

Practical # 01

Introduction to DEV C++ IDE

Objective: *To understand the DEV C++ IDE(Integrated Development Environment) and implement a simple C Program. Theory:*

The Integrated Development Environment (IDE)

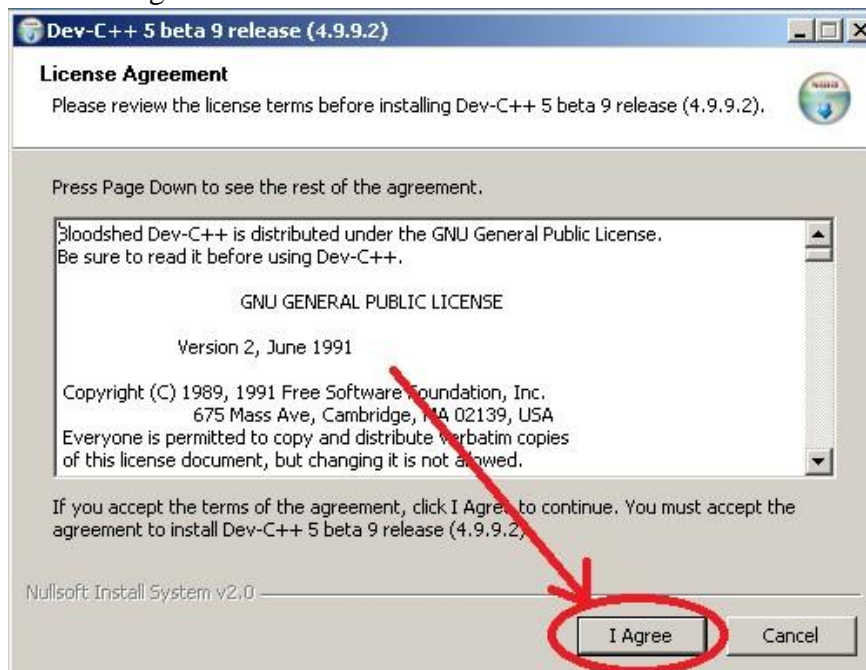
Dev-C++, developed by Bloodshed Software, is a fully featured graphical IDE (Integrated Development Environment), which is able to create Windows or console-based C/C++ programs using the MinGW compiler system. MinGW (Minimalist GNU* for Windows) uses GCC (the GNU g++ compiler collection), which is essentially the same compiler system that is in Cygwin (the unix environment program for Windows) and most versions of Linux.

Installation Steps:

1. Download the installer from the internet. Follow the instructions and install the program. The following screenshots will help you install and run the product:

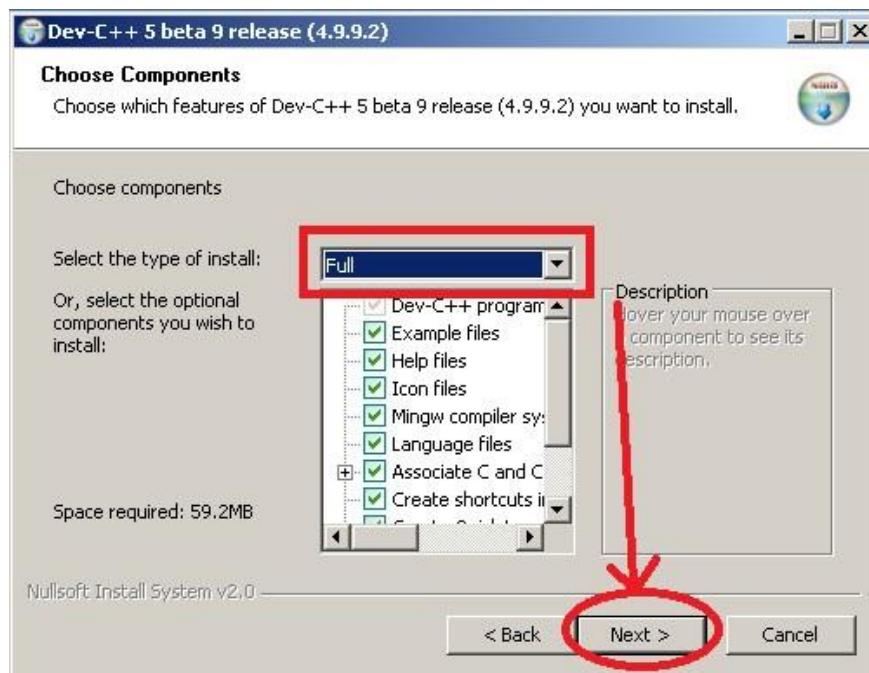


2. License Agreement
Click on the "I Agree" button to continue



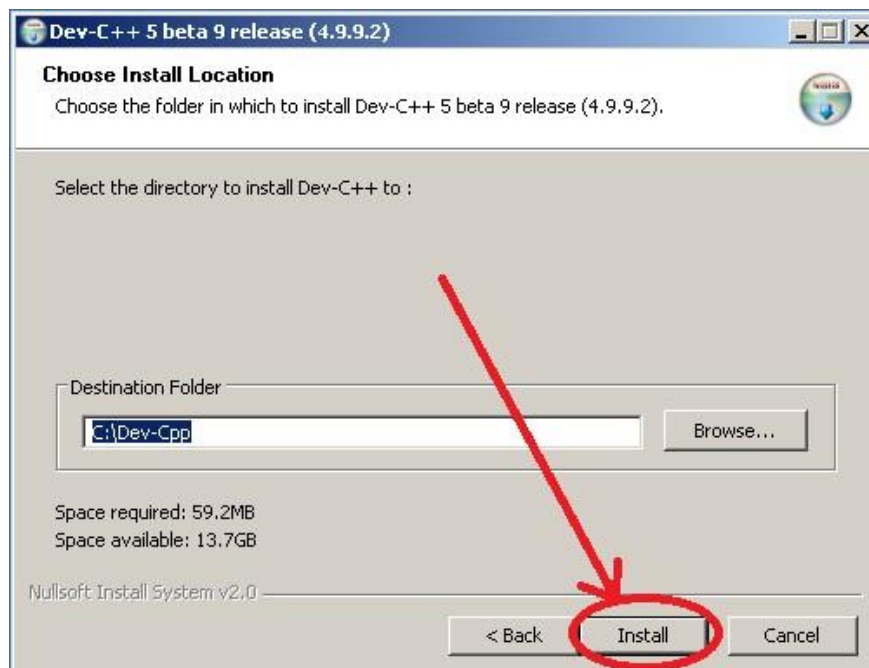
3. Choose Components

Make sure that the type of install is Full and click the Next button to continue

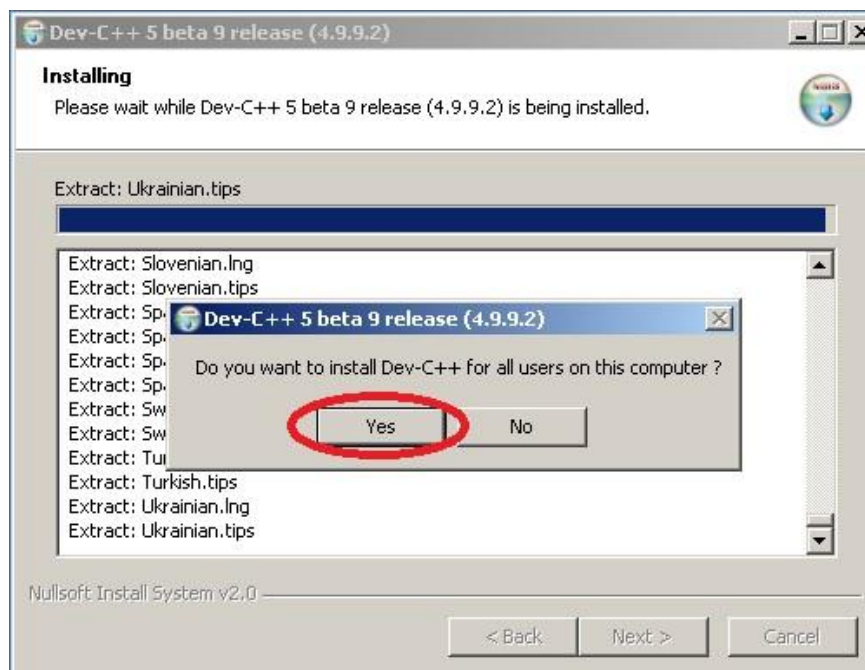


4. Choose Install Location

Click the Install button to continue



5. Installing Click the Yes button



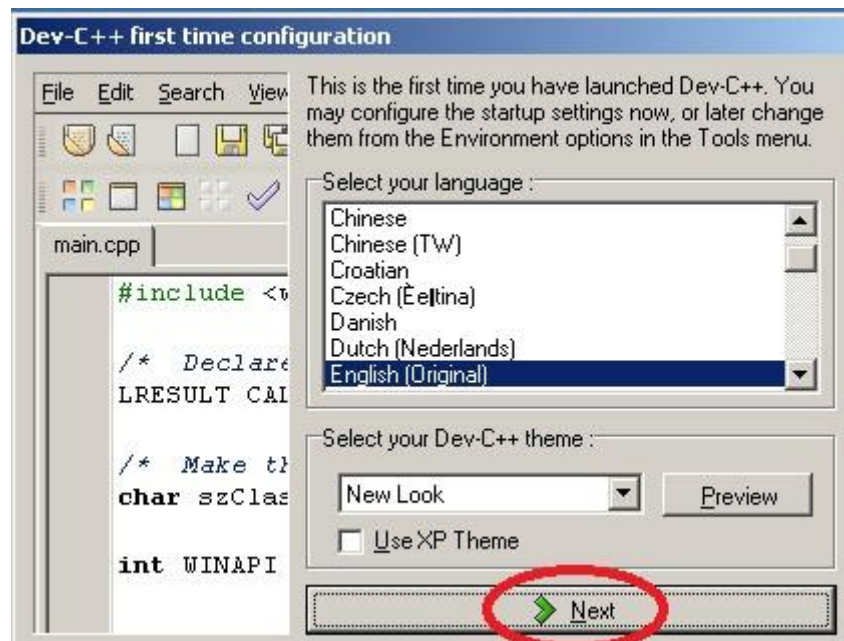
6. Finished

Click the Finish button to finalize the installation and run the program.



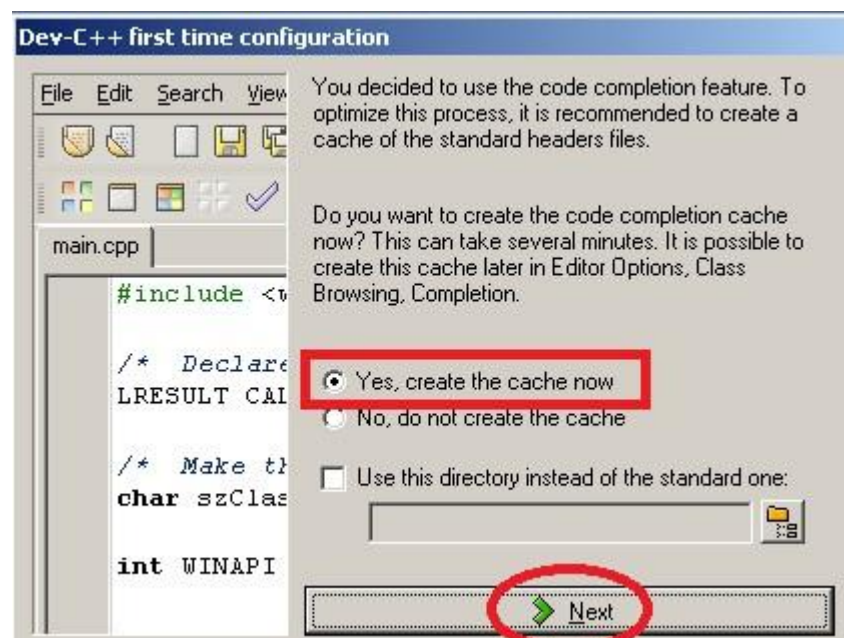
7. First Time Configuration

Click the Next button to continue

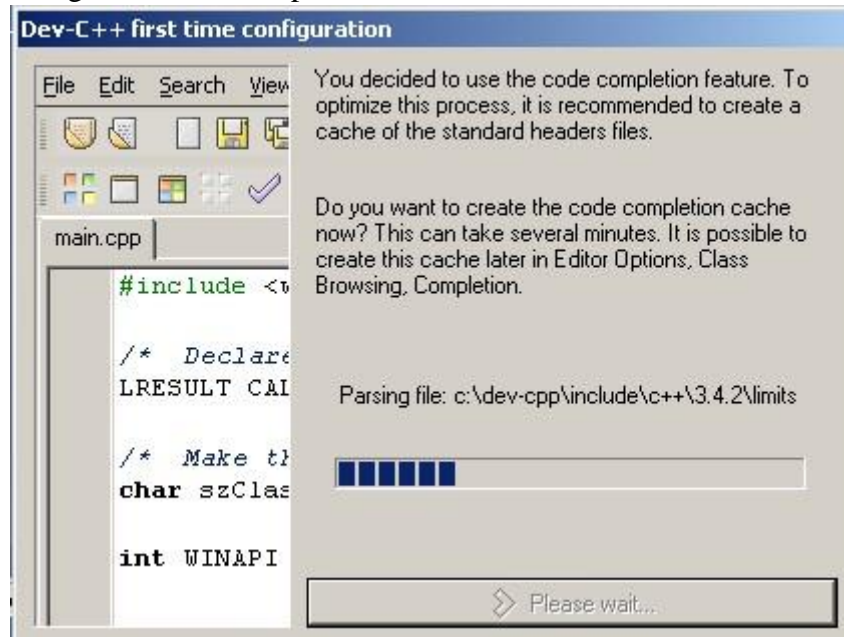


8. First Time Configuration

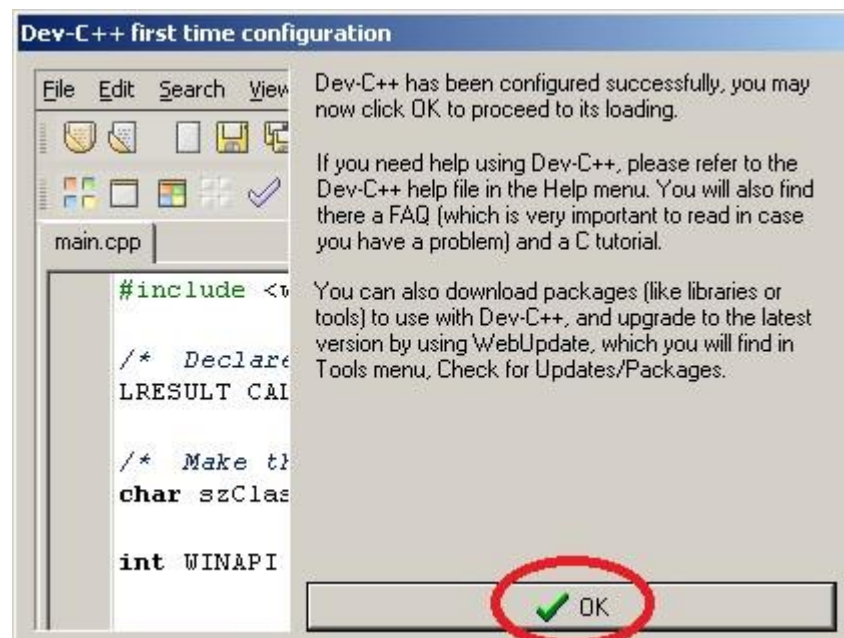
Click the Next button to continue



Wait for the Progress Bar to Complete

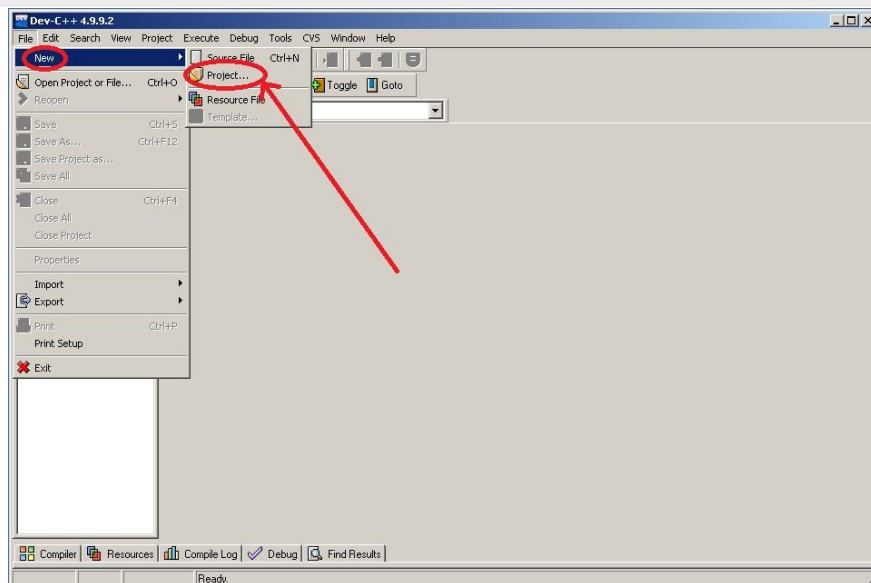


Click the OK button to Finalize



New Project Menu

Click the File menu, then select the New menu item and click the Project menu item.



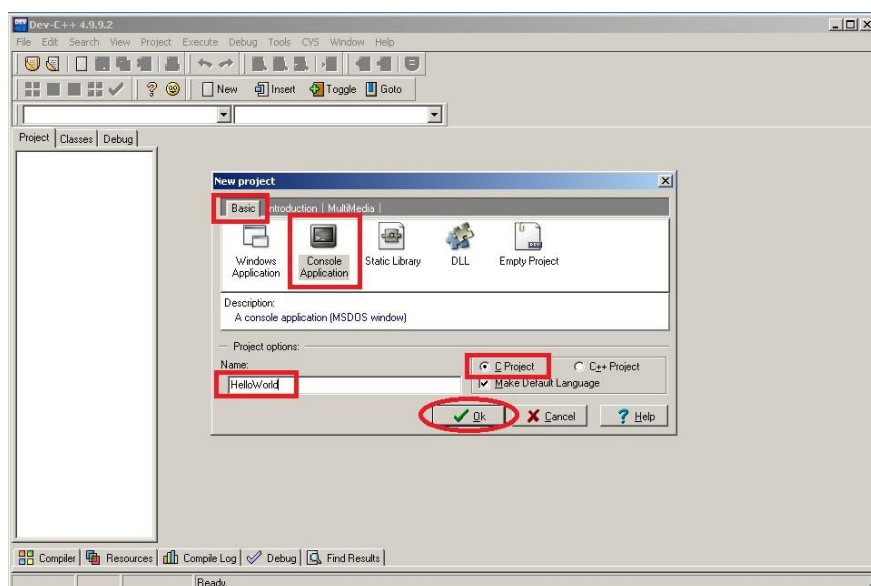
New Project

On the top, make sure that Basic tab is selected and under the Basic tab, select “Console Application”

Give a name to your project using the Name text box, For instance, “Hello World”.

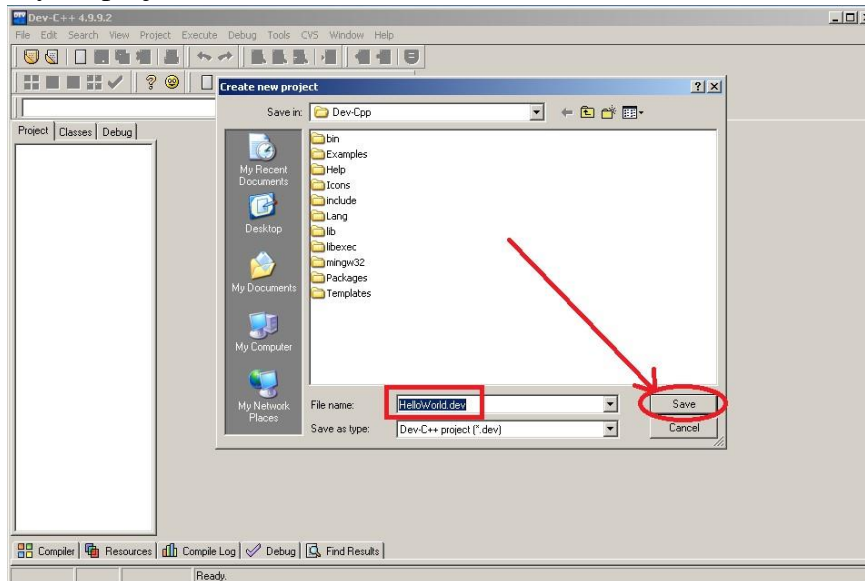
Important: Choose “C Project” under “Project Options”, on the left

Click the OK button to create your project



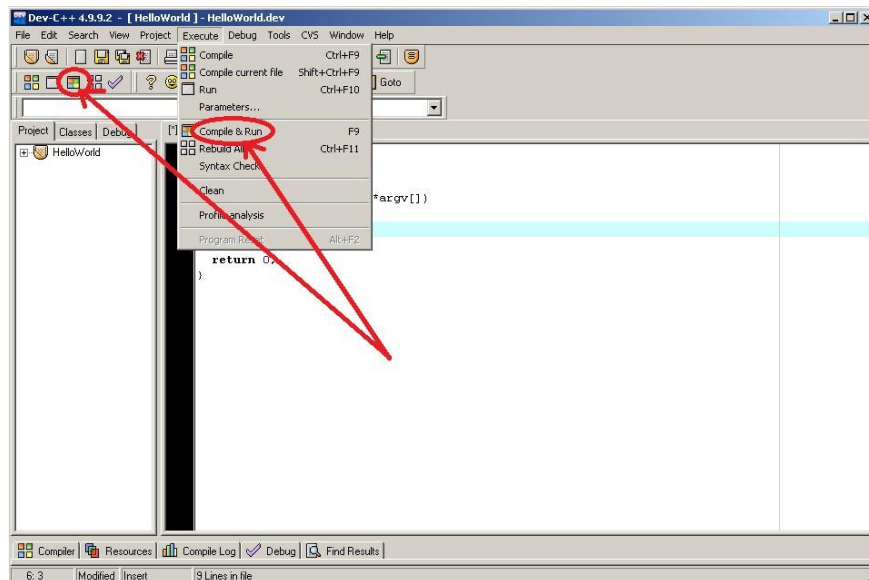
Create New Project

Give a name to your project file and click the Save button to continue



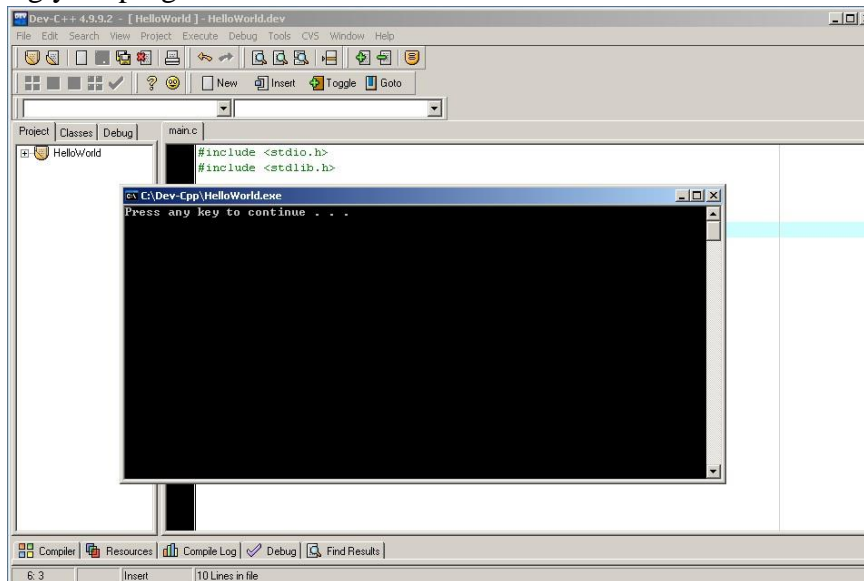
Compile & Run:

Click “Compile & Run” menu item or the icon displayed in the below screenshot or just Press F9 to compile and run your program.



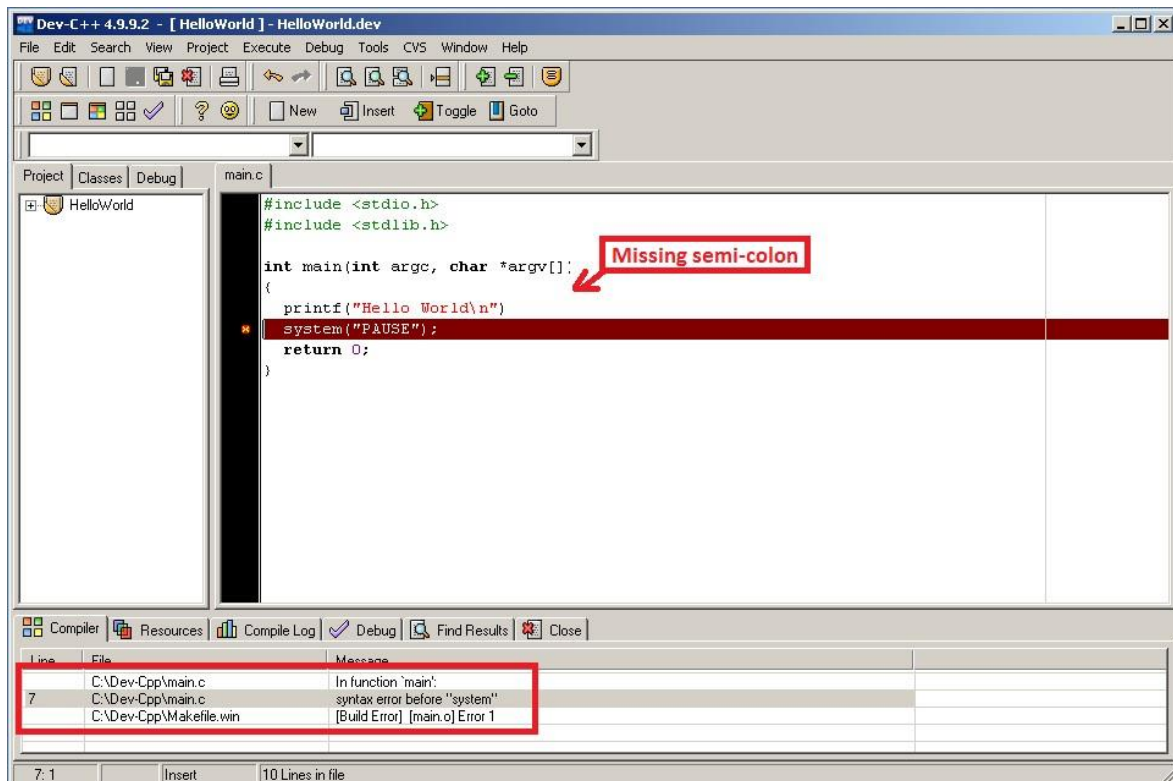
Running:

Assuming you did not make any syntax errors on your code, you should see a similar output window running your program.



Compile Failed

If you try to compile a code which has syntax errors, Compiler window lists the errors with their line numbers. You can double click the error and see the error highlighted in the code.



Review Questions/ Exercise:

1. Discuss the steps necessary to produce executable file?

Answer:

In execution of C project mainly contain four steps:

- (01) **Creating the Program:** It means the that to creating/writing the program by humans; or high level language that is only readable by humans not by machines ;
- (02) **Compiling the Program:** It means to compile the code by some apps like "mingW" to check if it has any errors it will not run it will show error and by tapping on line number in which we have error we can make them correct;

Linking the program with functions that are needed from the C library:

- (03) **The word linking** means by its own that connecting the program with functions that are needed from the C Library; These are predefined/pre-written functions code that perform common tasks;

(04) Executing the program: After checking and making sure that it has no any error and you can run your program now after compilation and linking computer follow the instructions to perform the task we have written , producing the output we expect;

2. Discuss the purpose of Compiler & the file needed by compiler?

Answer:

Compiler is that translate high-level language like c/c++ to Machine language or you can say that it convert human-readable language to Binary language.

It may needed source file to compile or original file of coding which is written by us which has extension (like .C/.C++);

3. Discuss the linker & the file needed by the linker?

Answer:

A liker is a program which combines the various object files produced by compiler into a single executable files; The primary purpose of the linker is to resolve references among different object files and libraries so all the functions and variables can work together ;

- Object Files: These are the compiled versions of the source code files, typically with extensions like .obj or .o, containing machine code.**
- Library Files: Linkers use these files to access reusable code from standard or third-party libraries, which contain functions that the program relies on.**
 - Executable File: The linker ultimately produces a final executable file by linking together the object files and any necessary libraries.**