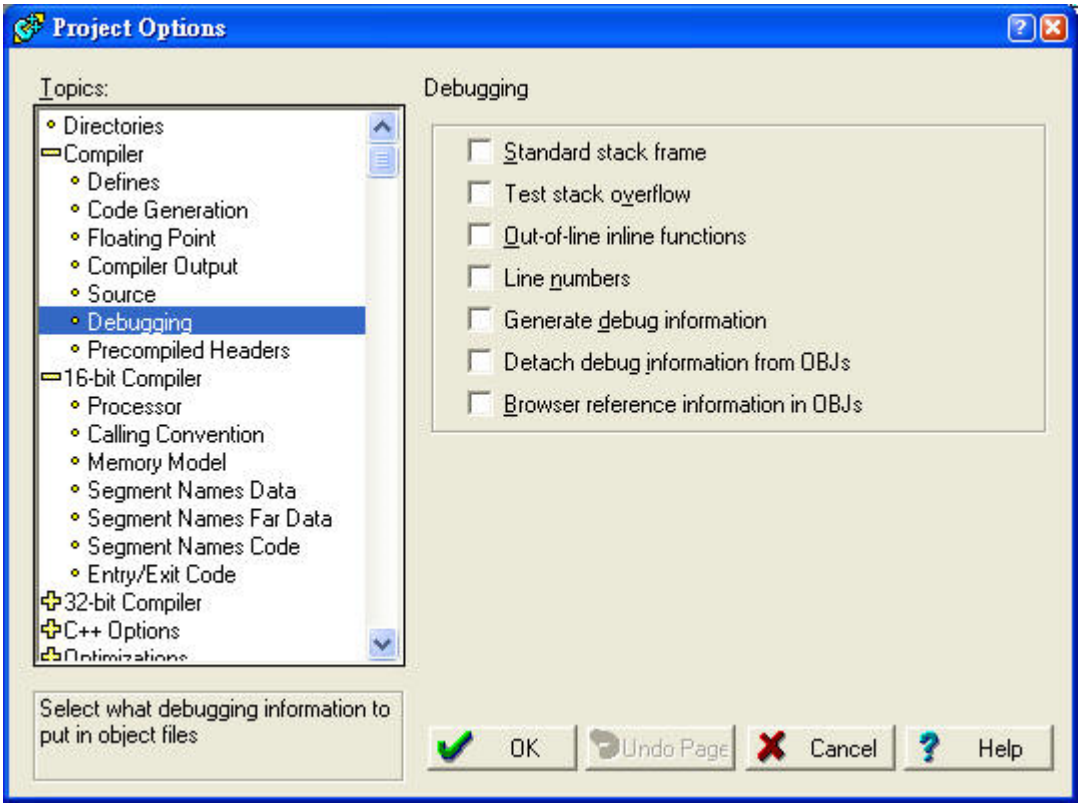


Step 4: Set the Code generation options.

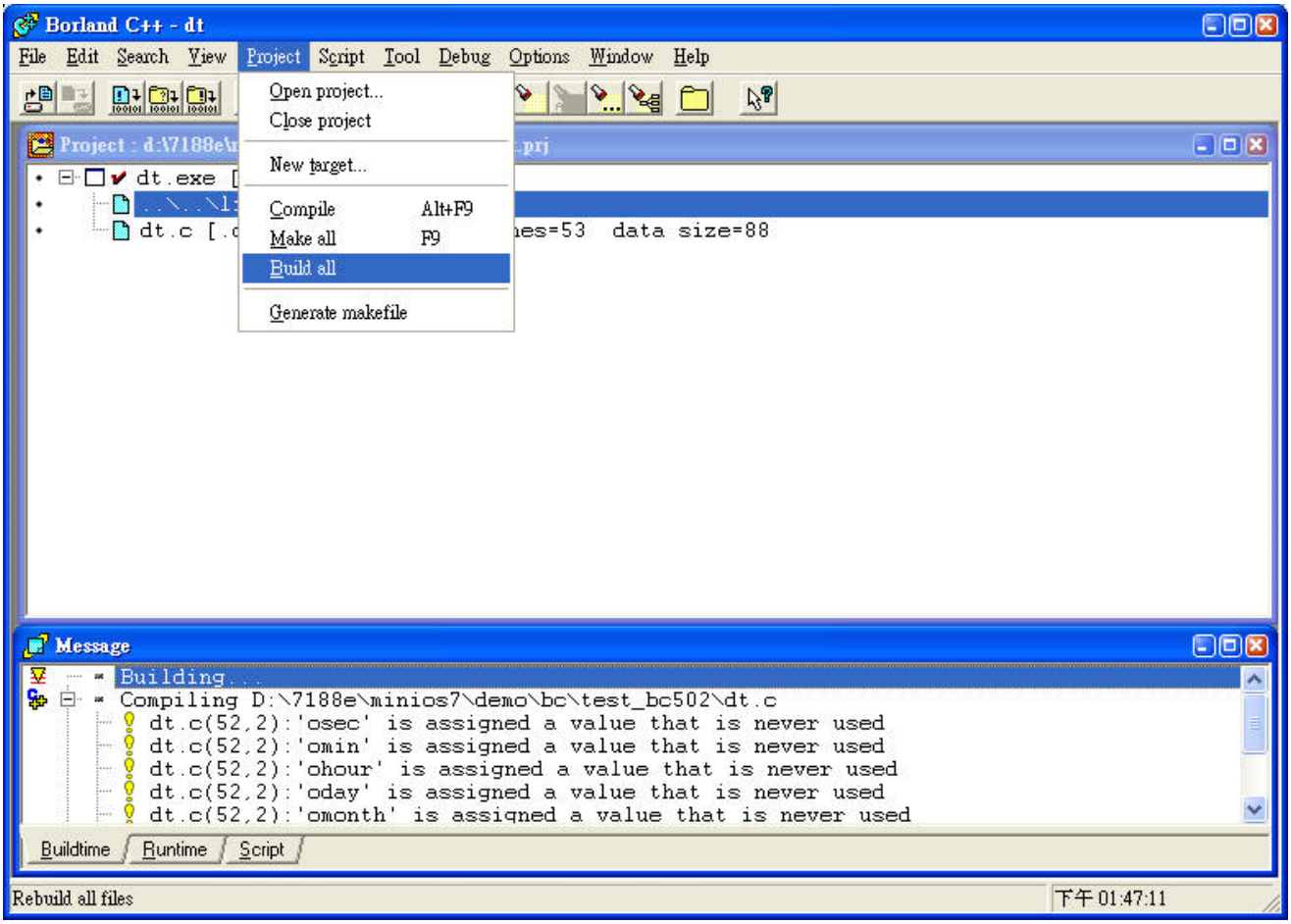


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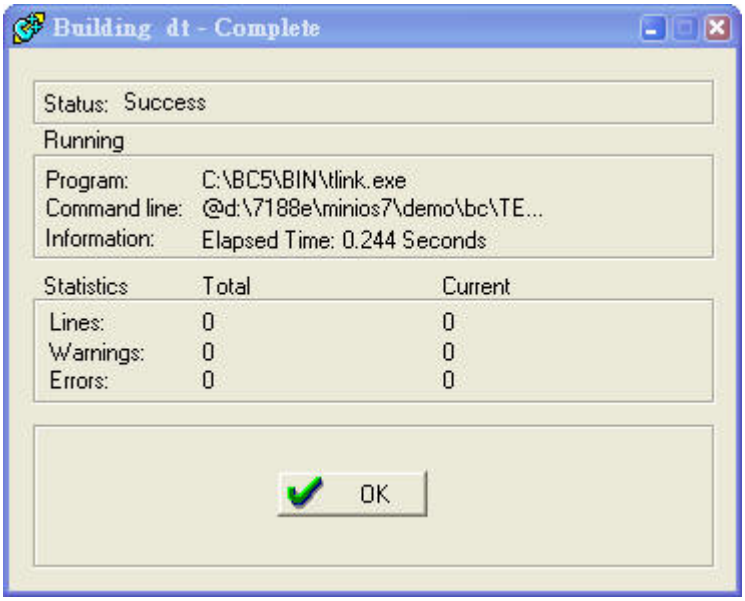
Step 5: Set the Debugger options.

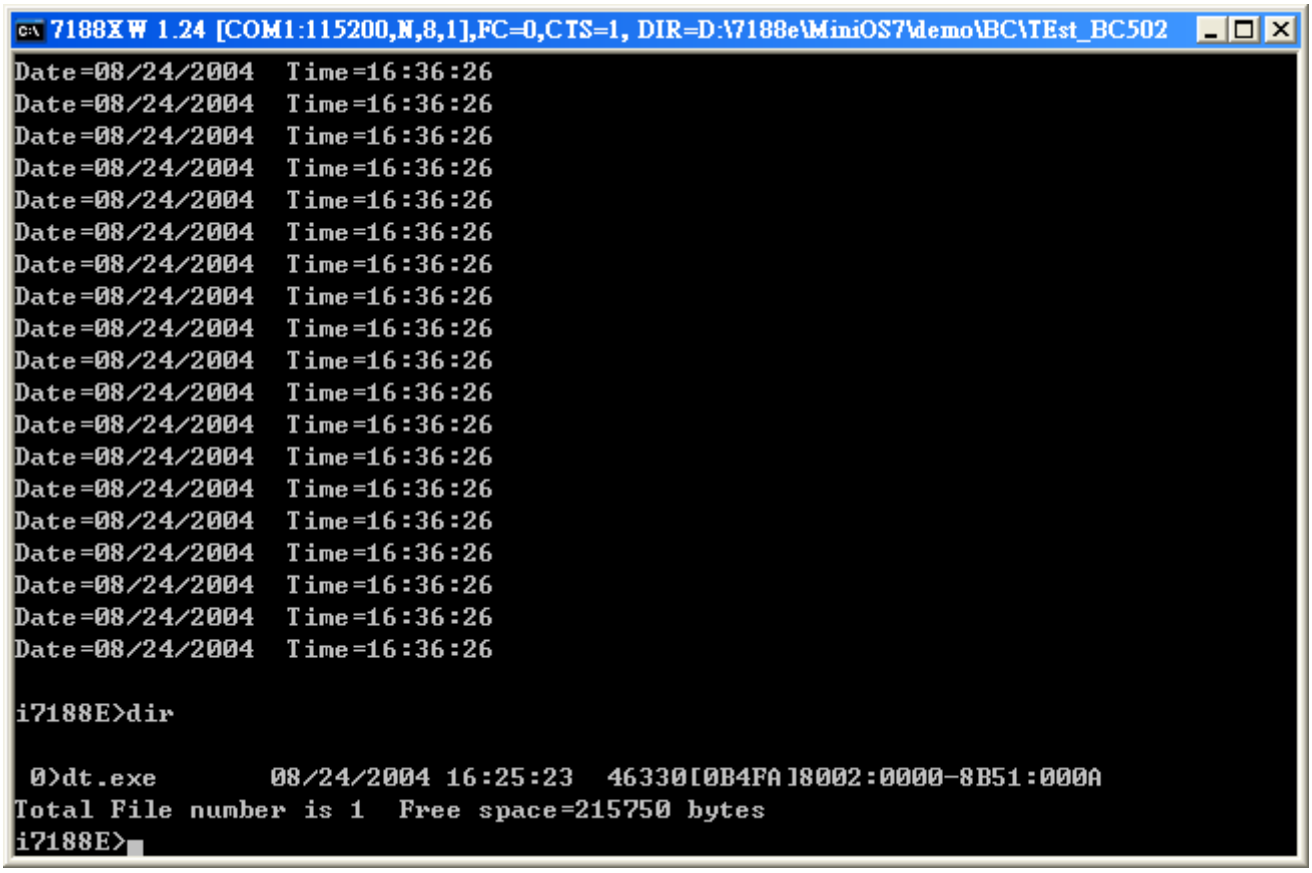


Step 6: Make the project.



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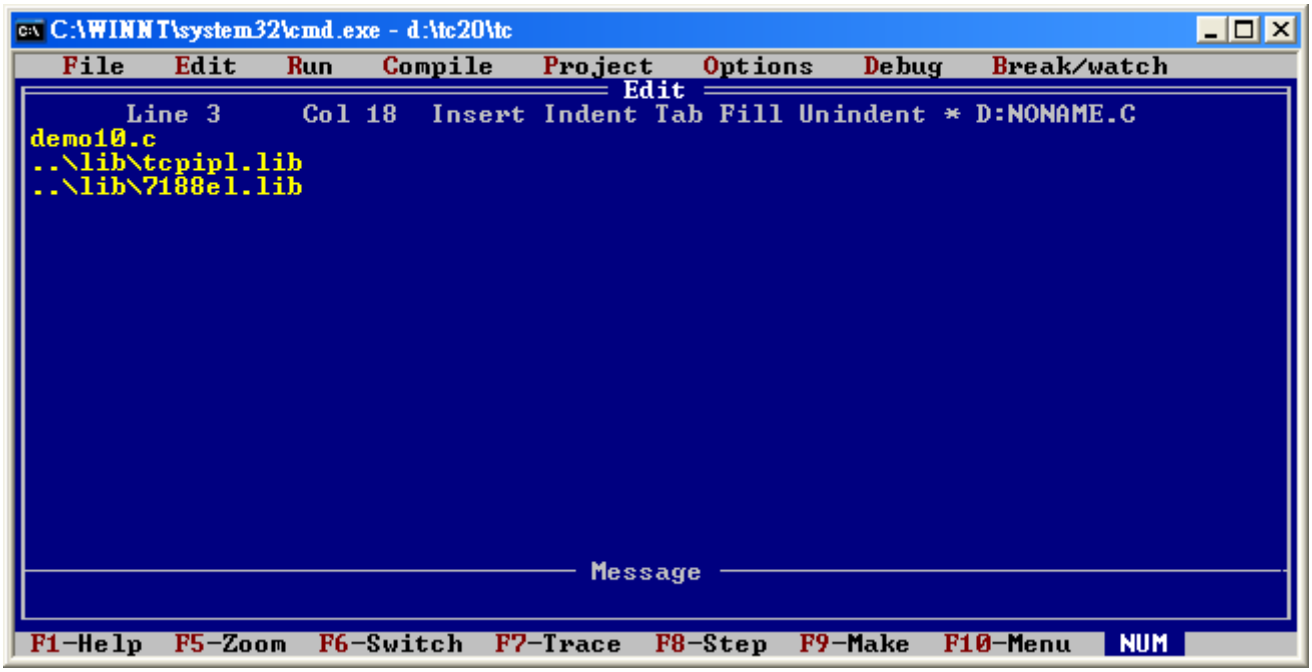


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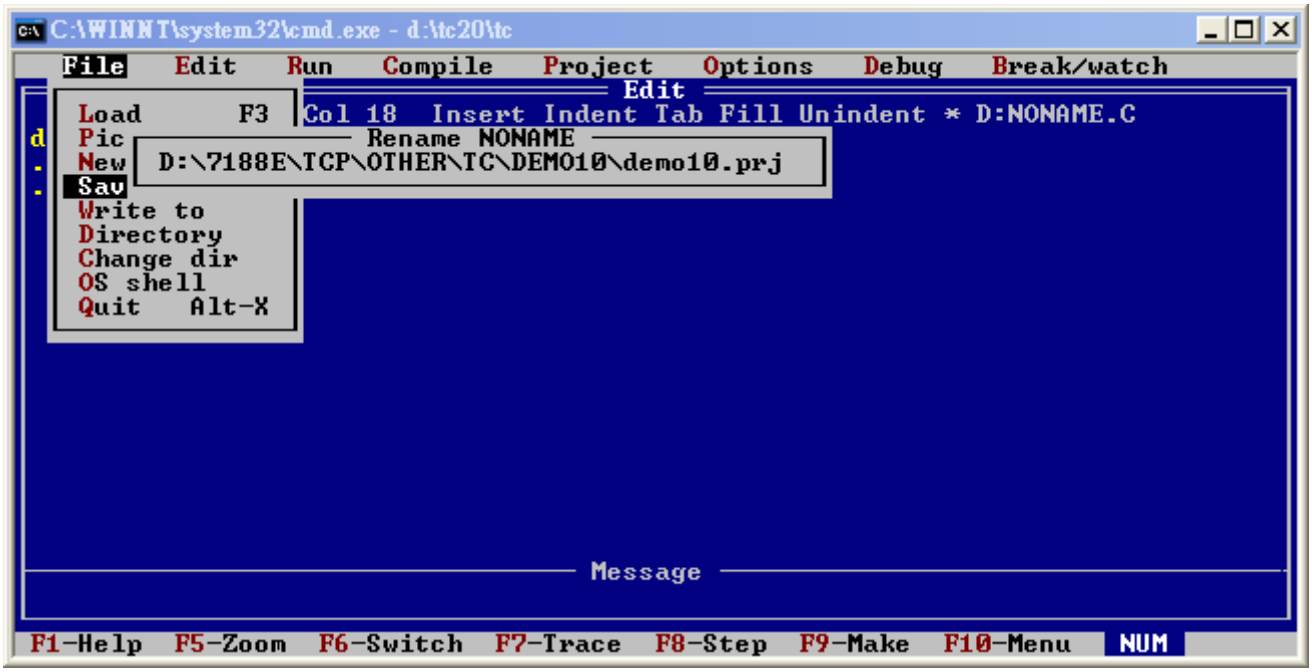
Compiling using the Turbo C 2.01 Compiler

Step 1: Execute TC.EXE to run the TC 2.01 Integrated Environment.

Step 2: Edit the Project file (Add the necessary libraries and files to the project).

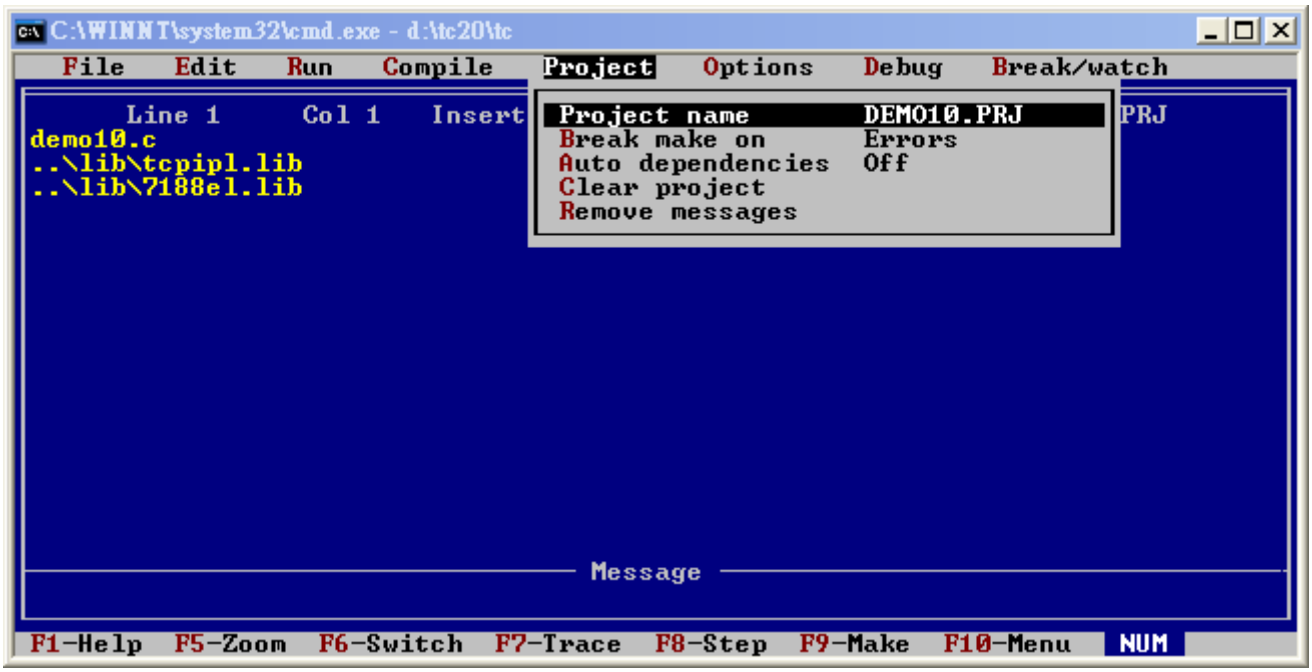


Step 3: Save as a Project file, such as demo10.prj.

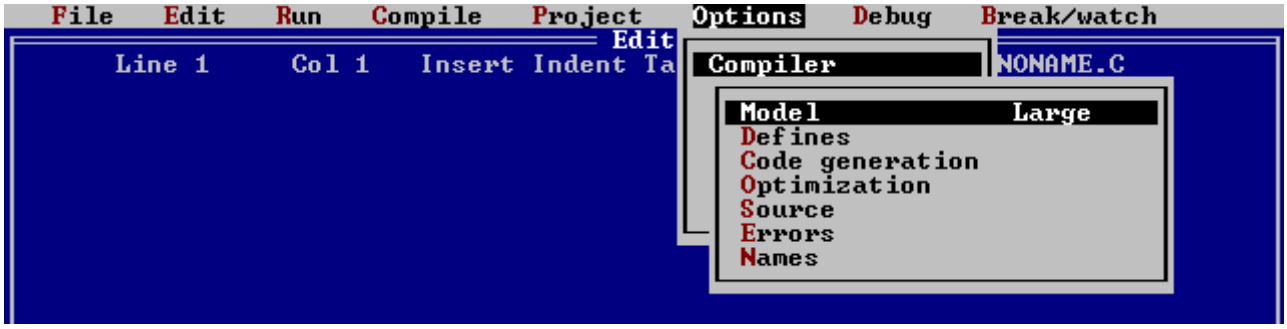


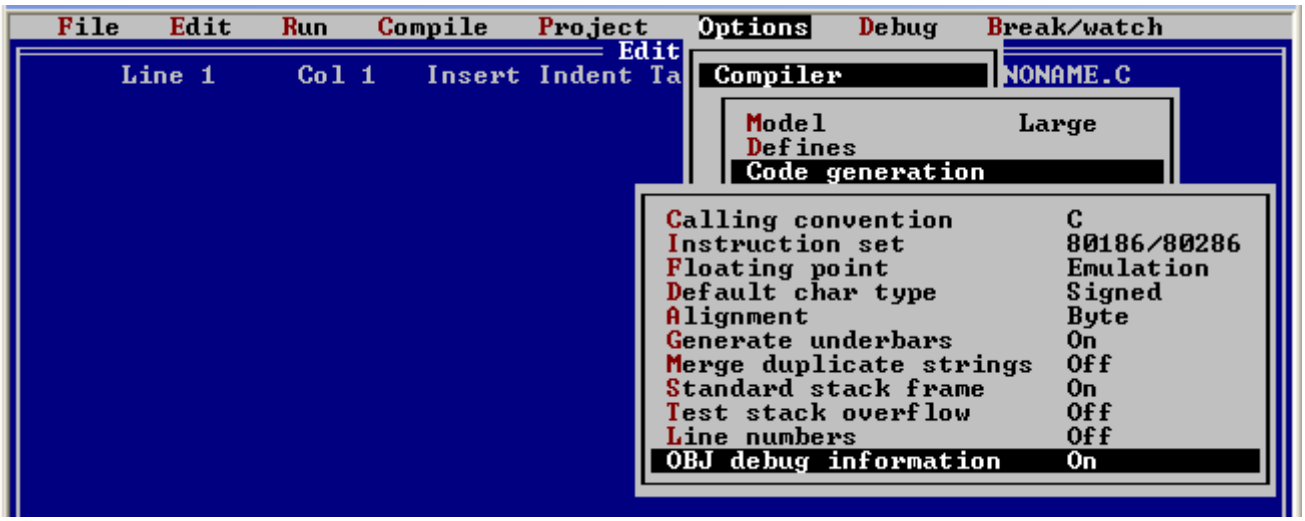
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Step 4: Load the Project from the Project menu



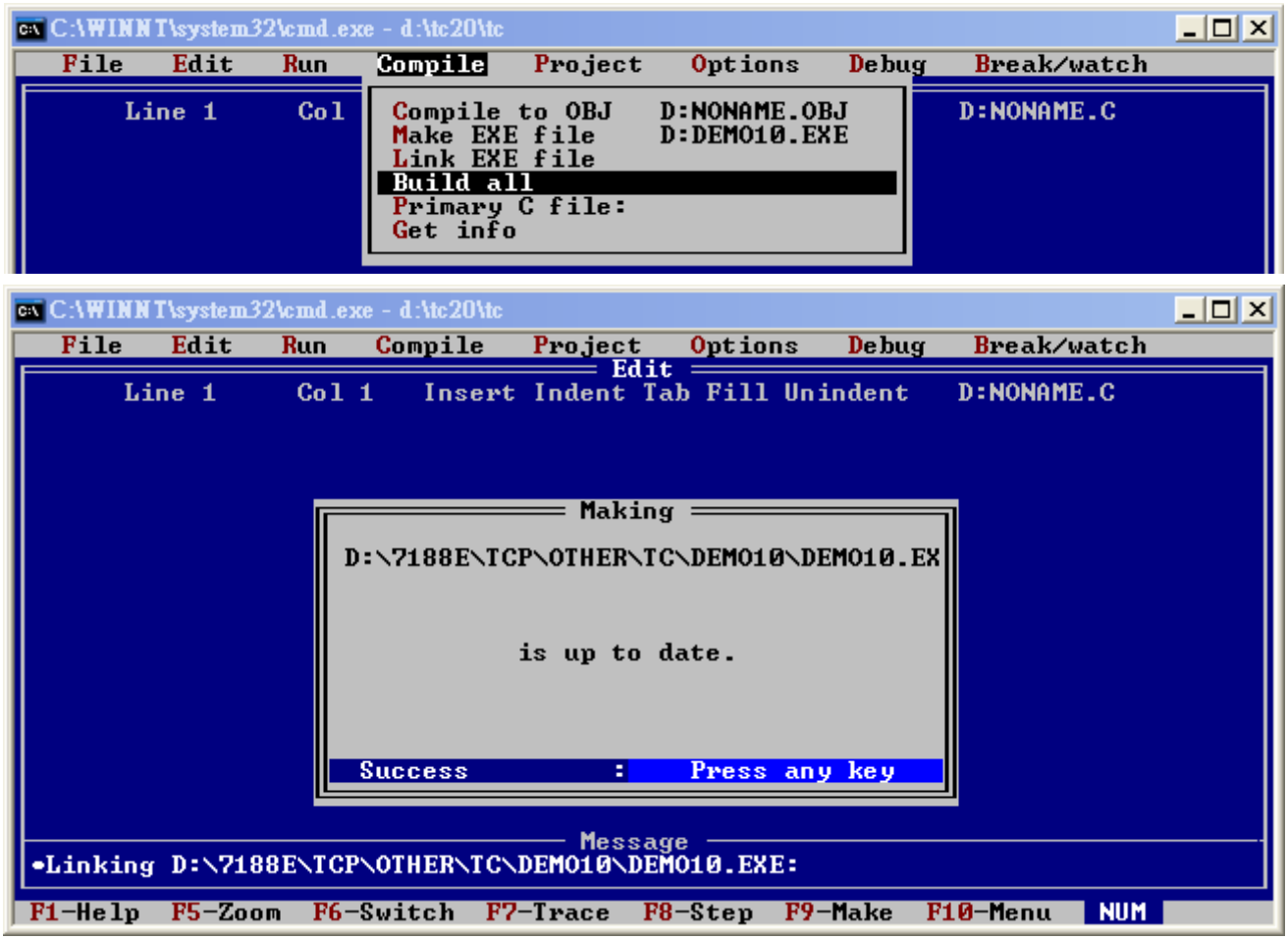
Step 5: Change the Memory model (Small for 8000s.lib/7188es.lib, large for 8000l.lib/7188el.lig) and set the Code Generation to 80186/80286 in the Compiler options.





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Step 6: Build the project.

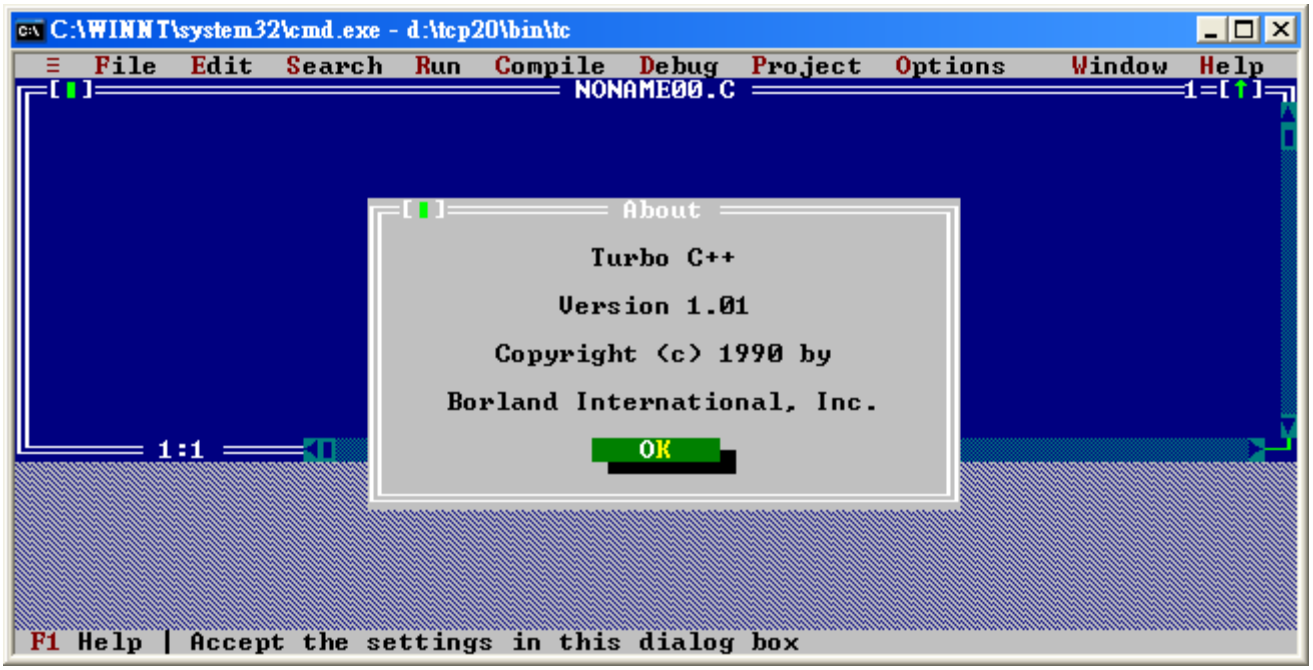


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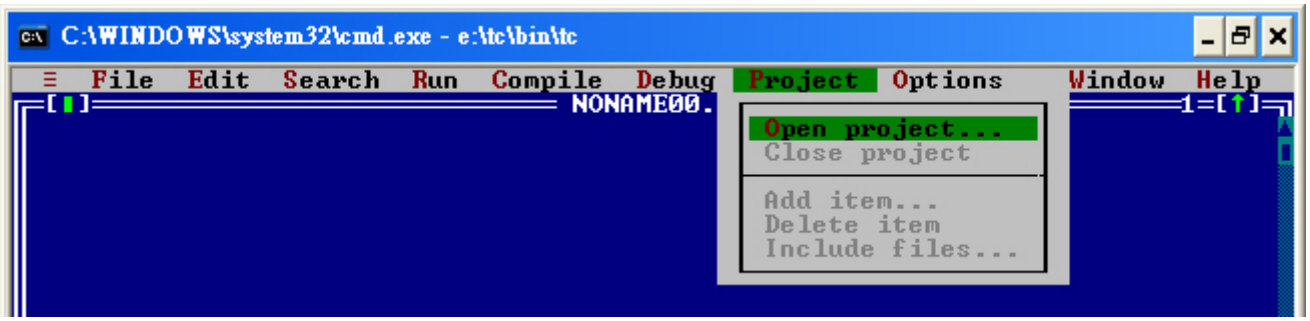
Compiler using the TC++ 1.01 Compiler

***Get free software from http://community.borland.com/museum**

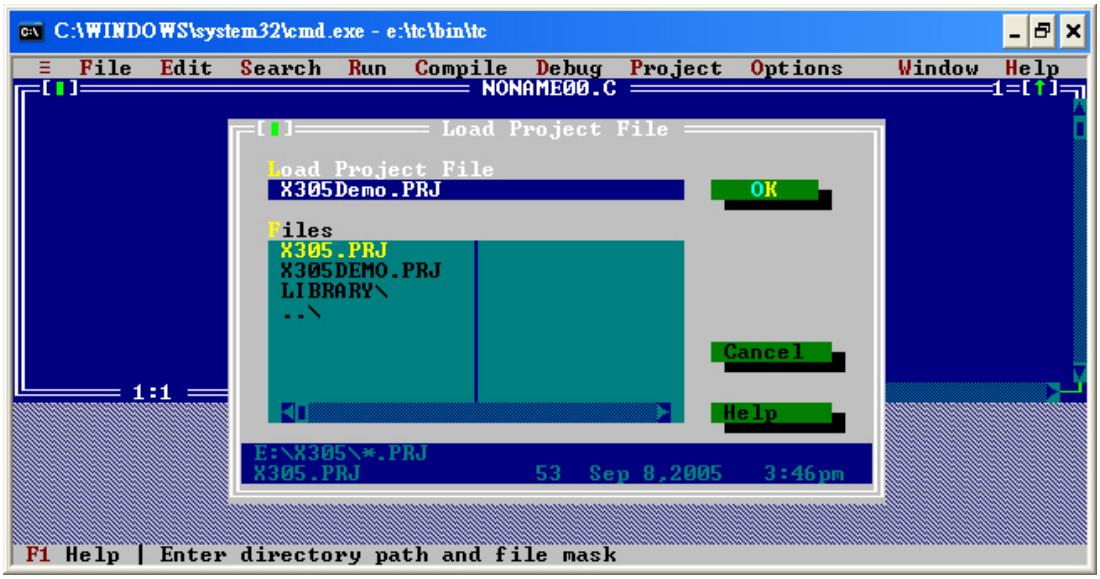
Step 1: Execute \TC\BIN\TC.EXE to run the TC++ version 1.01 Integrated Environment.



Step 2: Create a new project file (*.prj).

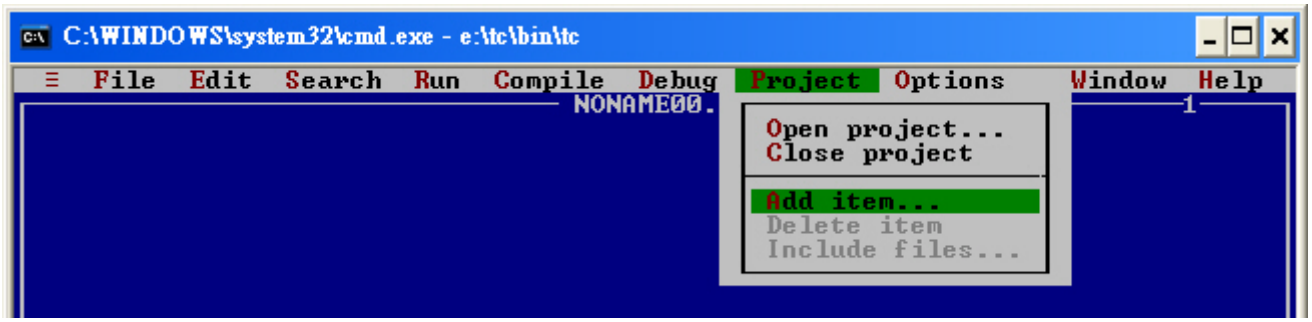


2.1 Type the name of the project file and then click the OK button.

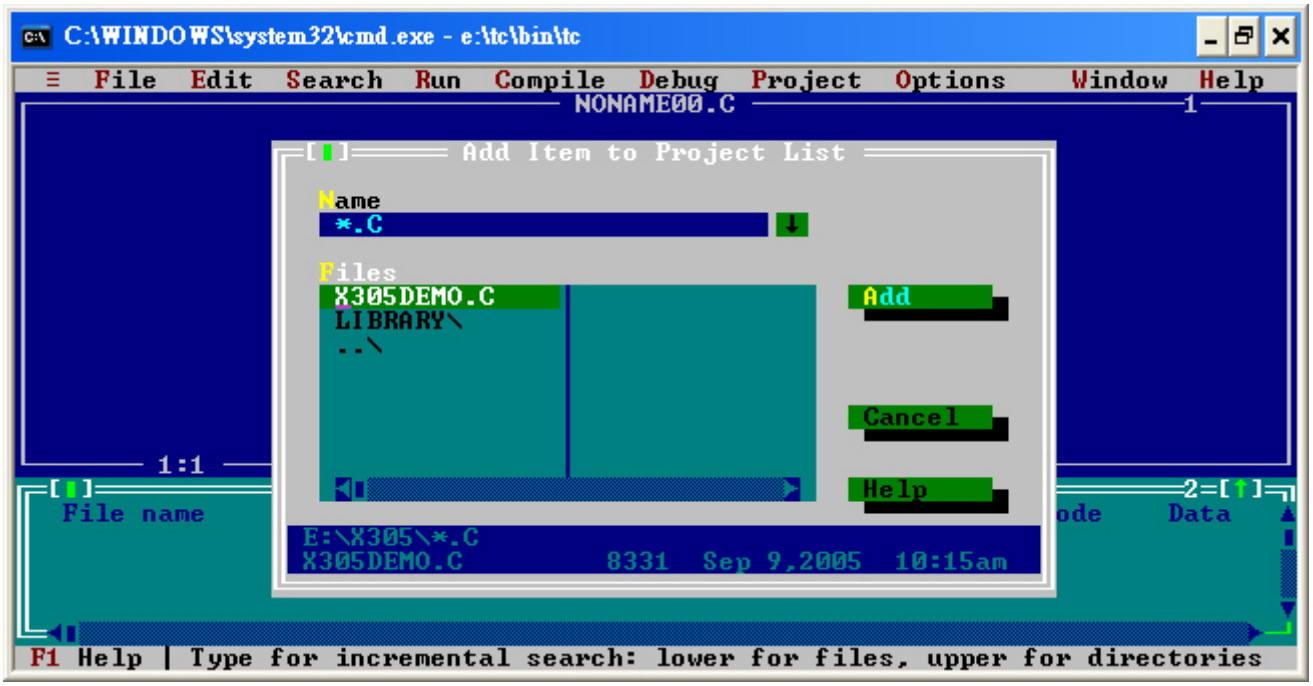


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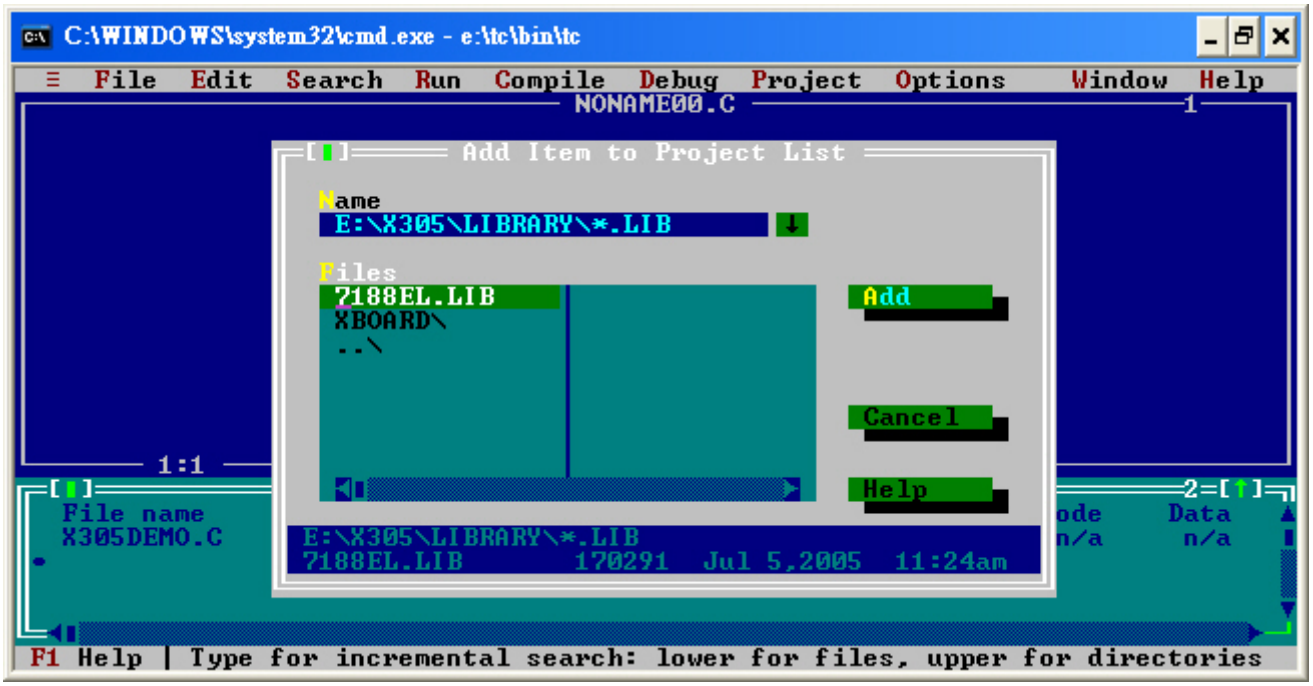
Step 3: Add all necessary files to the project.



3.1 Select the source file and then click the Add button.

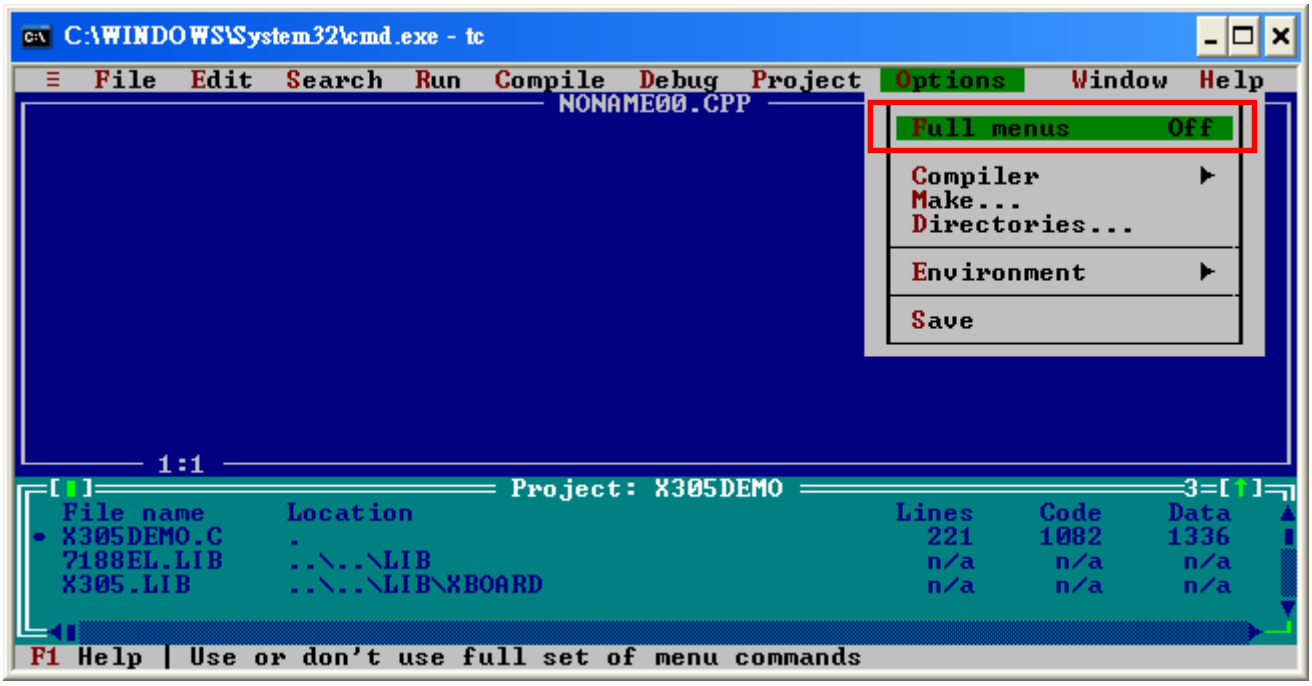


3.2 Select the function library and then click the Add button.

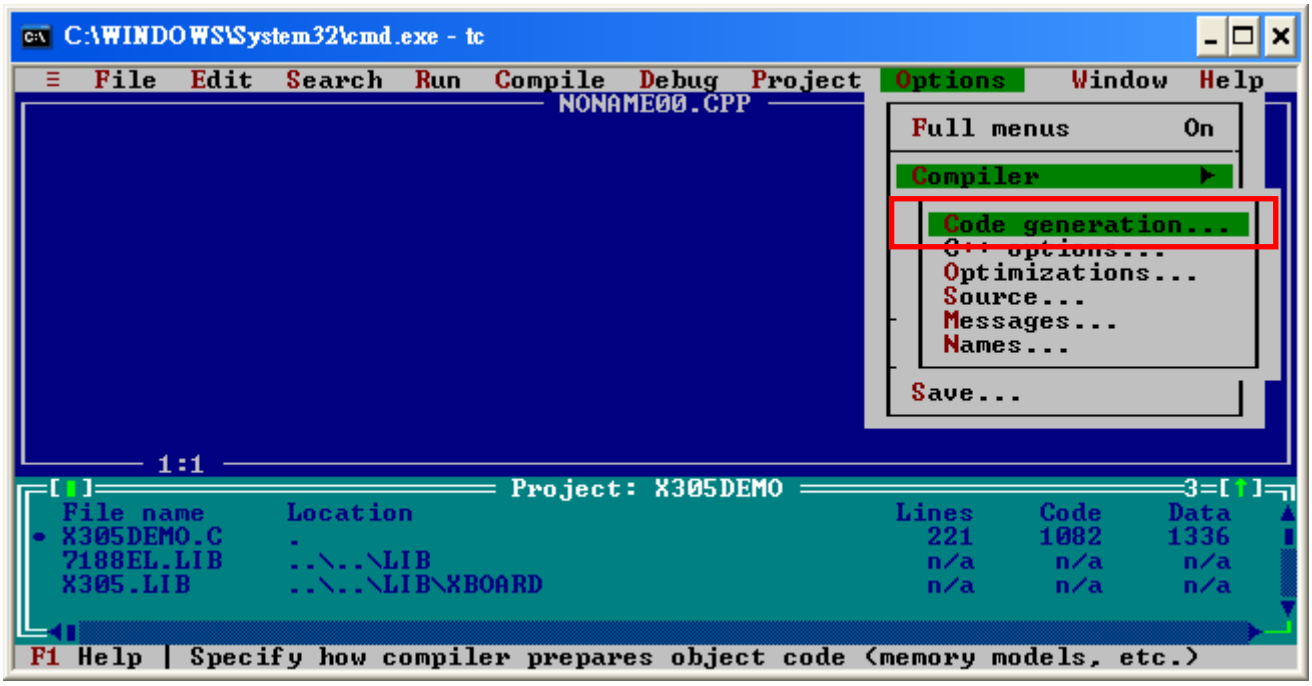


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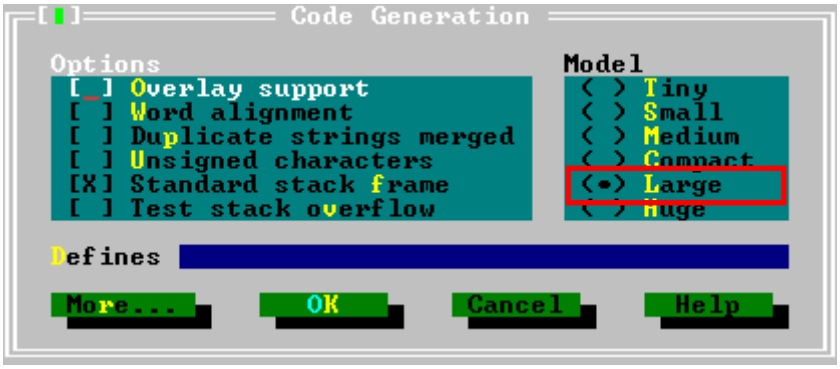
Step 4: Show full menus.



Step 5: Set Code generation options.

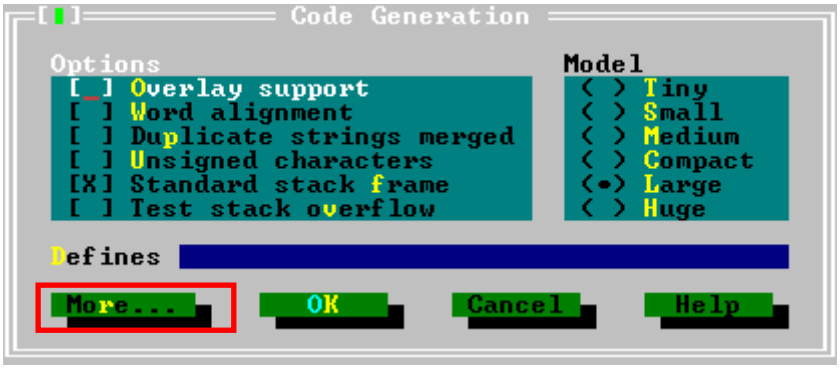


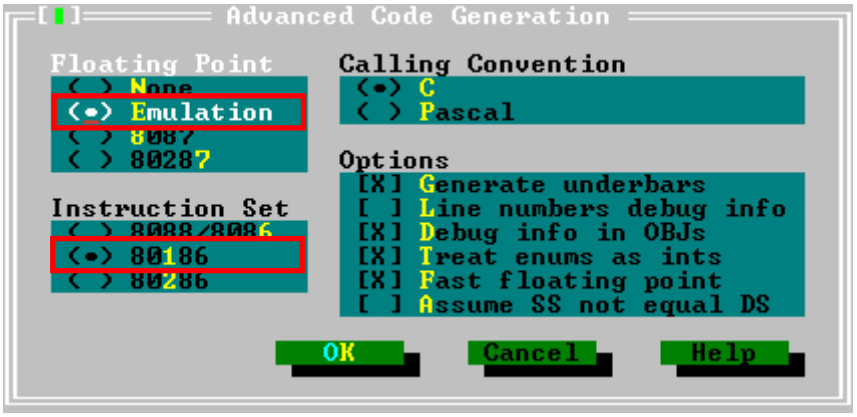
5.1 Change the Memory model (Small for 8000s.lib/7188es.lib, large for 8000l.lib/7188el.lib).



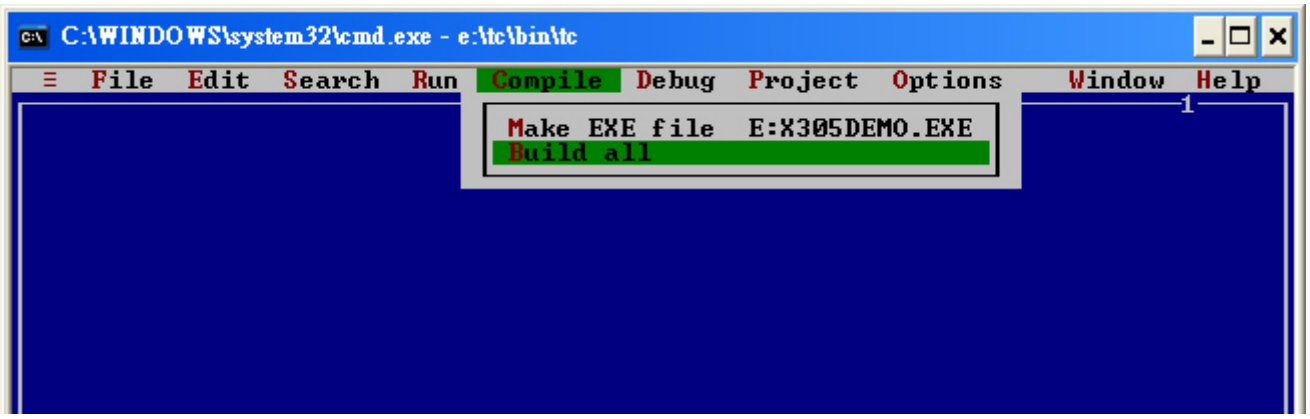
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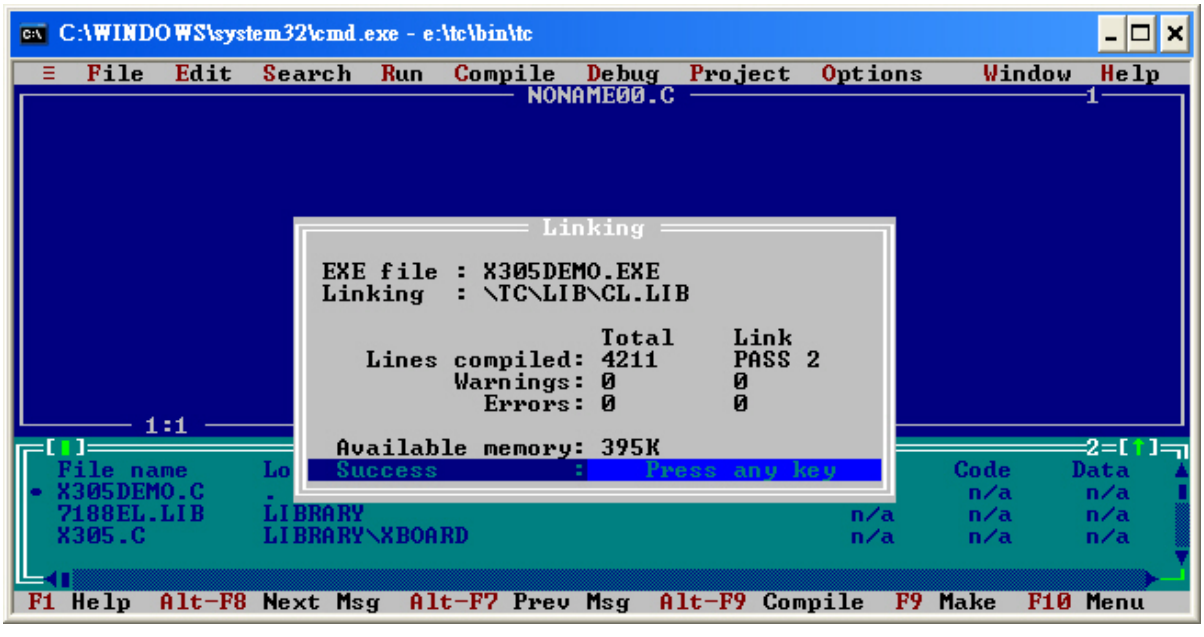
4.2 Set the Floating Point to Emulation and the Instruction Set to 80186.





Step 5: Make the project.





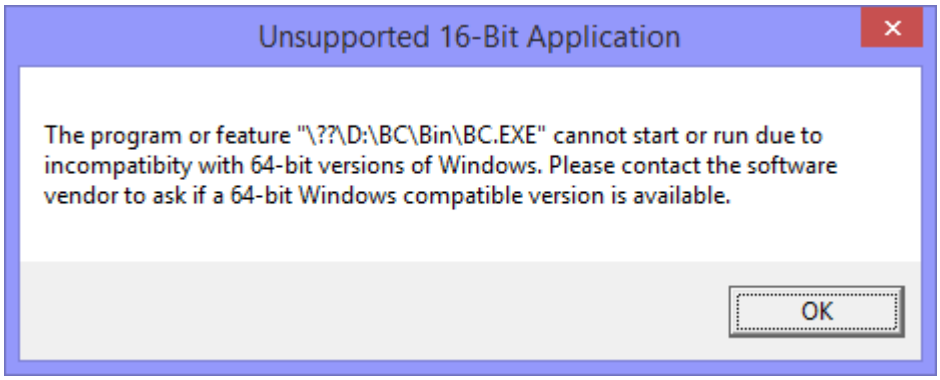
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Compiling on 64-bit platform like Windows 7 or Windows 8 / 8.1

Preface:

If we try to use 16-bit compiler like BC3.1 or TC++3.0 to build MiniOS7 project on Windows 64-bit platform like Windows 7 or Windows 8, it will prompt up an error message to show compatibility problem for 64-bit platform.

"**Application can't run on your PC. Contact with your software publisher**" Or like below snap shot.



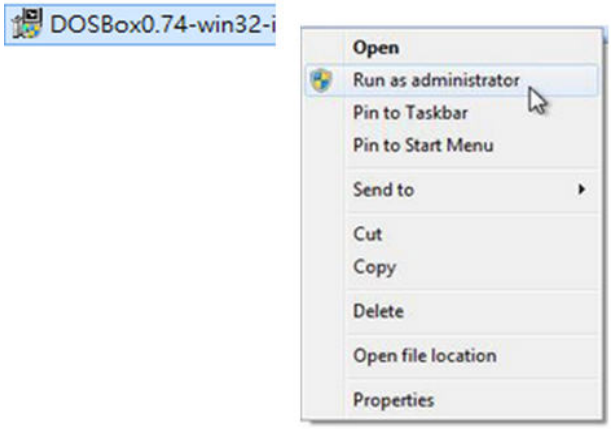
Please follow below steps to solve the problem.

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Step 1: download and install DosBox for Windows. You can easily install the 32 bit version on a 64-bit OS. The download page is here:

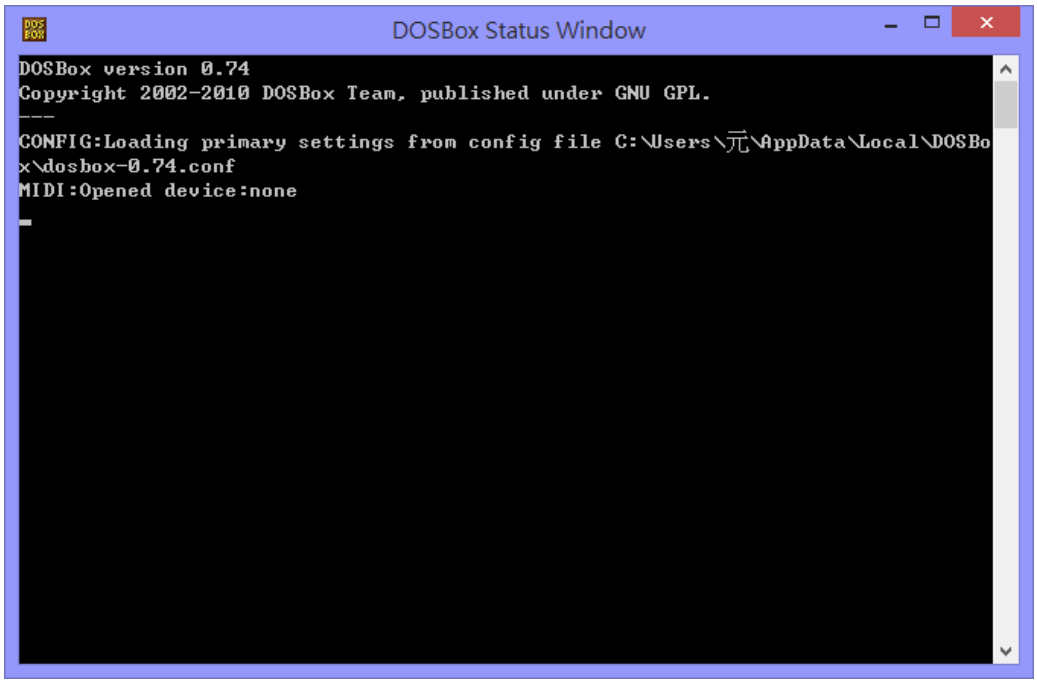
http://sourceforge.net/projects/dosbox/files/dosbox/0.74/DOSBox0.74-win32-installer.exe/download

Note: Strongly recommend installing DOSBox as administrator.



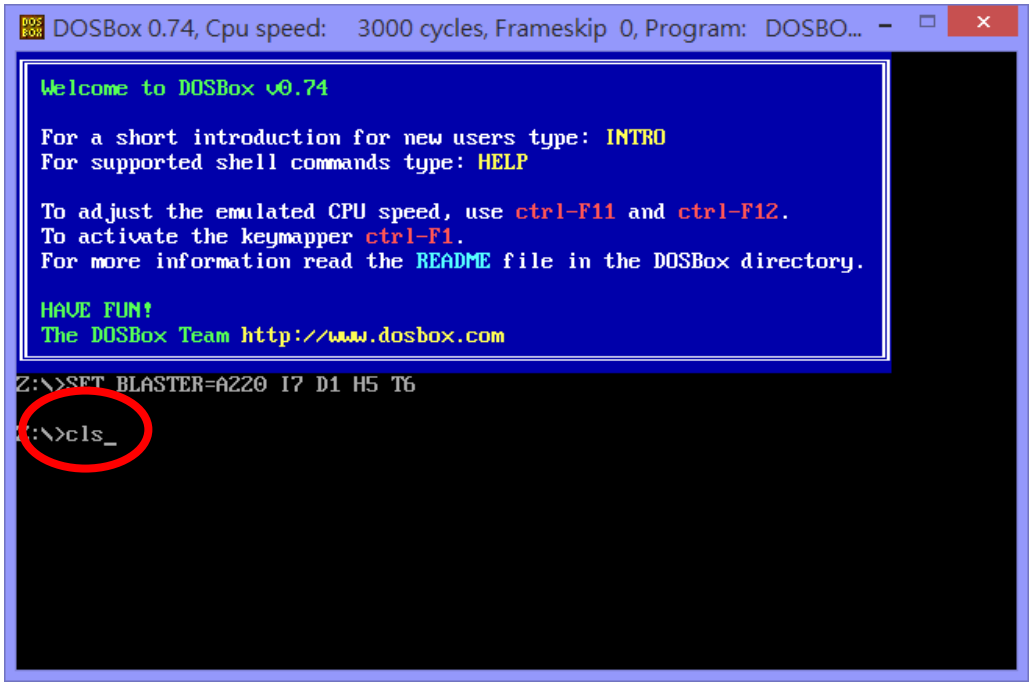
Step 2: Start up the DOSBox, click DOSBox 

, it will bring out two Windows forms, one is DOSBox Status Window and DOSBox Console as below.



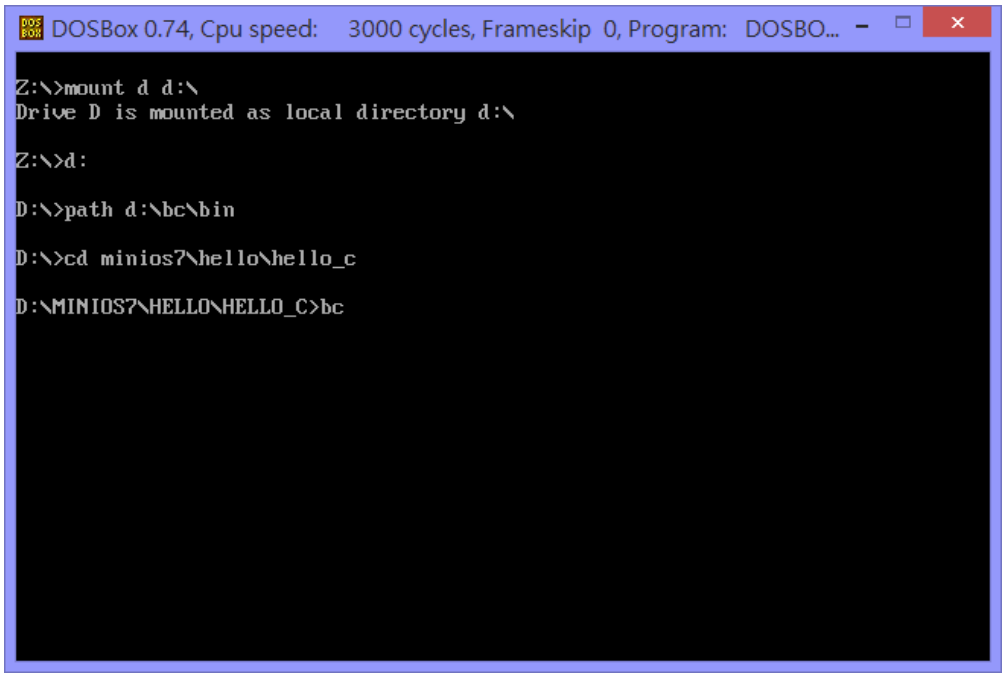
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First use command “CLS” or “cls” to clear the screen.



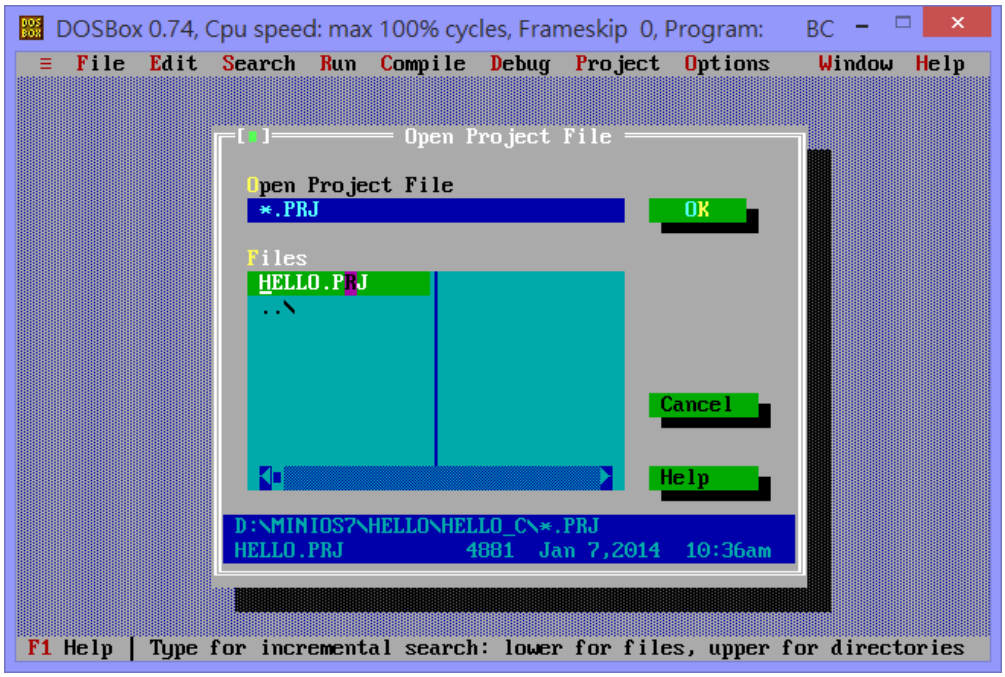
Step 3: Configure the DOSBox Environments settings.

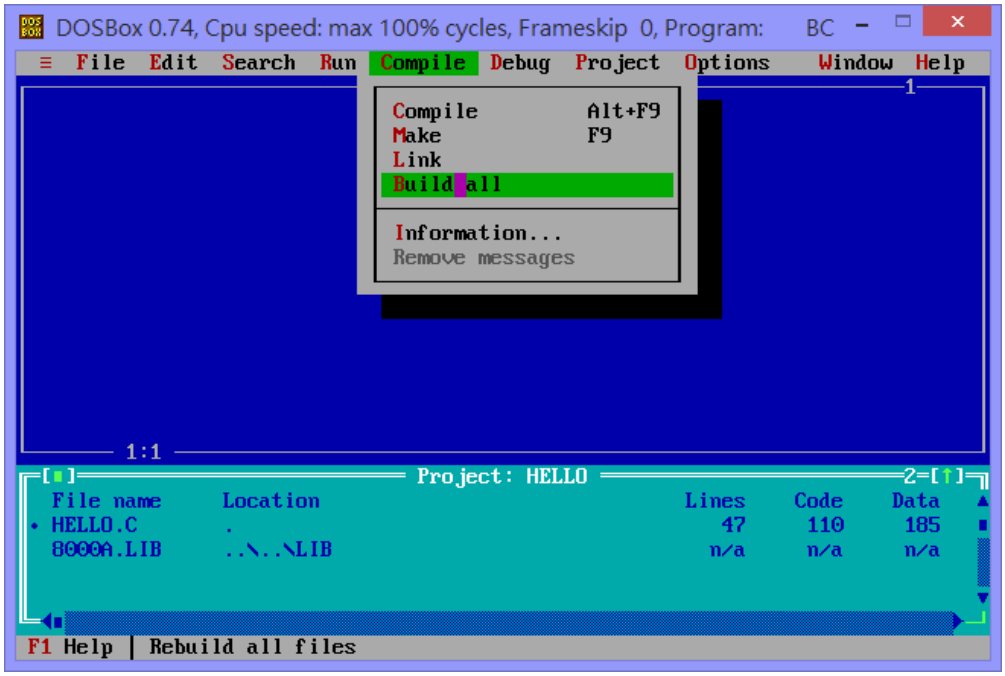
1. Make sure the demo file path, for example D:\MiniOS7\hello\hello_c
2. Make sure the BC\Bin file path, for example D:\BC\Bin
3. Use mount command to mount the disk driver for example “mount d d:\”
4. After mount disk driver D, then type “D:” to change “Z:\>” to “D:\>”.
5. Set Path to BC\Bin for example “path d:\bc\bin”
6. Change directory to demo run “bc”



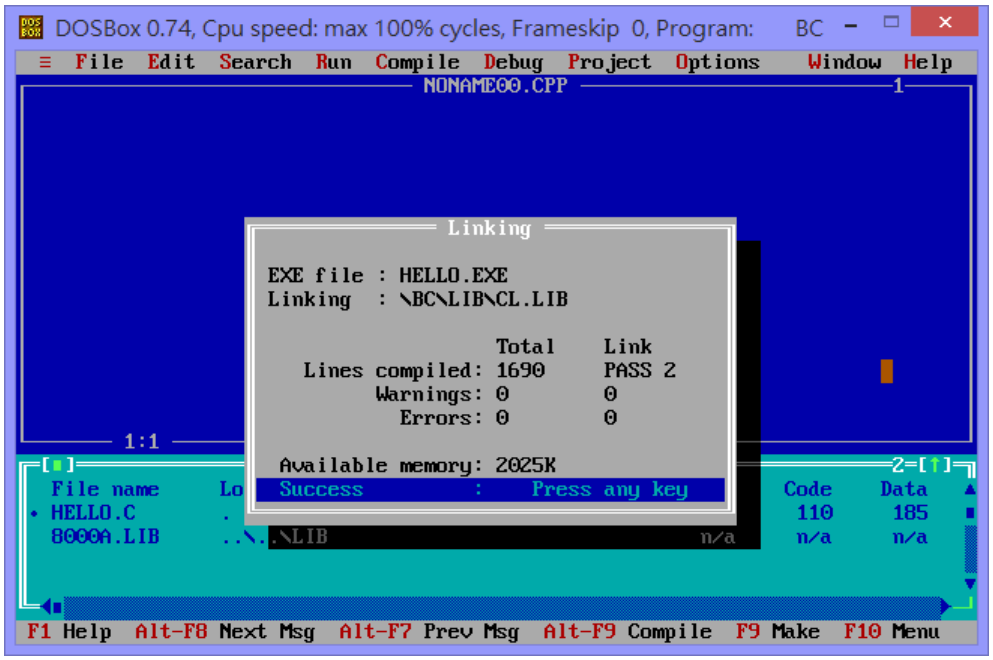
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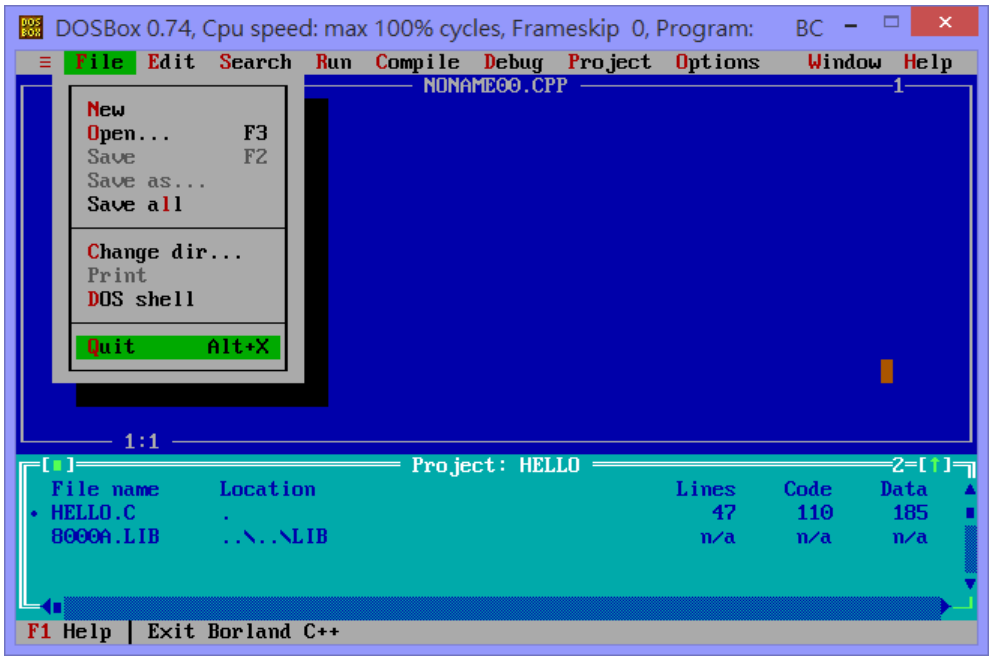
Step 4: Press “Project” to open project➔ Press “Compile” to build the project.





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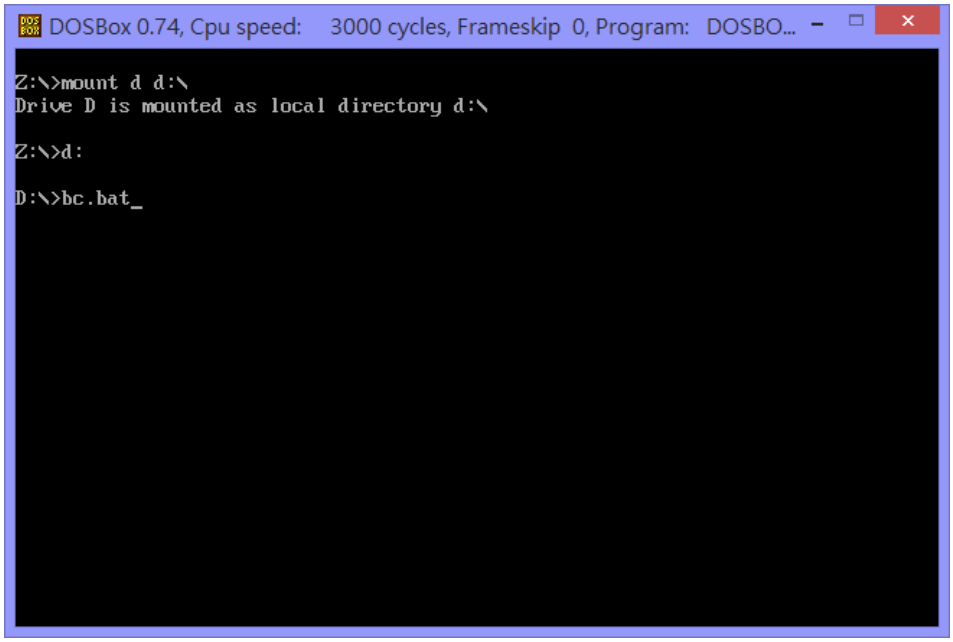
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Tips for using batch file:

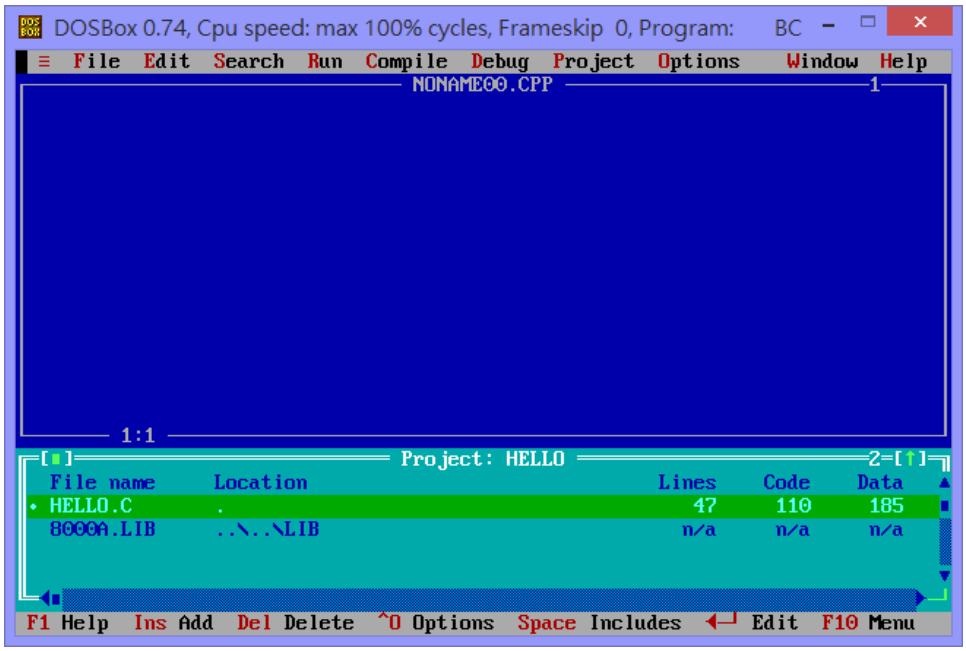
It is a little troublesome to set the path and launch the BC demo project, We can make a batch file as below for demo program,

```
path d:\bc\bin
cd minios7\hello\hello_c
bc
```

and save this batch file to path “D:\” , when Driver D is mounted as local directory and change to d: ,



After execute the bc.bat file, the demo project will be launched successfully.

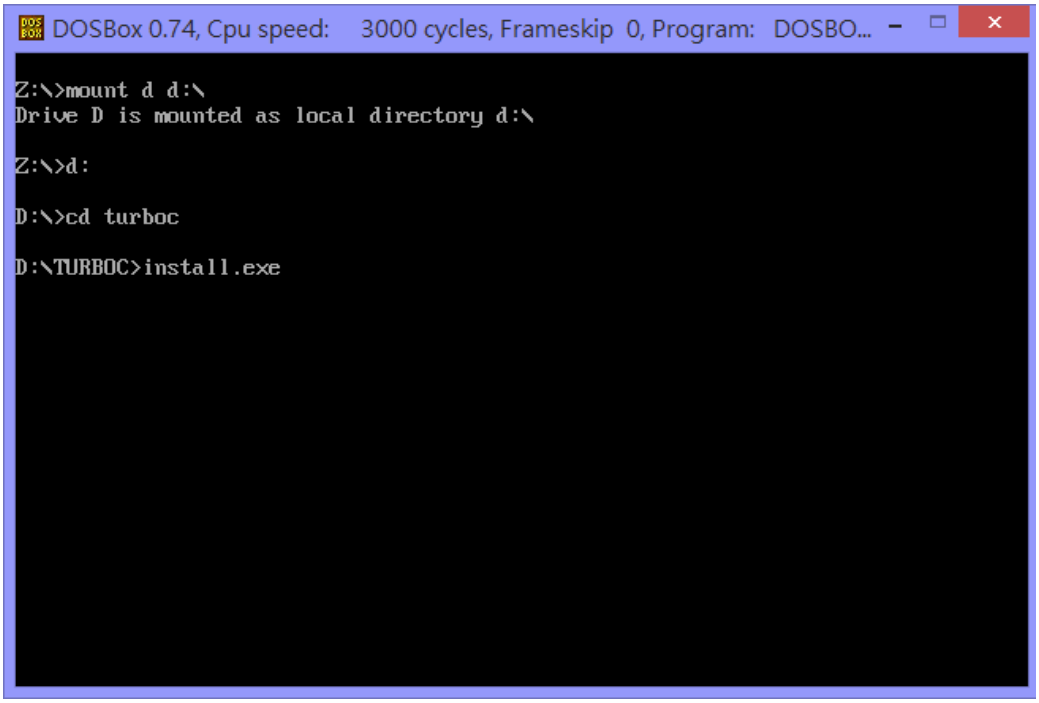


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If BC3.1 compiler is not available, it can download Free TurboC++3.0 from website
Download Free **turboc.zip** from following link
http://www.bestfreewaredownload.com/download/t-free-turbo-c--freeware-flggsdpz.html

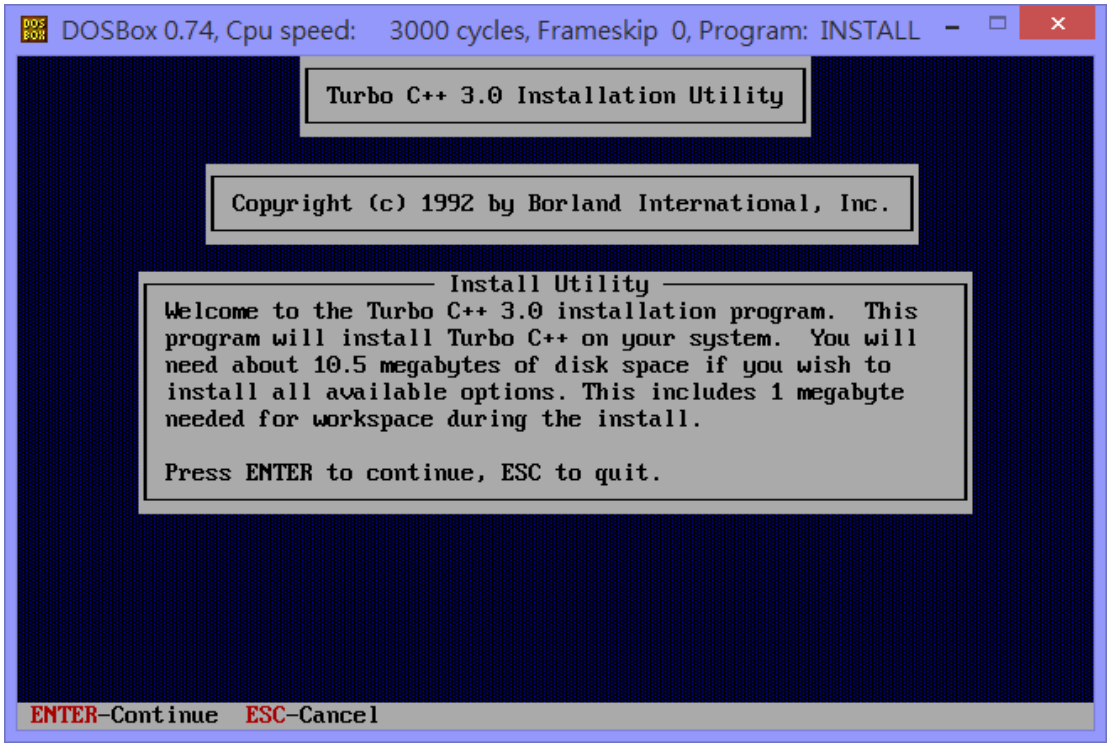


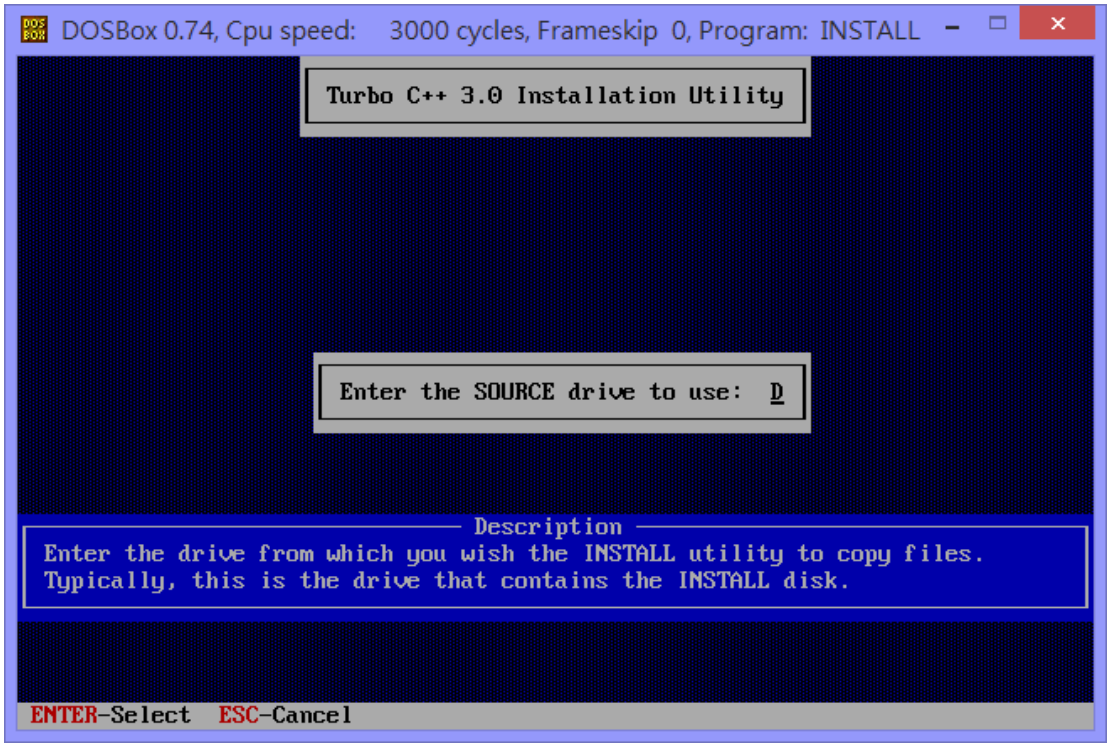
After unzip the turboc.zip and copy the turboc folder to D:\, then start up the DOSBox, and run the install.exe to install TC++3.0



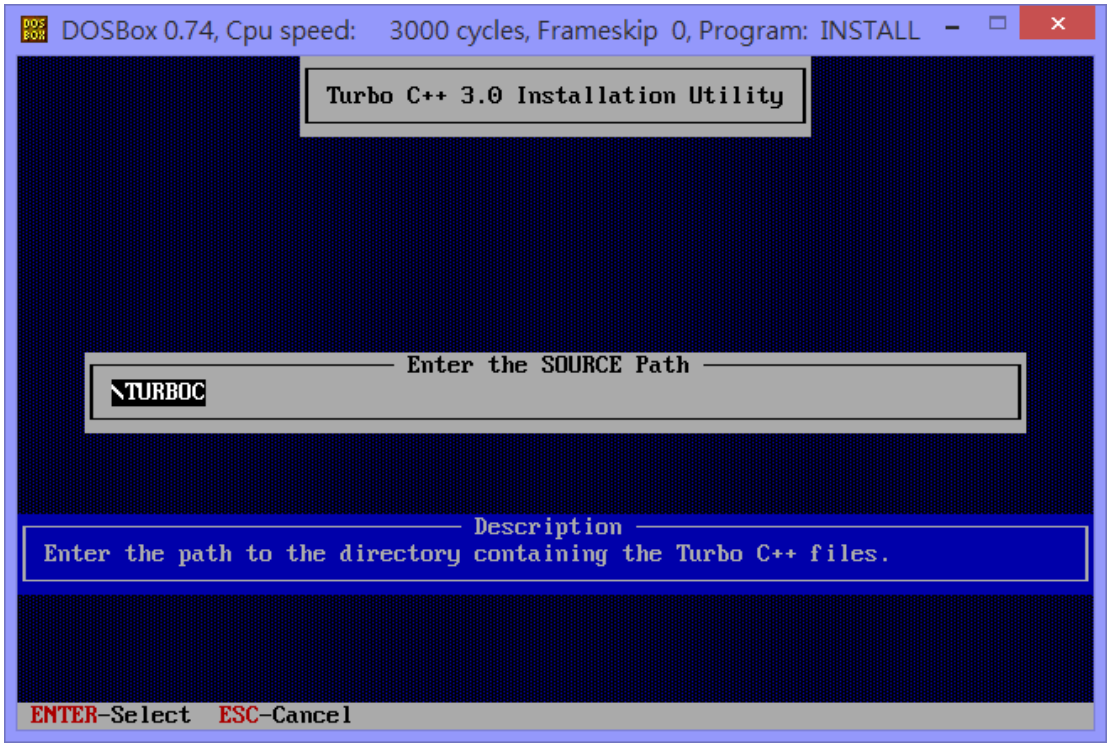
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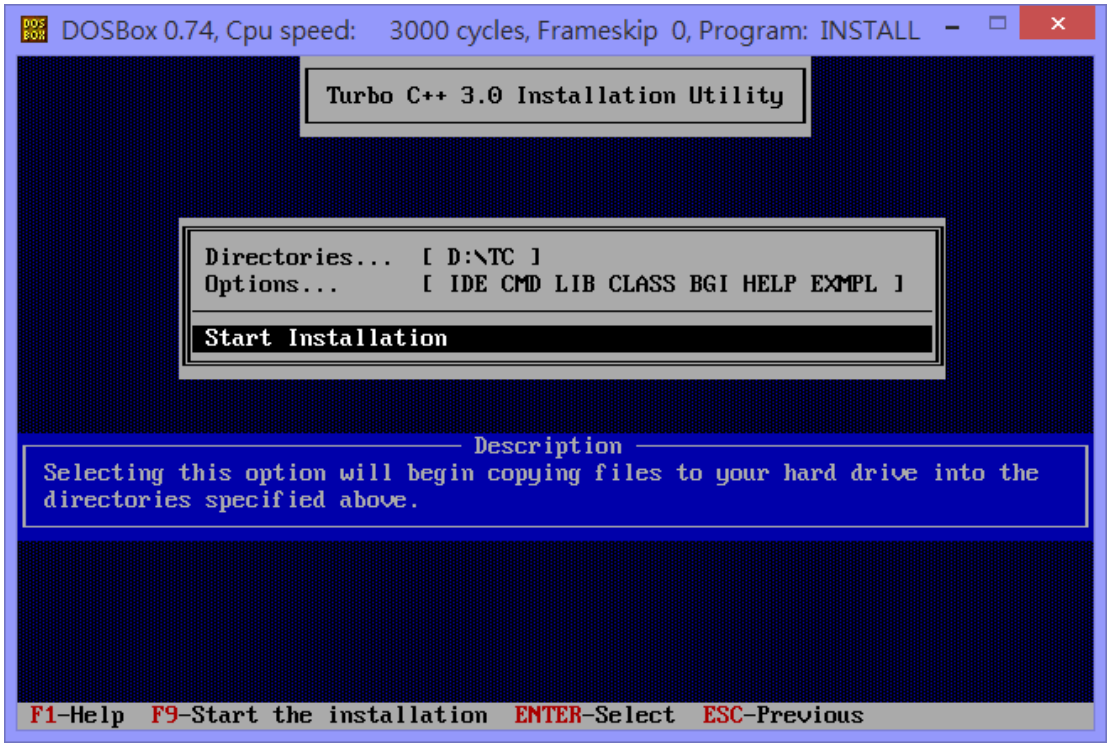
Below snap shots are steps for install TC++ 3.0



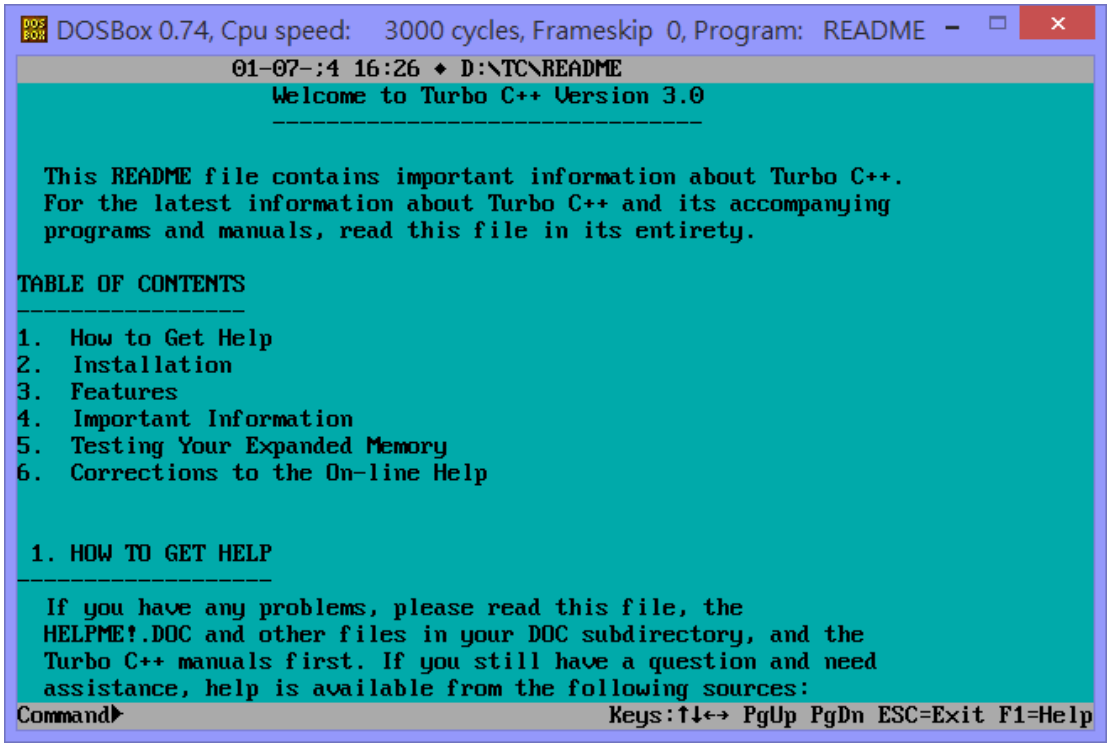


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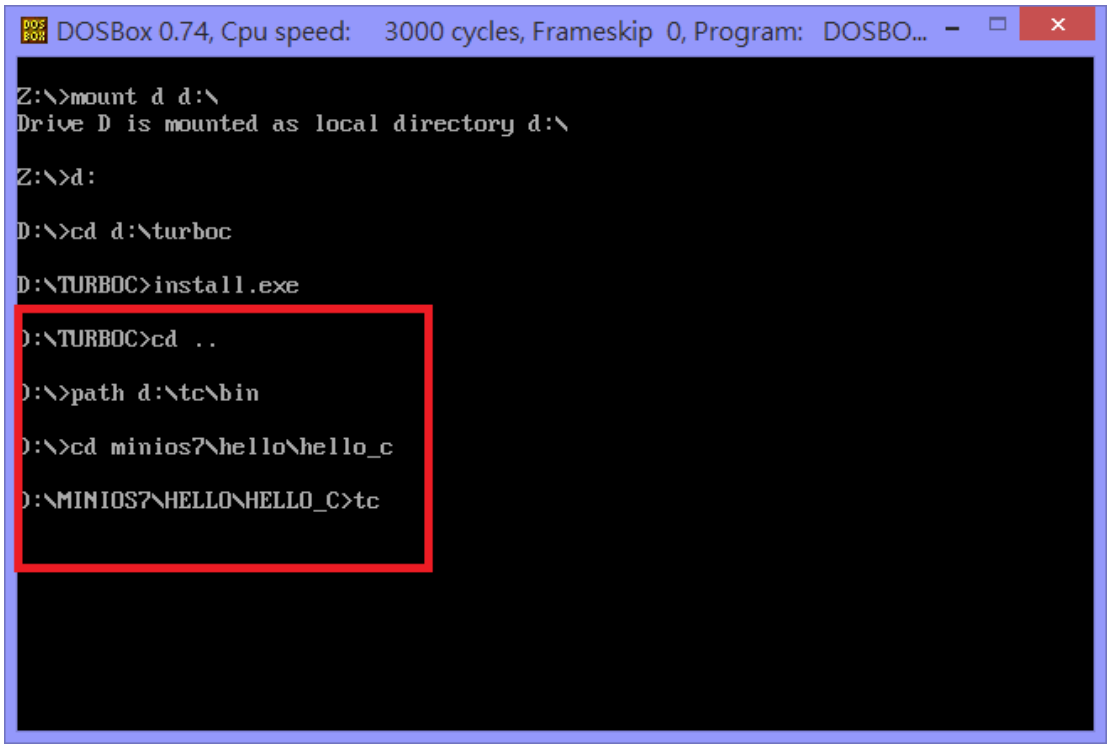




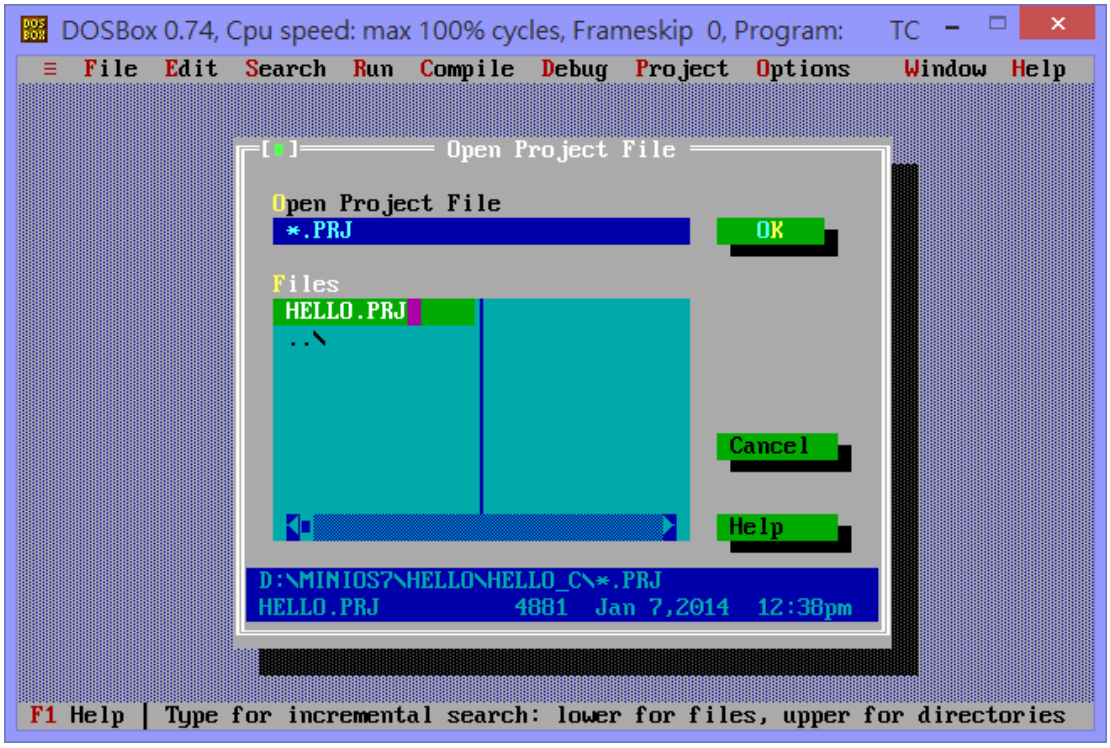
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After installed the TC++3.0, then set the Environment Path and change to demo path to run TC compiler IDE.



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