# Eclipse:

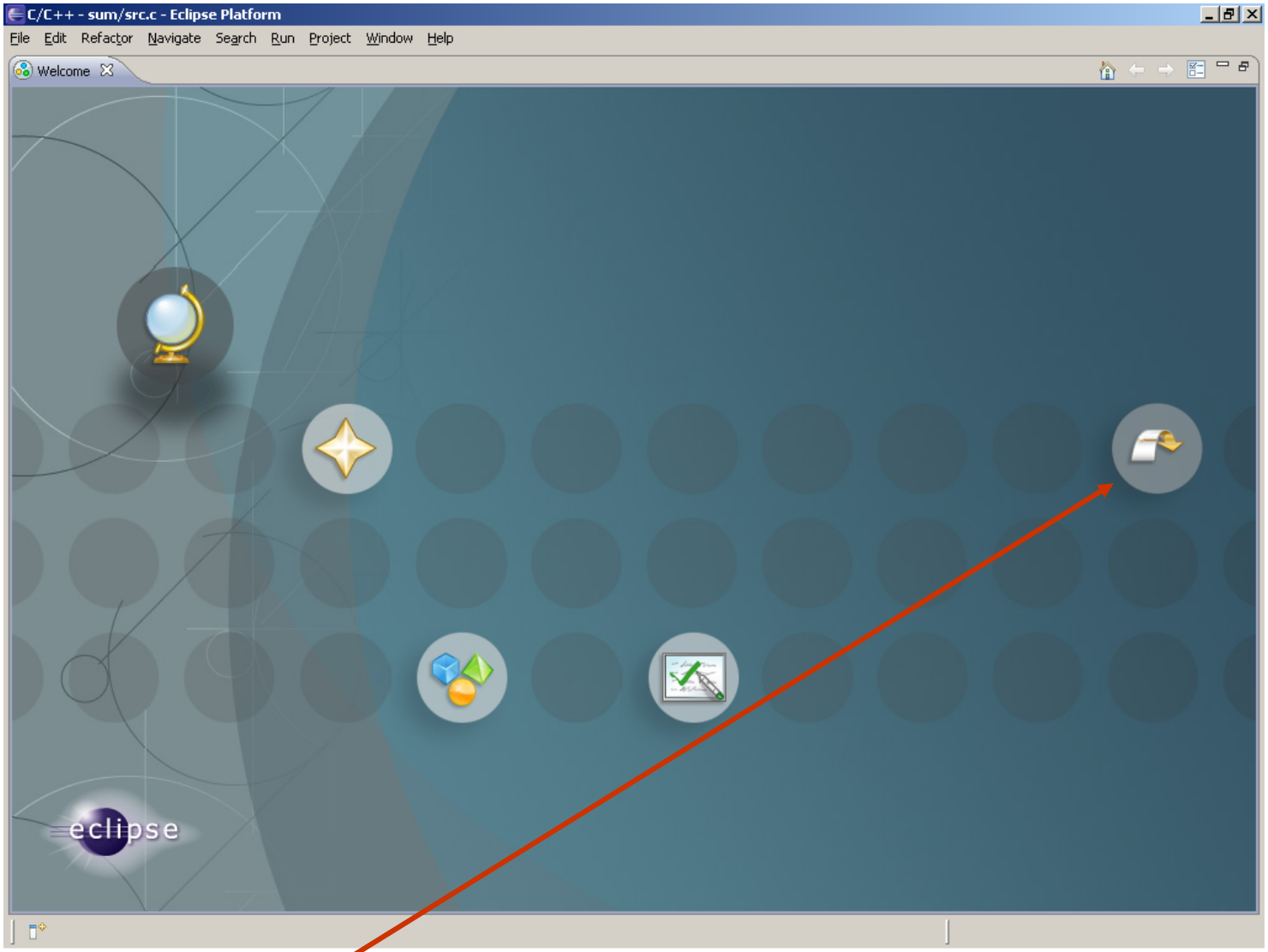
A wonderful IDE

# Before you start…

Make Sure That …

1. Cygwin environment is properly installed.
   If not then read ***Installing cygwin.pdf*** file. Present in shred directory.
2. In **PATH** Environment variable path of cygwin/bin directory is given.
3. And eclipse is properly installed.

# Open eclipse goto start > Programs > eclipse




Click here to close this



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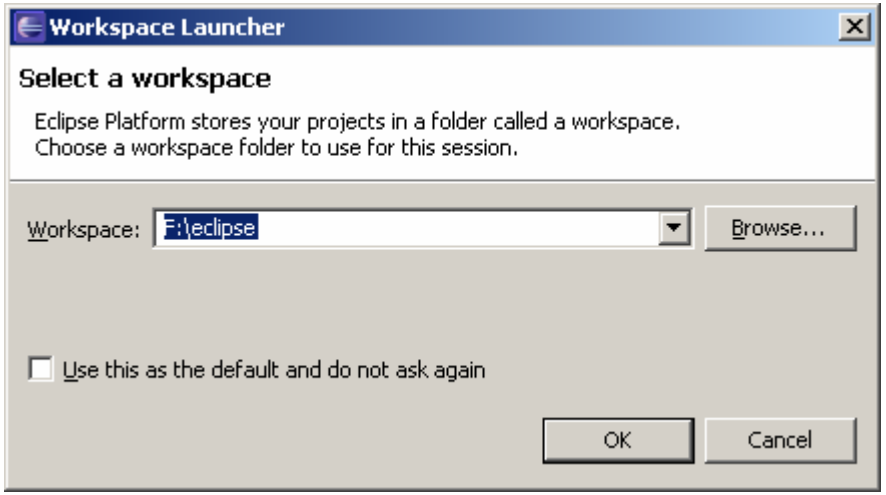
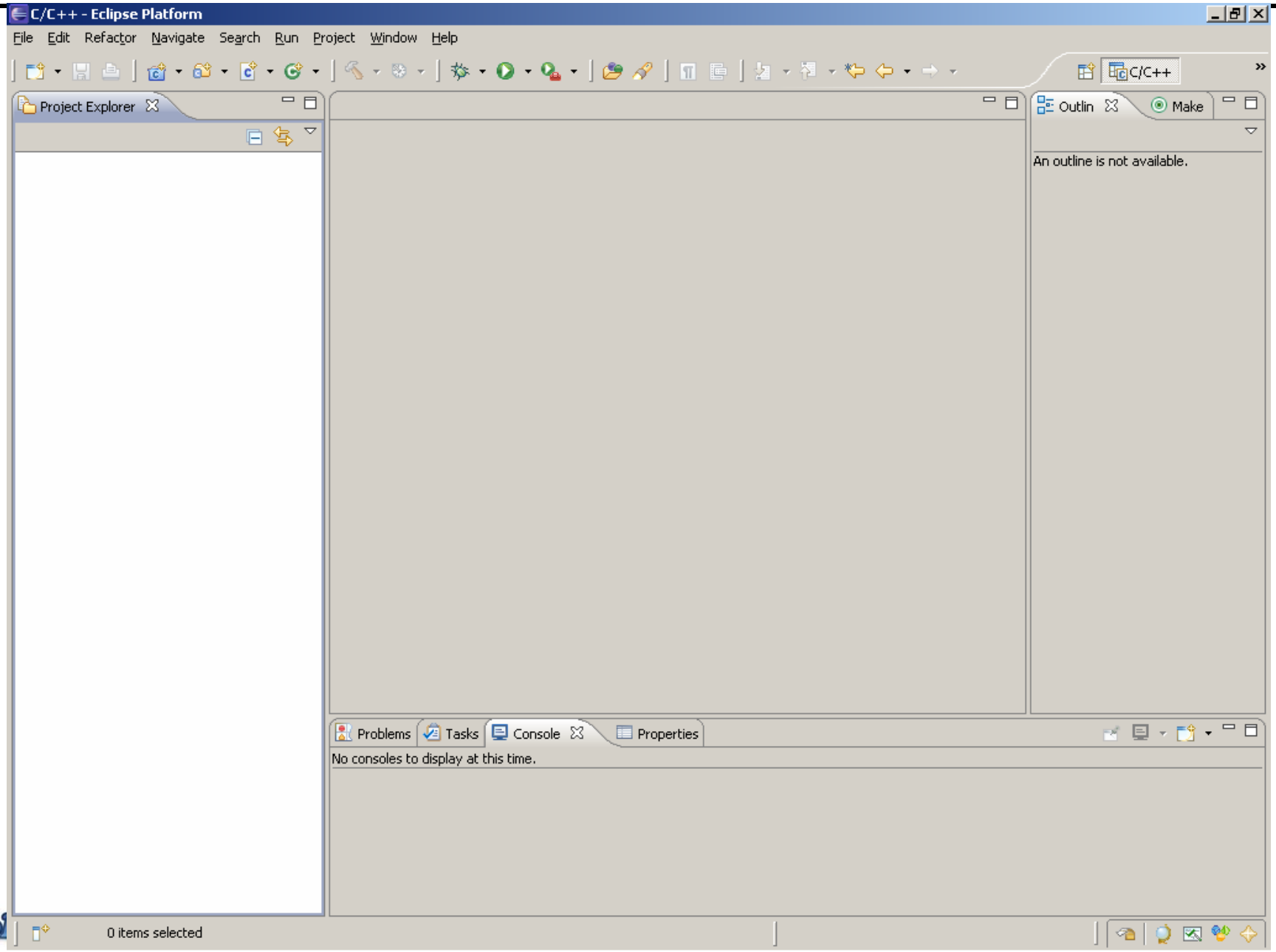
# Opening workspace directory

Give the location for workspace.
I supposed to choose f:/eclipse as my workspace directory



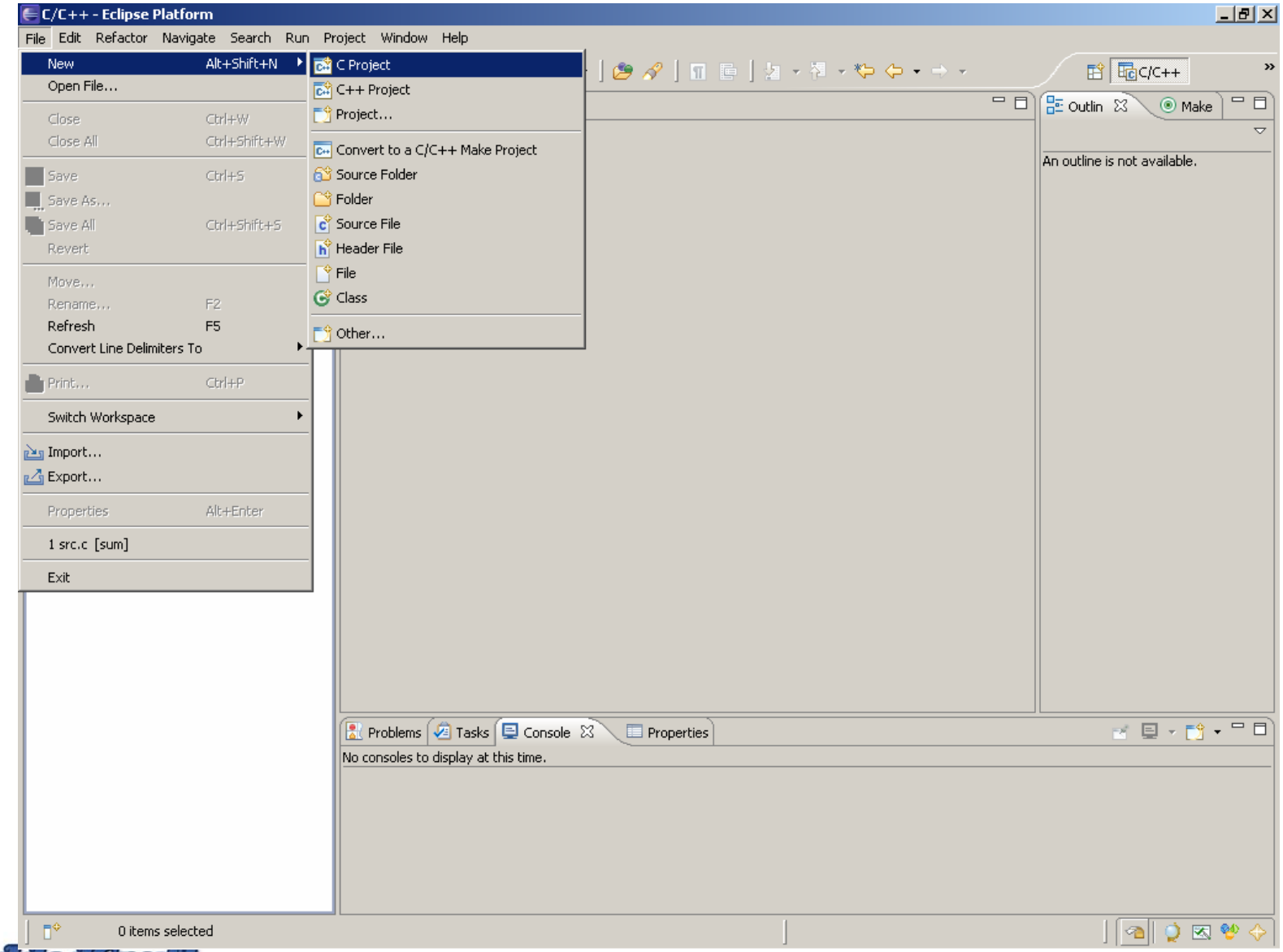

Click OK

# Eclipse IDE


C/C++ - Eclipse Platform
File Edit Refactor Navigate Search Run Project Window Help
C/C++
Project Explorer
Outlin
Make
An outline is not available.
Problems
Tasks
Console
Properties
No consoles to display at this time.
0 items selected

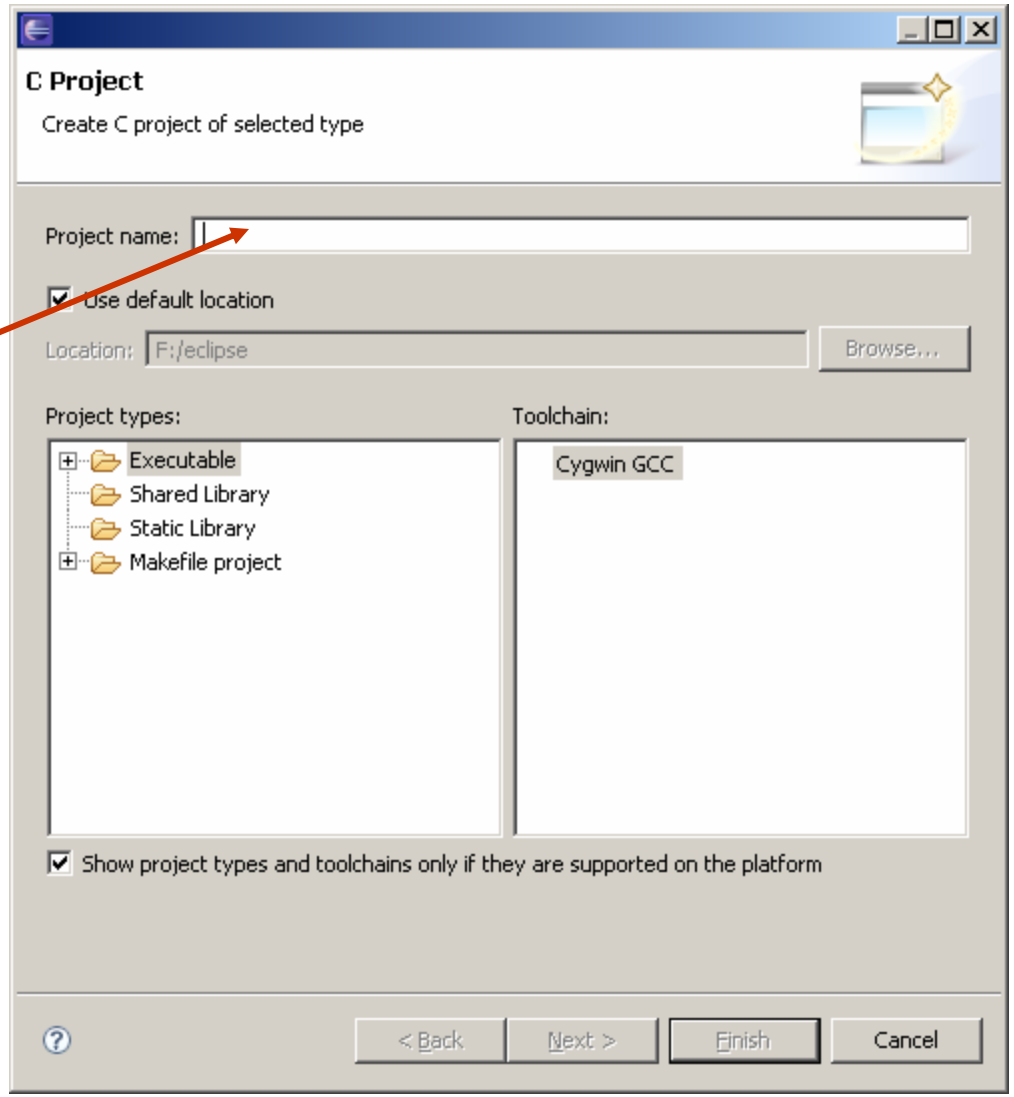
# Creating a new project

File > New > C Project



# Creating a new project: Give project name

Enter Project Name of project



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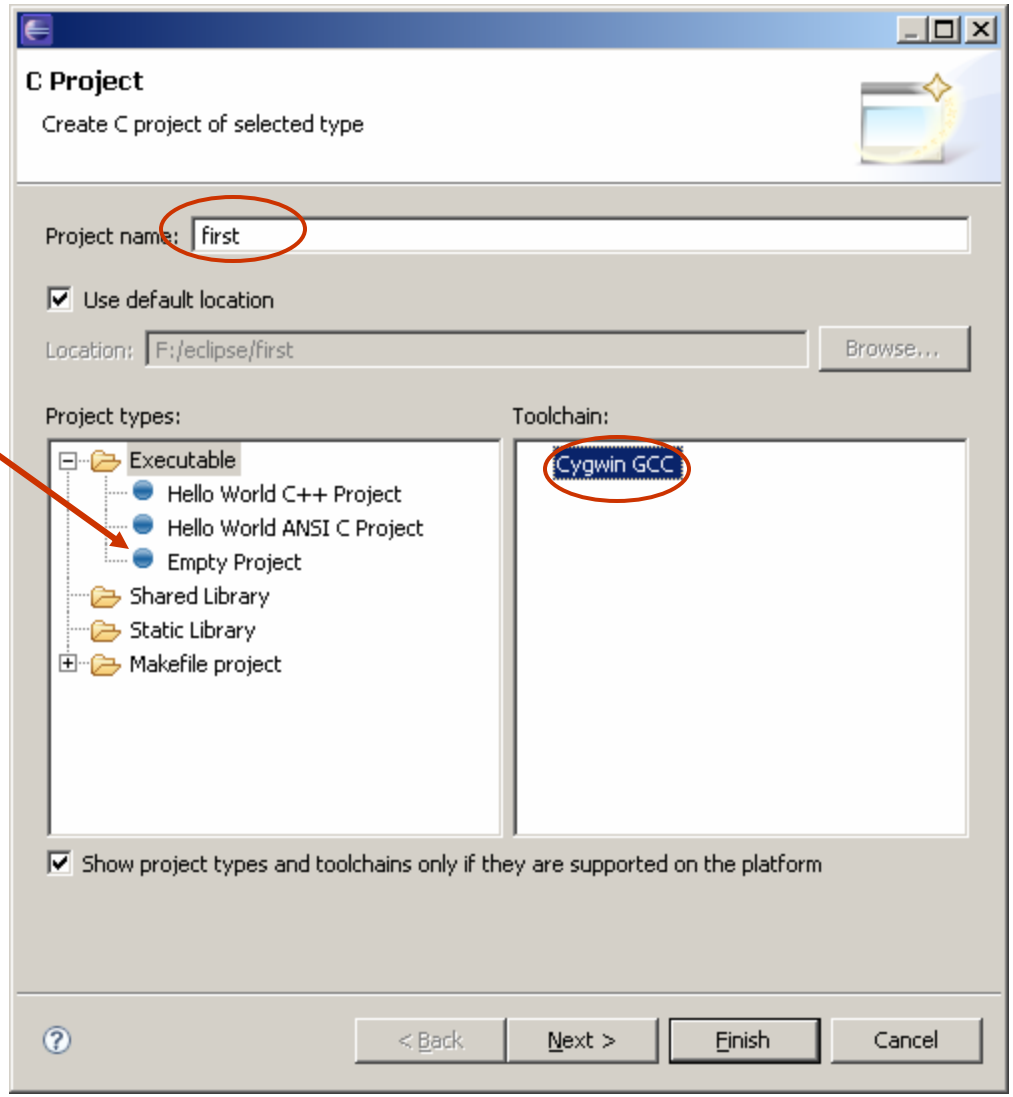
# Creating a new project: Choose project type

Let Project Name First

Project type Empty Project

Toolchain Cygwin gcc



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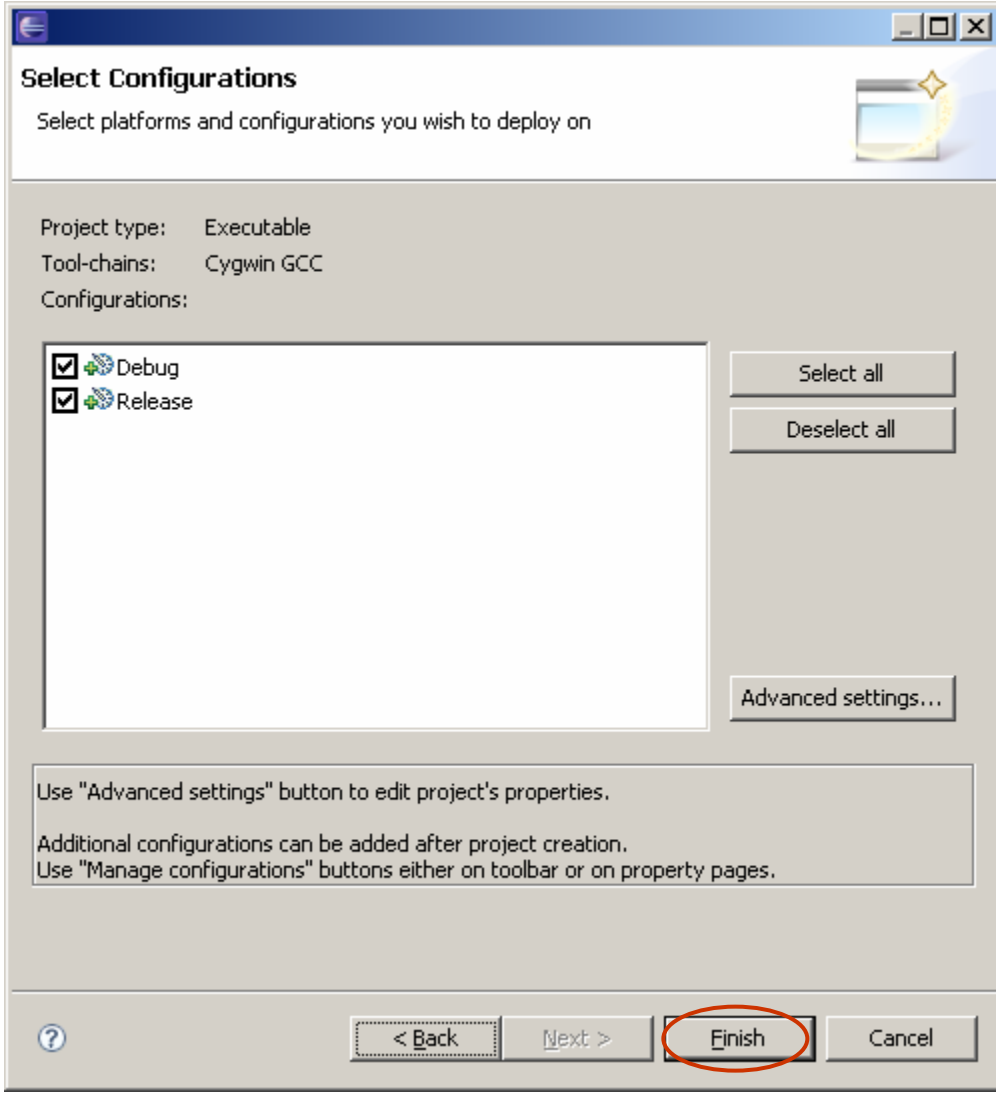
# Creating a new project: Now let us choose configuration

Choose both configurations
- Debug
- Release

Click Finish



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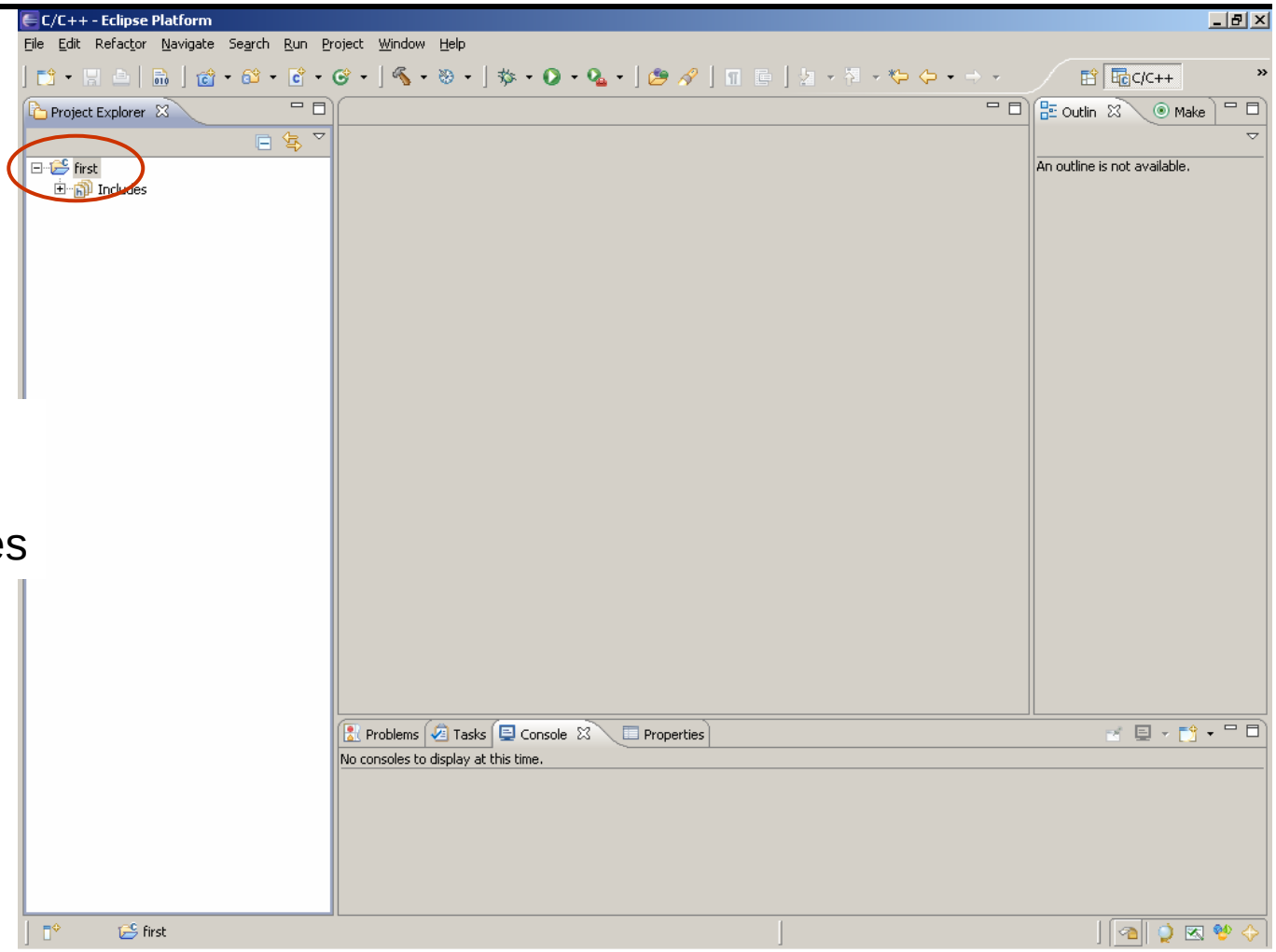
# Creating a new project: Project created




Here is our first project

And default included files



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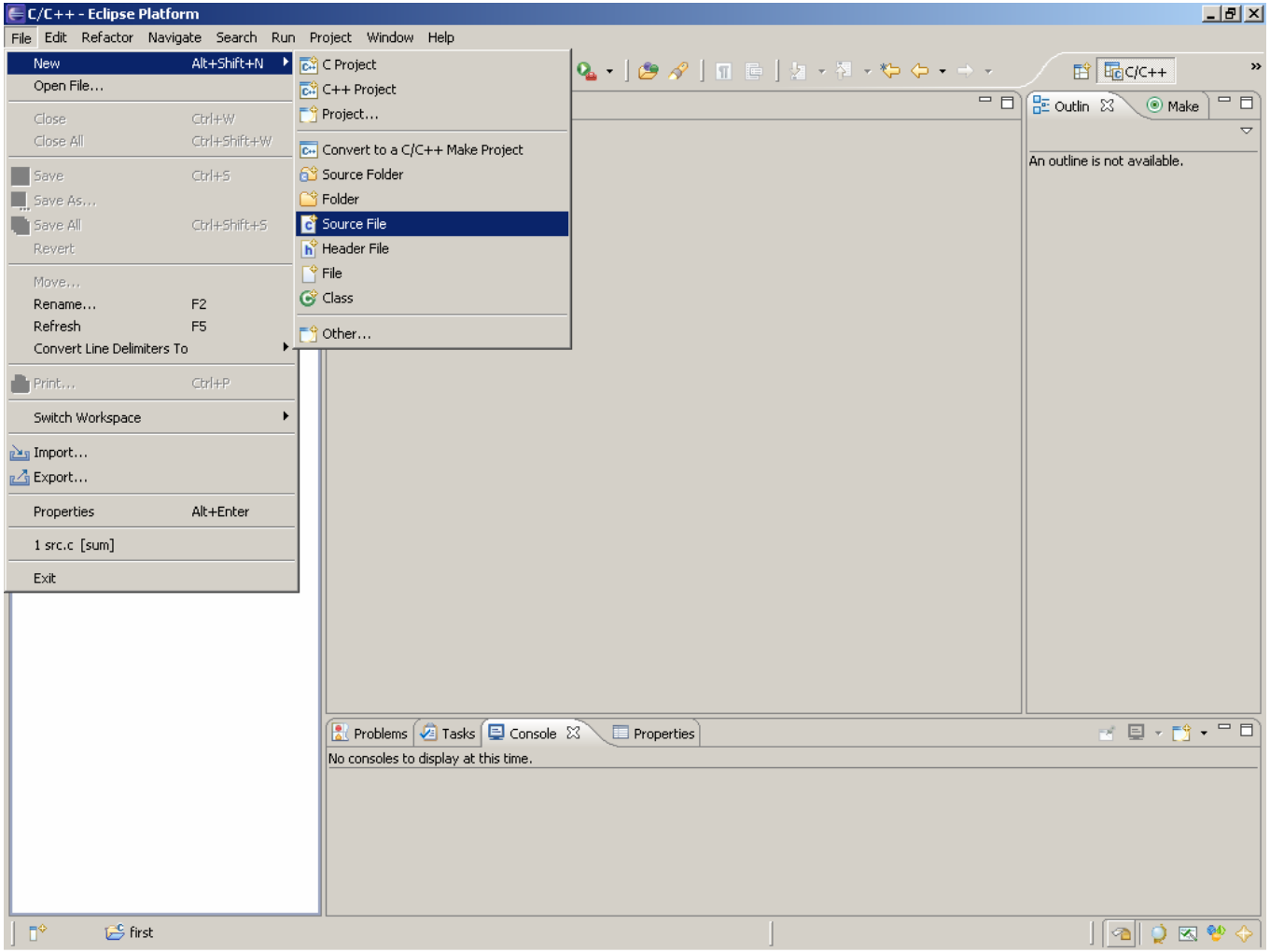
# Creating a new project: Let us add c Source file

File > New > Source File



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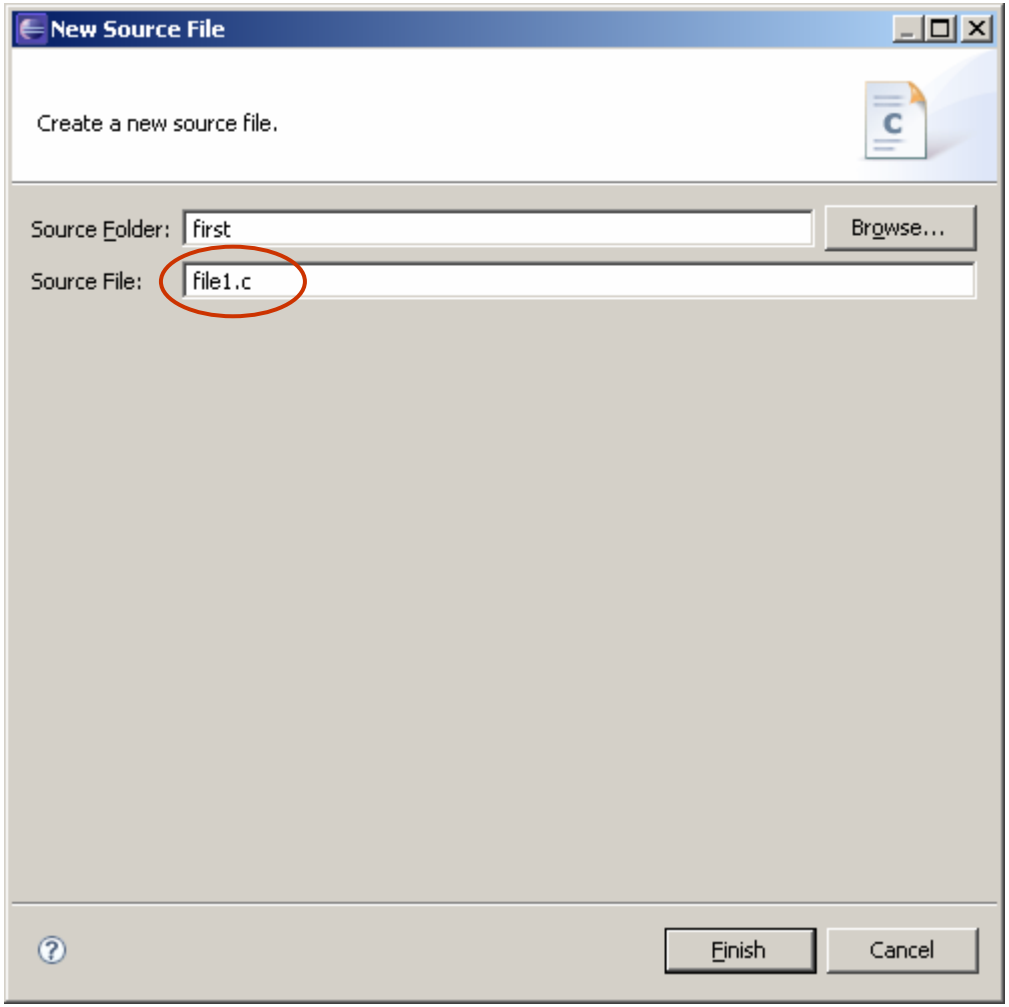
# Creating a new project: give name of C file

Let file name is : file1.c

Remember always add **.c** after name



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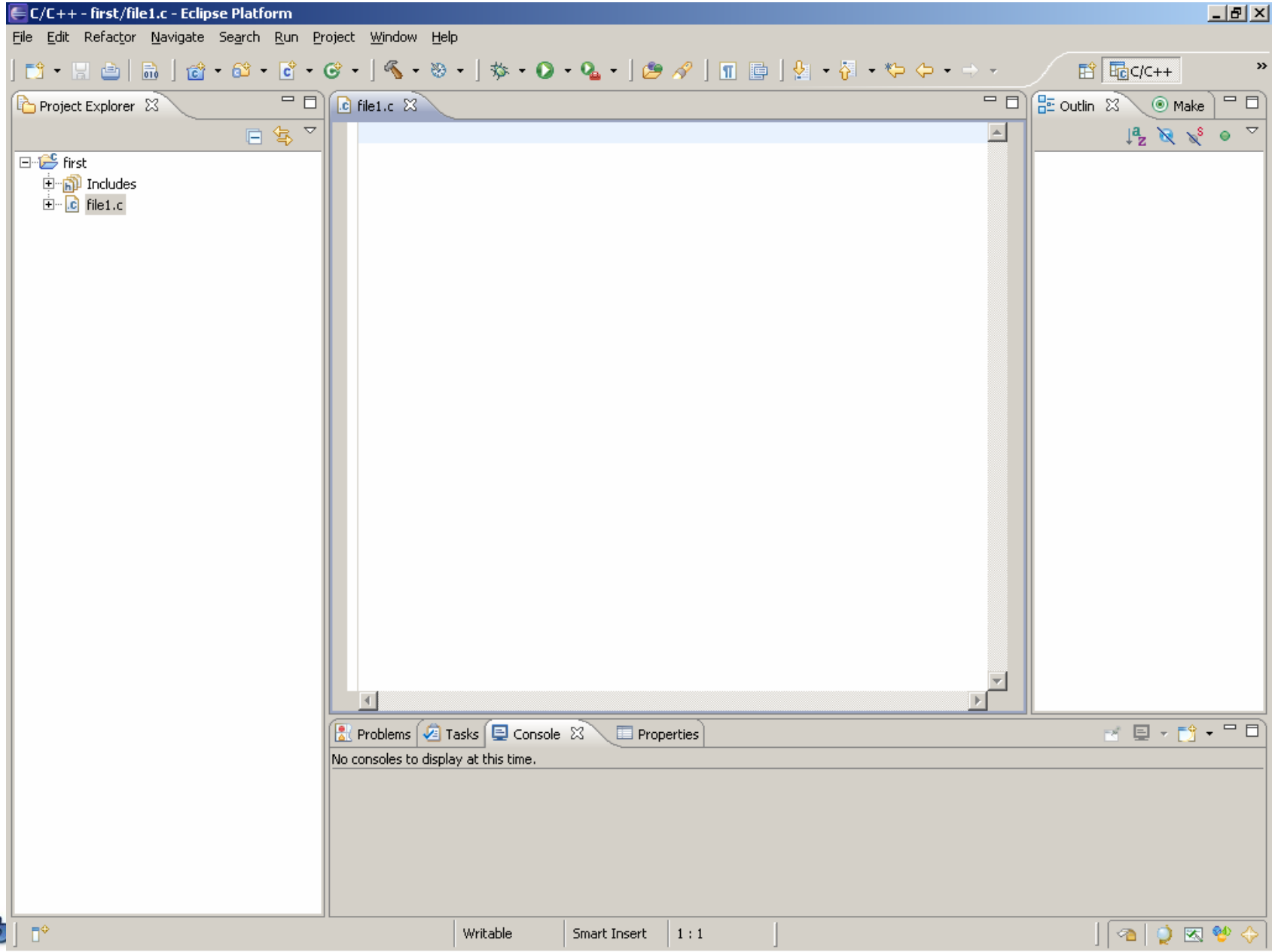
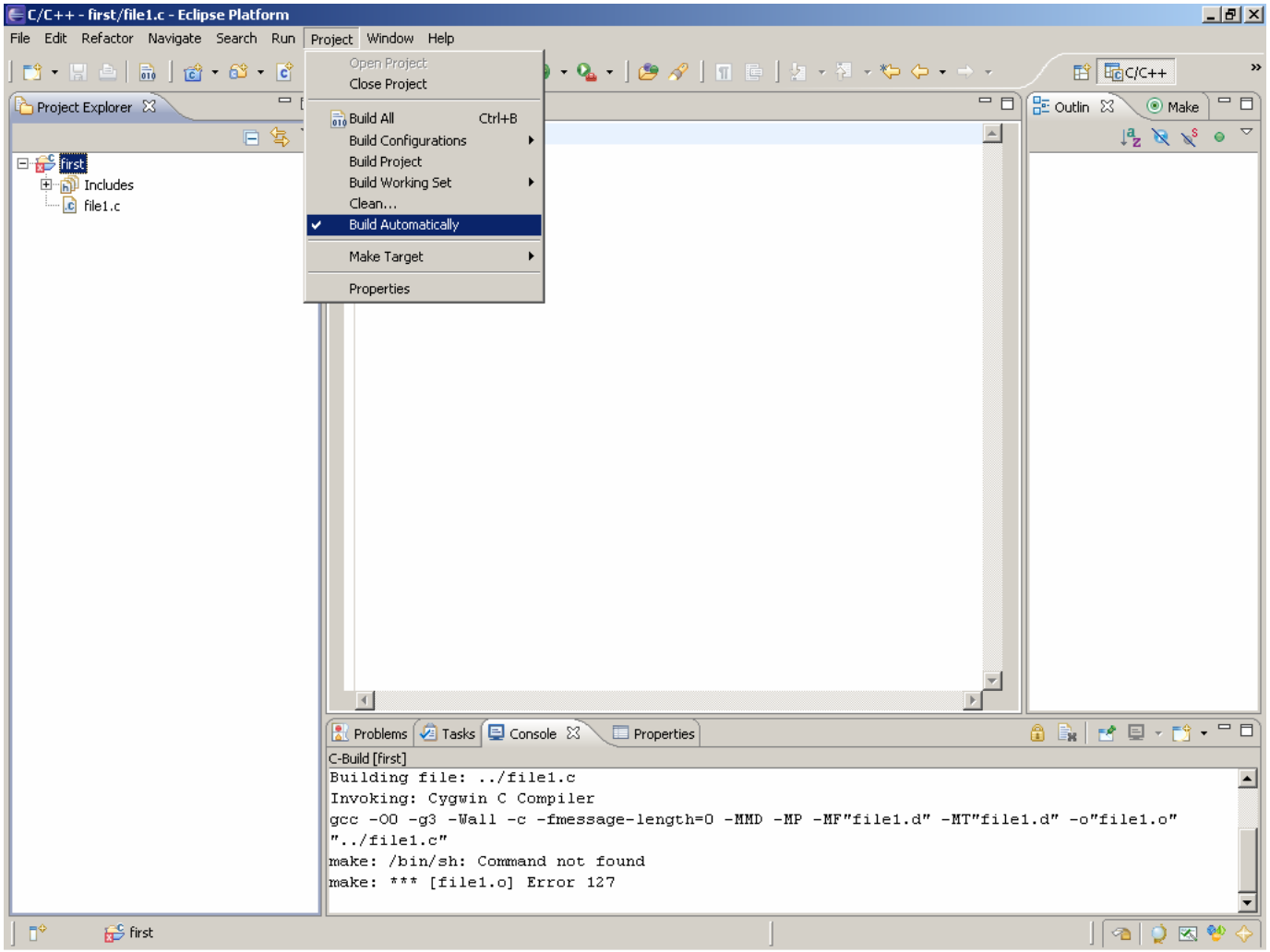
# Creating a new project: so file is also added



# First disable automatic build

Go to Project > Build automatically

I mean disable the feature in which it build code automaticaly



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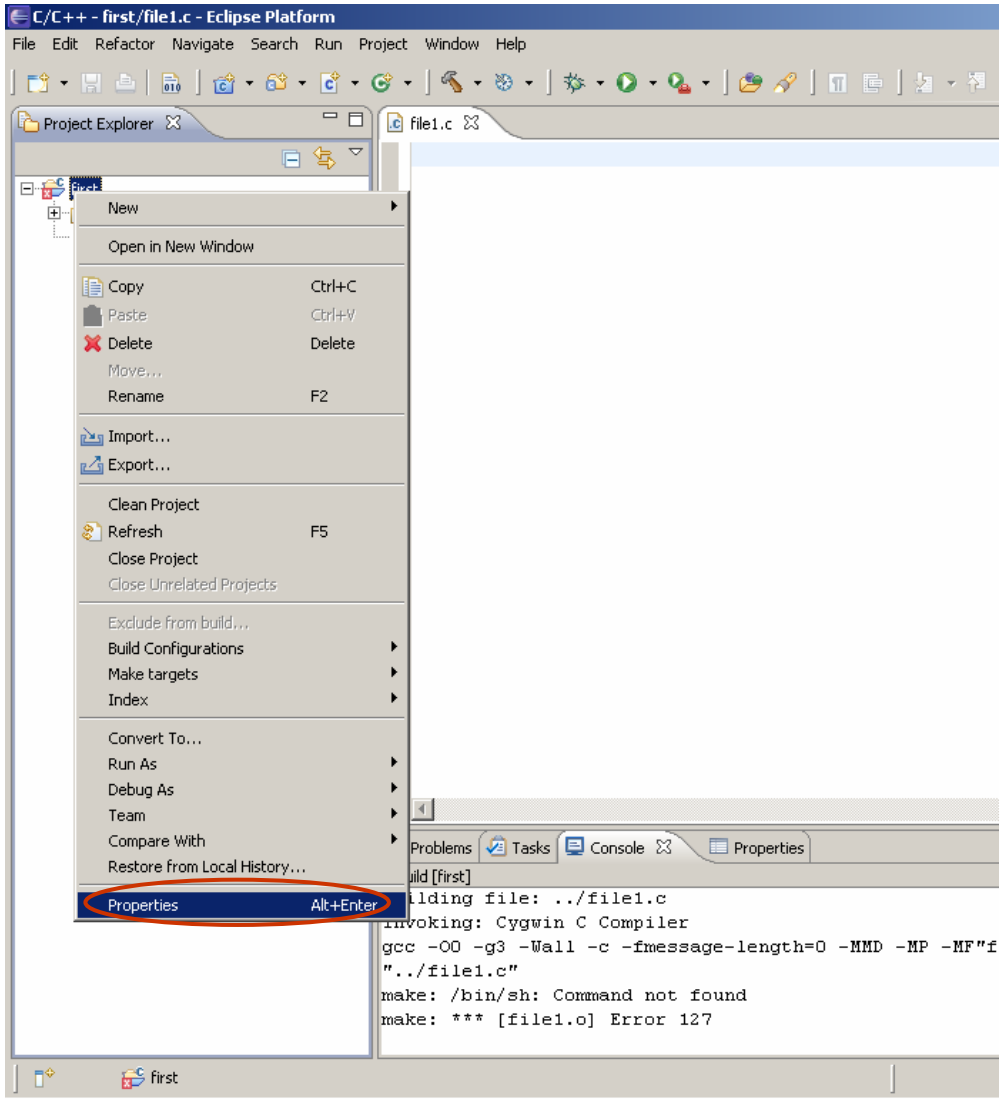
# Let us do some setting related to use of builder

Actually we want to use internal builder

So, for that we have to change the builder setting from project property

Hence Just Right Click on project top directory and choose properties



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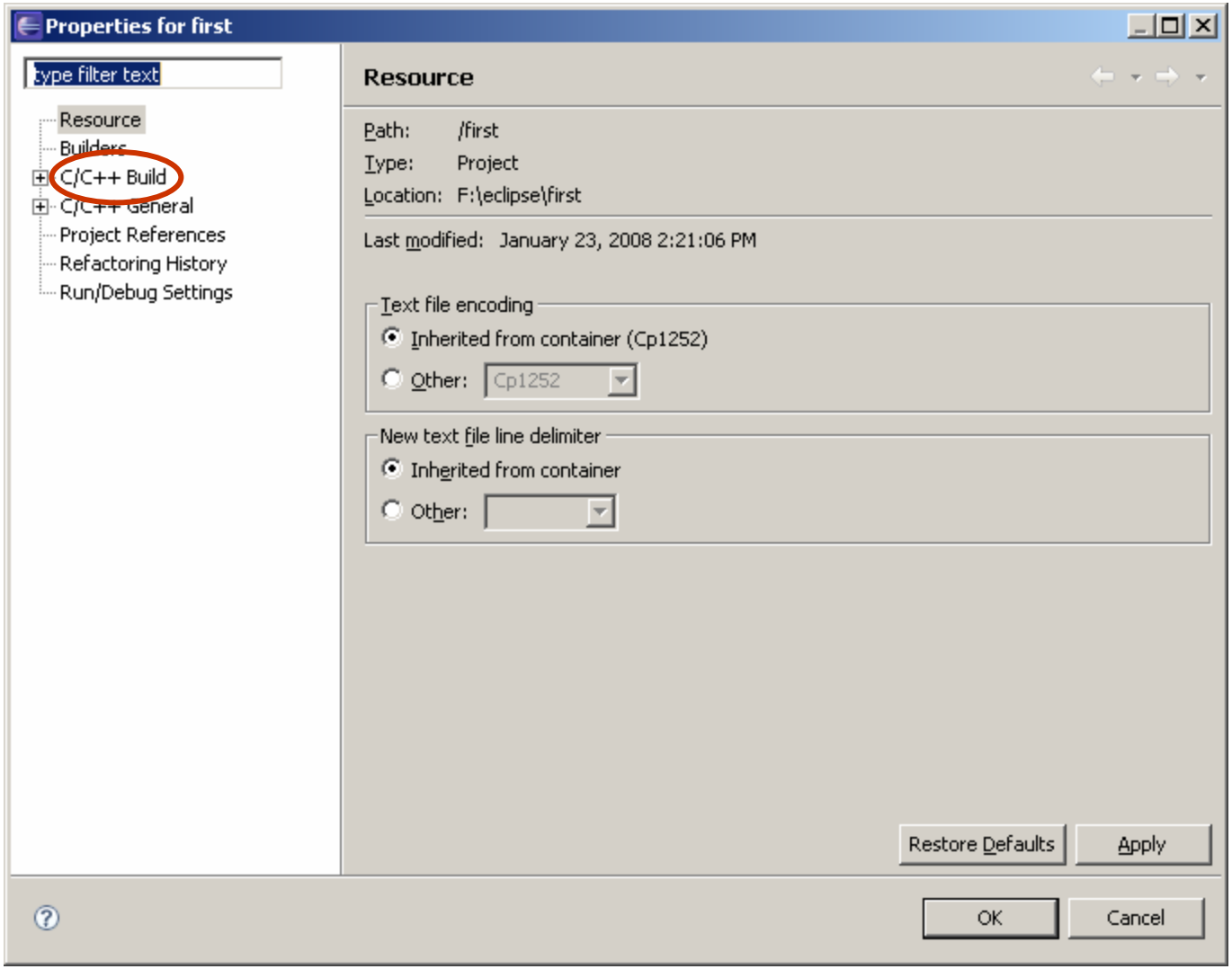
# Properties of project

Open C/C++ Build



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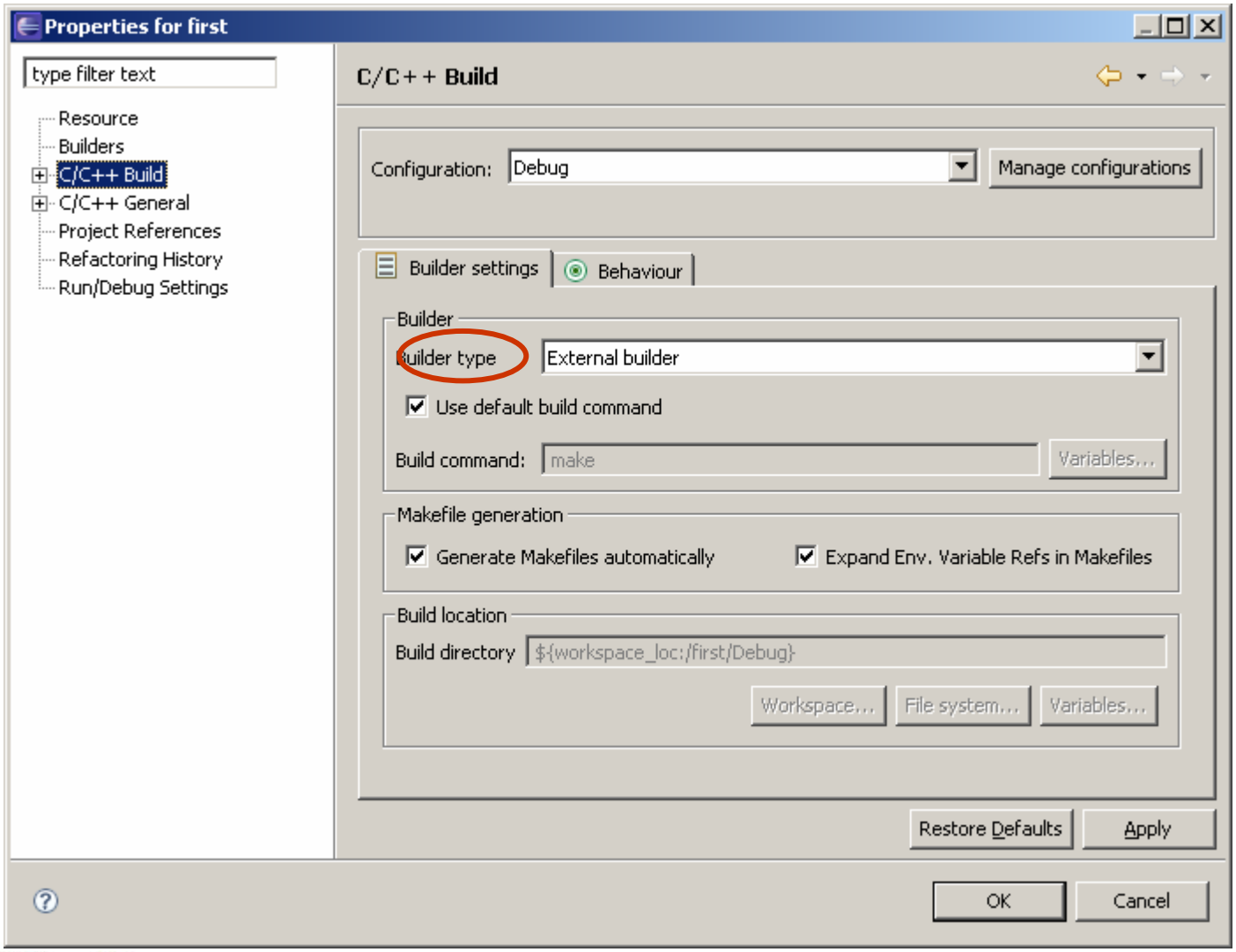
# Modifying Builder settings

In Builder type choose internal builder



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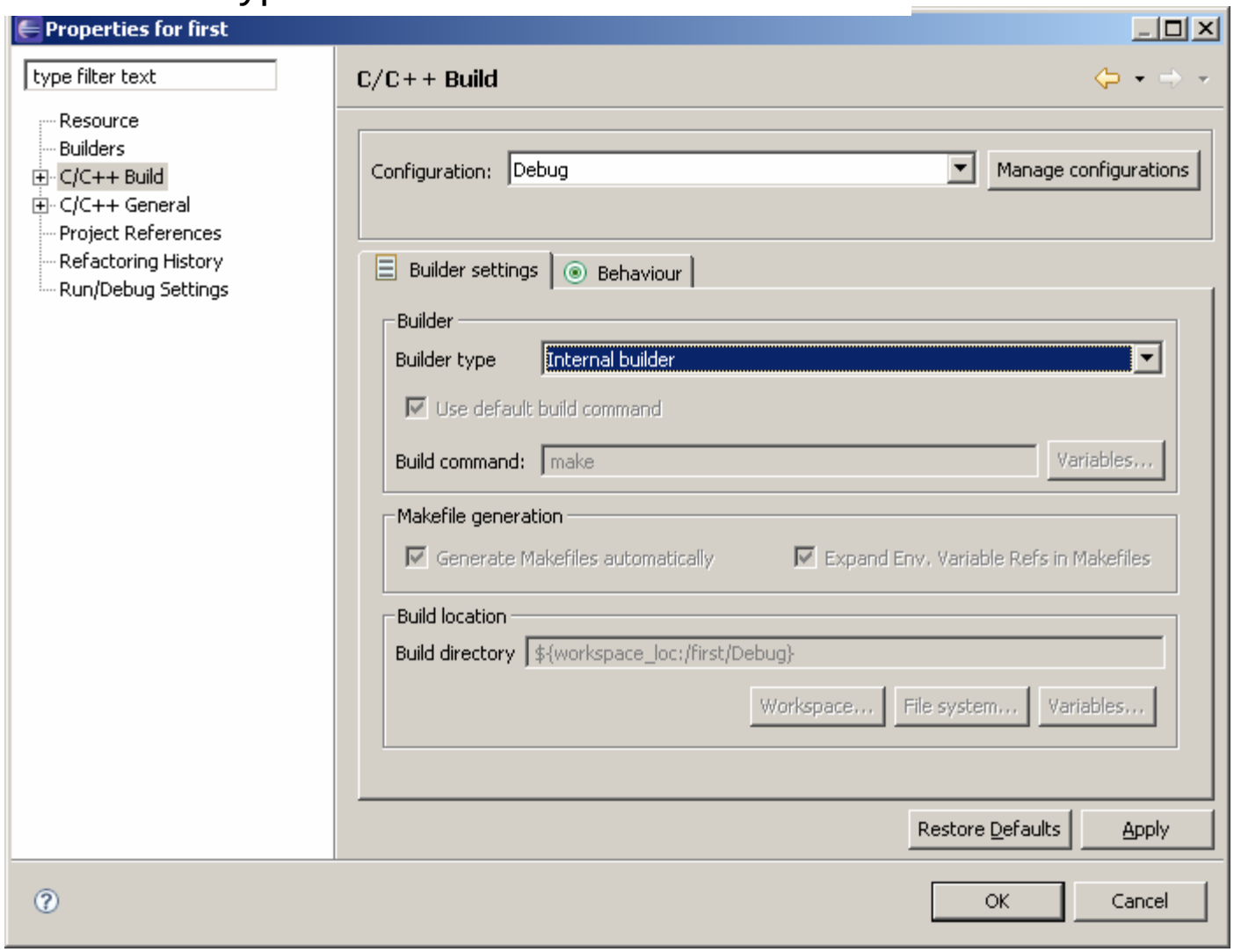
# Builder is internal

So, Builder is Internal type



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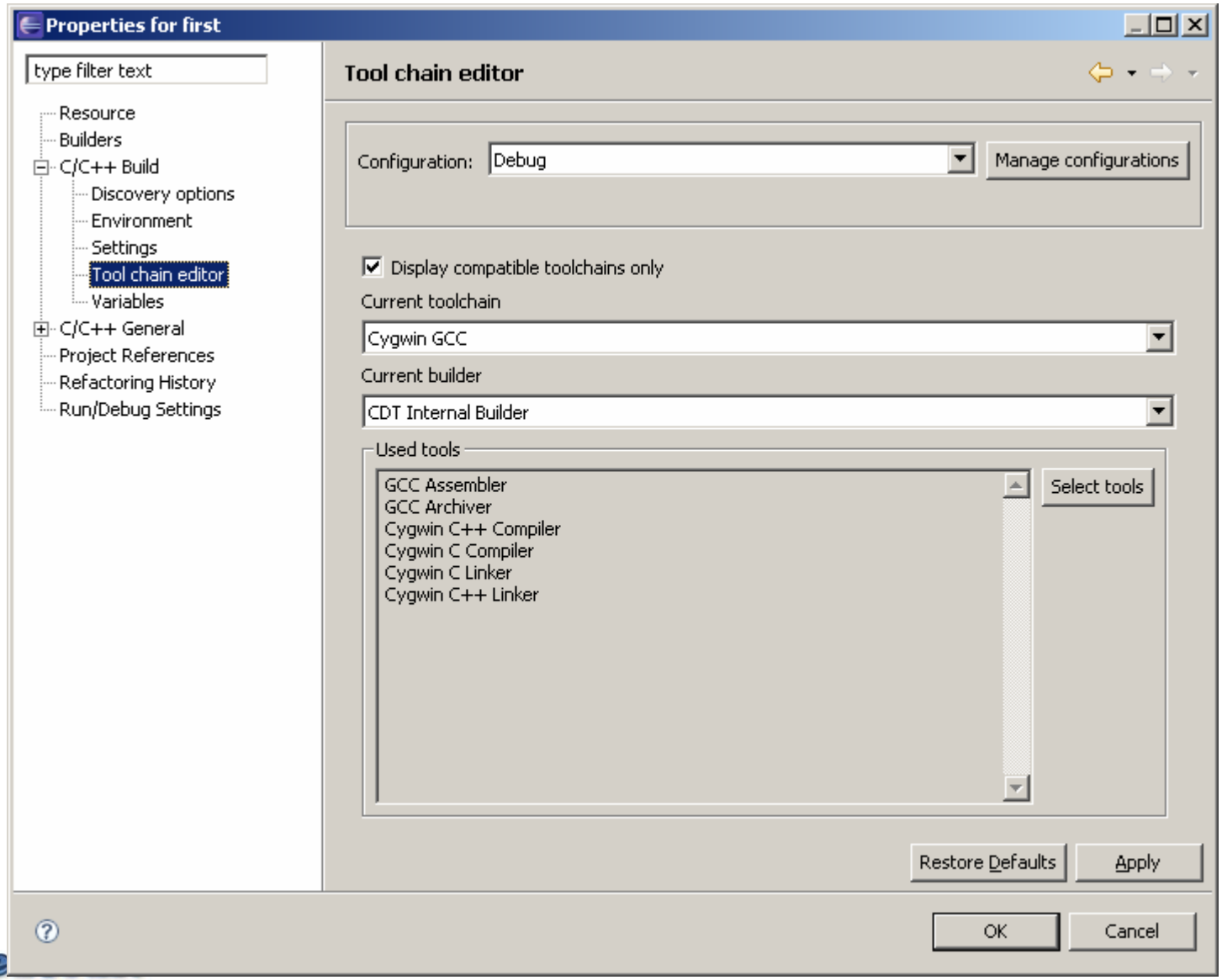
# Let us see the toolchain

Here you can see Toolchain is Cygwin GCC



# Add code in project

**Let us add this code in our file1.c file**

```
#include <stdio.h>
int main()
{
 int i,j;
 printf("Hello World\n");
 printf("Enter First Number\n");
 scanf("%d",&i);
 printf("Enter Second Number\n");
 scanf("%d",&j);
 printf("Sum = %d",i+j);
 return 0;
 }
```

# Now the screen will look like this

C/C++ - first/file1.c - Eclipse Platform

File Edit Refactor Navigate Search Run Project Window Help

C/C++ Resource

Project Explorer

first
Includes
file1.c

file1.c

```
int main()
{
 int i,j;
 printf("Hello World\n");
 printf("Enter First Number\n");
 scanf("%d",&i);
 printf("Enter Second Number\n")
 scanf("%d",&j);
 printf("Sum = %d",i+j);
 return 0;
}
```

Outlin Make

main() : int

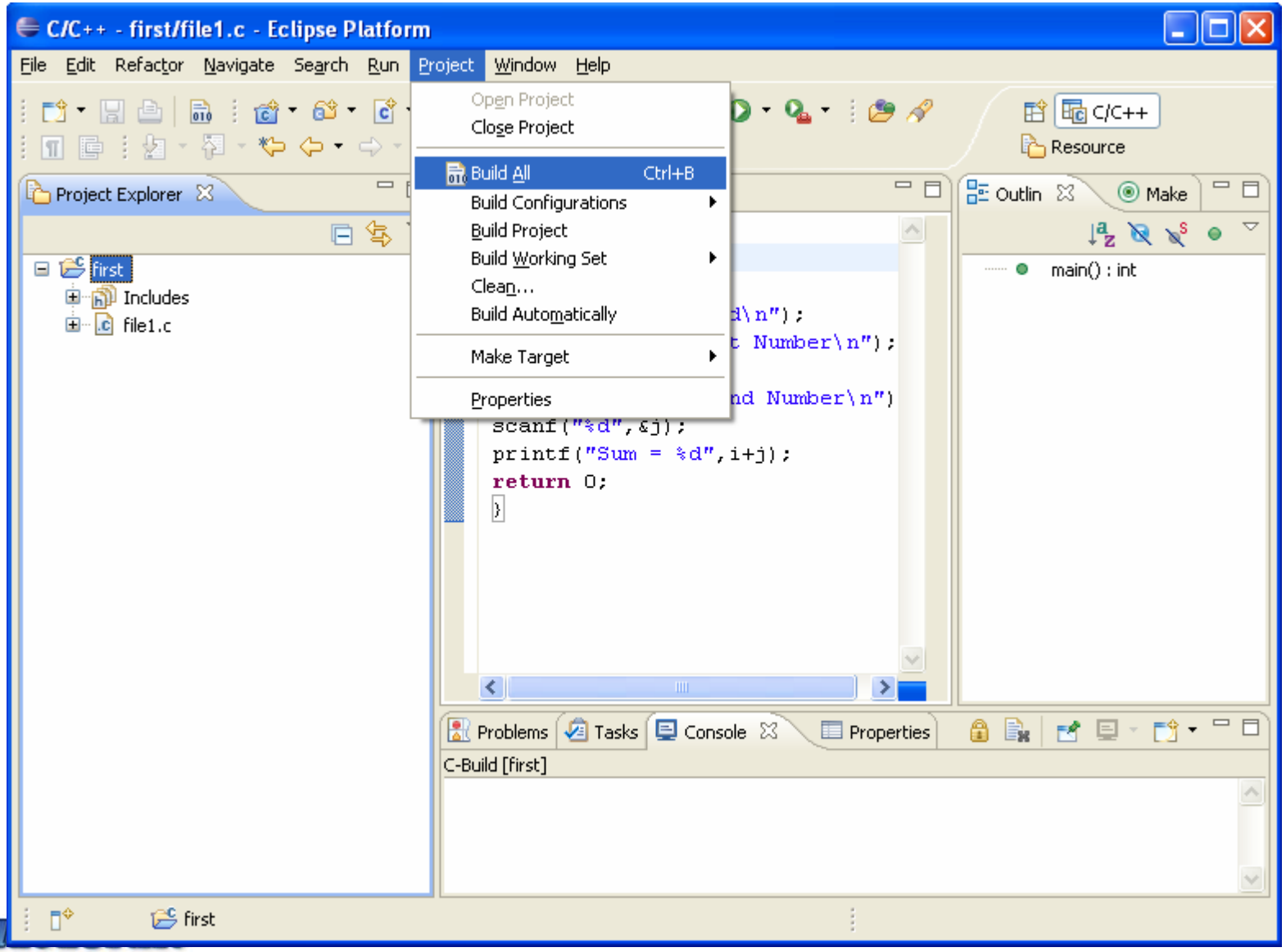
Problems Tasks Console Properties

C-Build [try2]

# Building the project

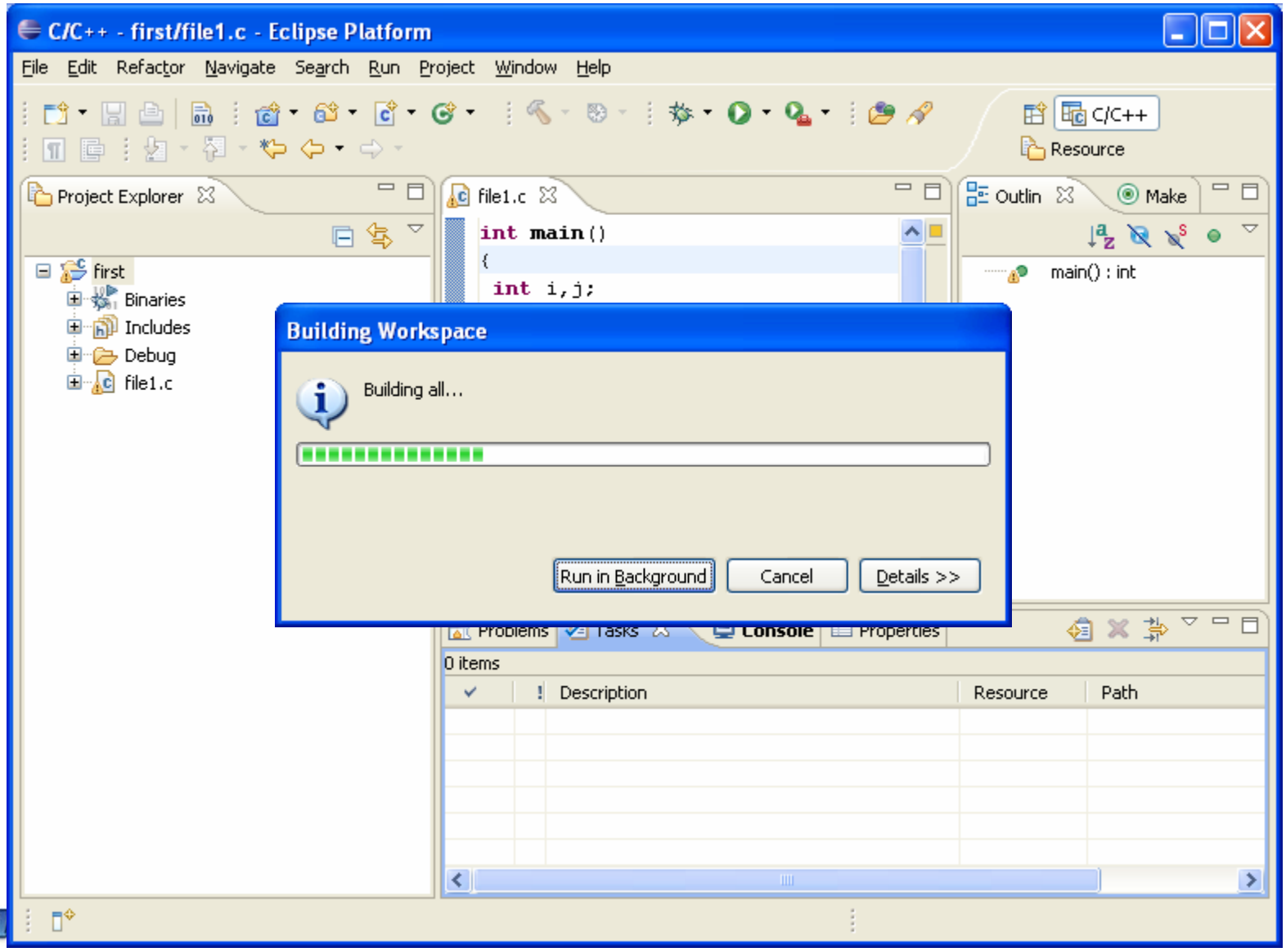
Project > Build All

Keyboard Shortcut: Ctrl + B

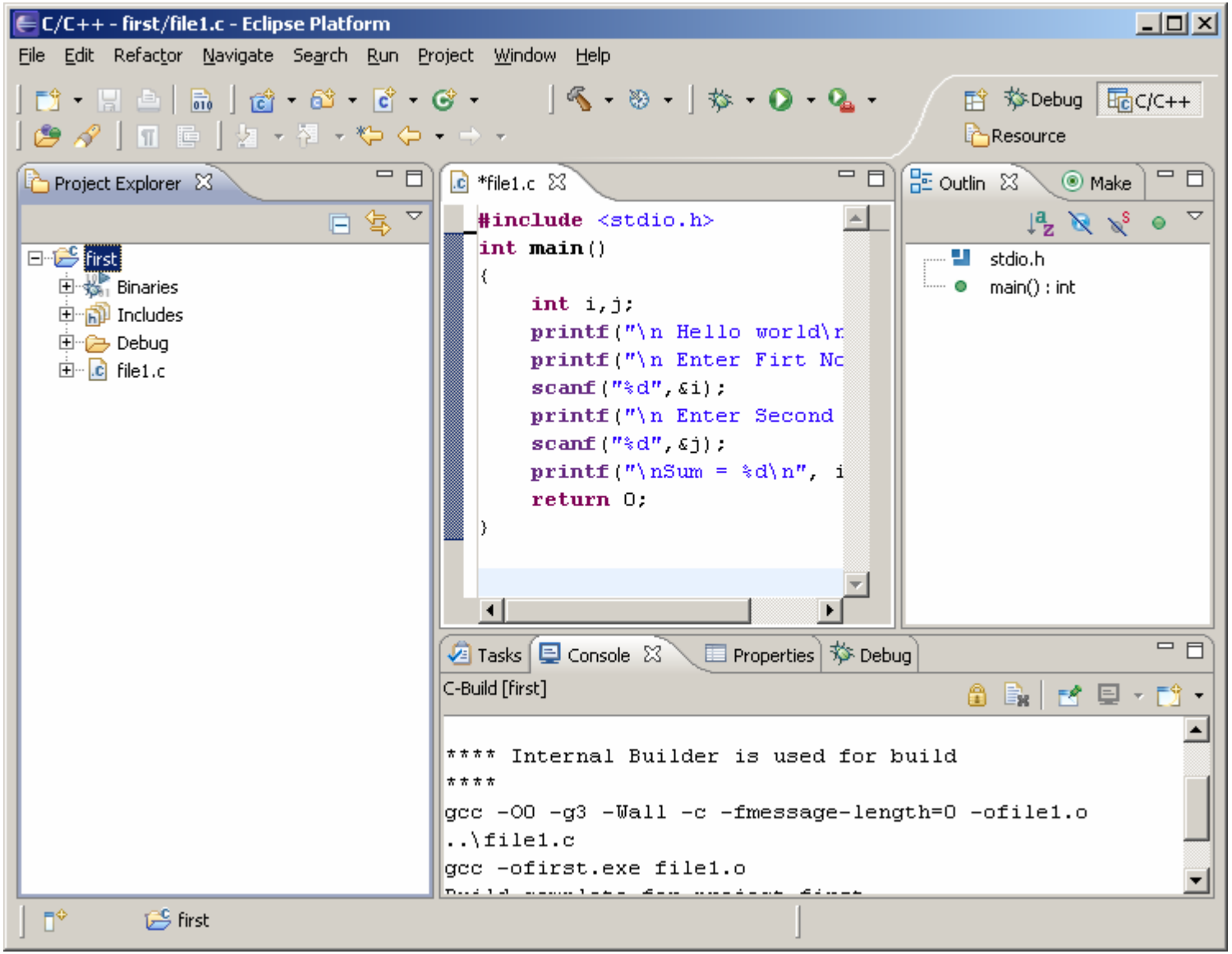


# Building the project

Some background processing will take place



# Project after building



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# Project after building

Output file

C/C++ - first/file1.c - Eclipse Platform

File Edit Refactor Navigate Search Run Project Window Help

Debug C/C++ Resource

Project Explorer

- first
  - Binaries
    - first.exe - [x86/le]
  - Includes
  - Debug
  - file1.c

*file1.c

```
#include <stdio.h>
int main()
{
    int i,j;
    printf("\n Hello world\n");
    printf("\n Enter Firt No\n");
    scanf("%d",&i);
    printf("\n Enter Second No\n");
    scanf("%d",&j);
    printf("\nSum = %d\n", i+j);
    return 0;
}
```

stdio.h
main() : int

Tasks Console Properties Debug

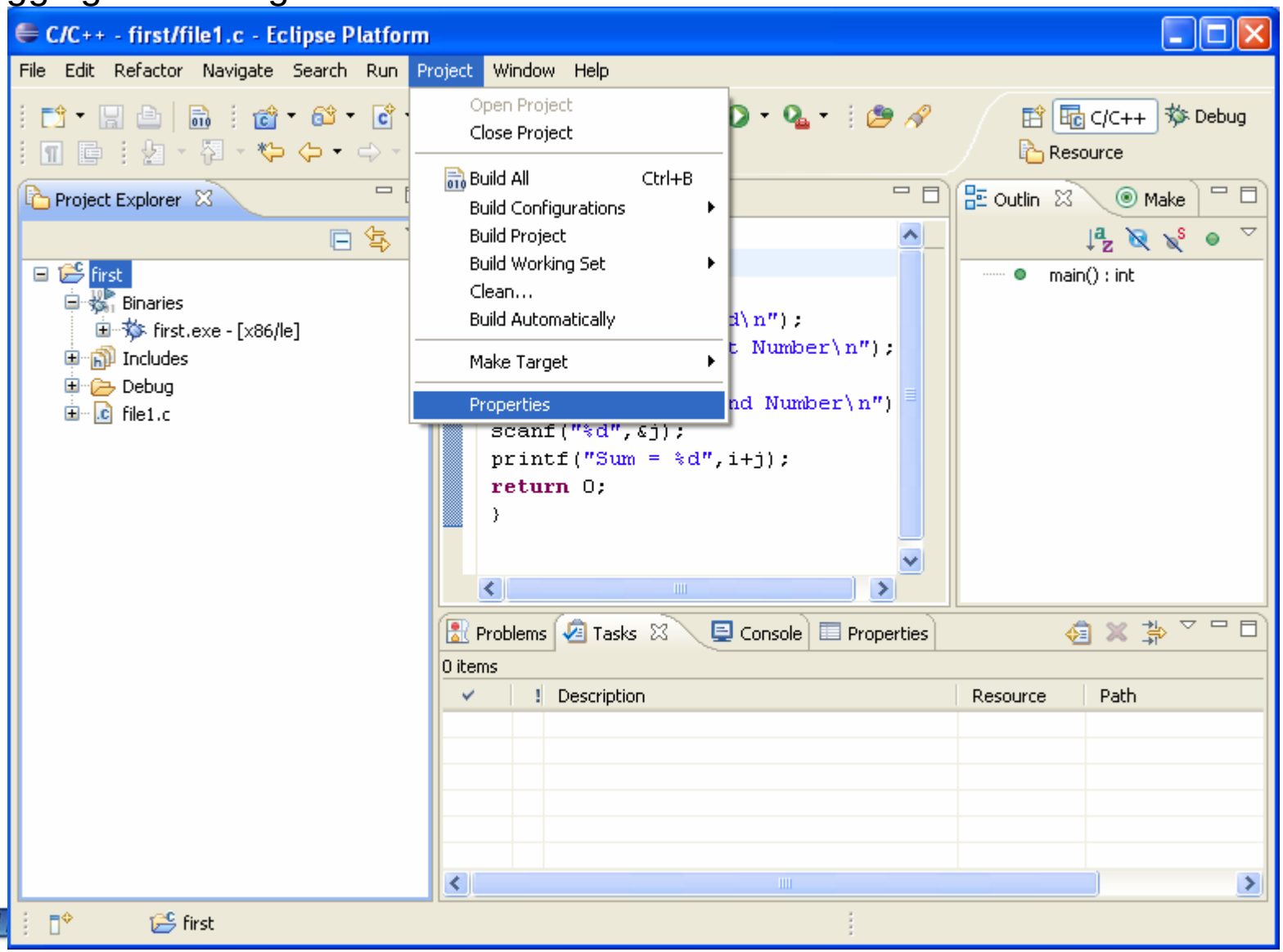
C-Build [first]

```
**** Internal Builder is used for build
****
gcc -O0 -g3 -Wall -c -fmessage-length=0 -ofile1.o
..\file1.c
gcc -ofirst.exe file1.o
```

first

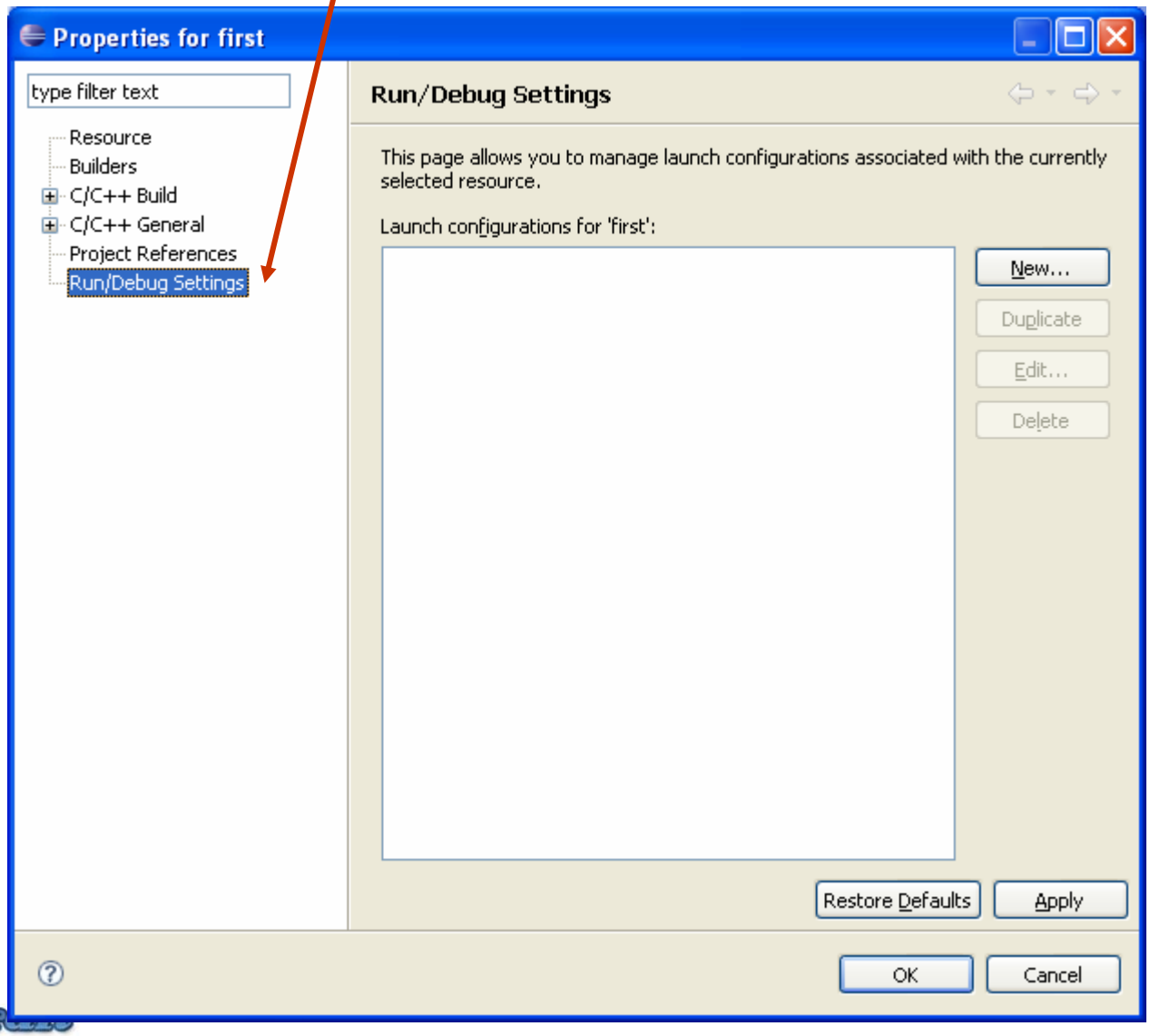
# Let’s do Debugging/Run the program

First we have to choose debugger : Its time to choose GNU debugger for debugging or running our code



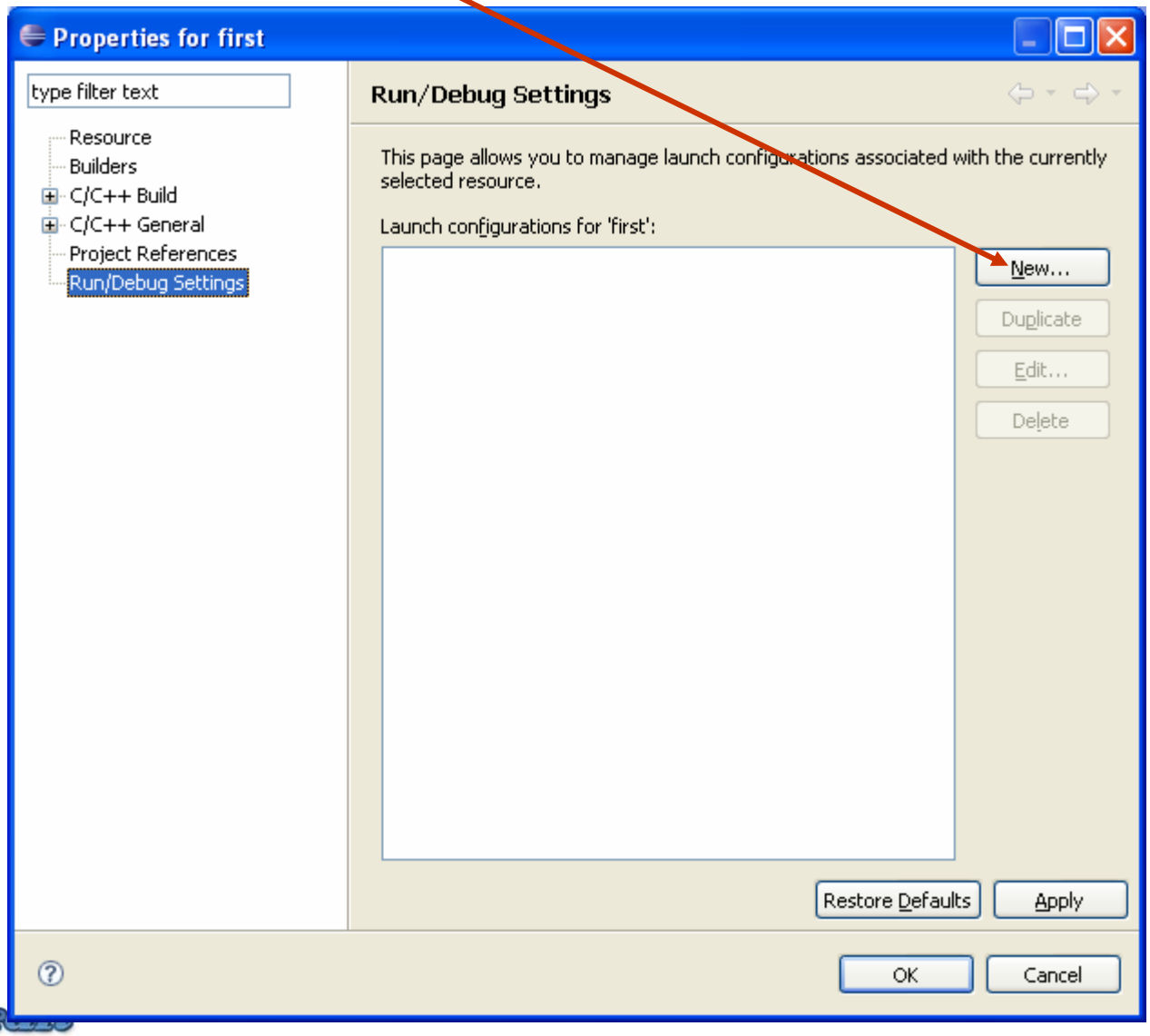
# Debug setting

Choose Run/Debug Settings



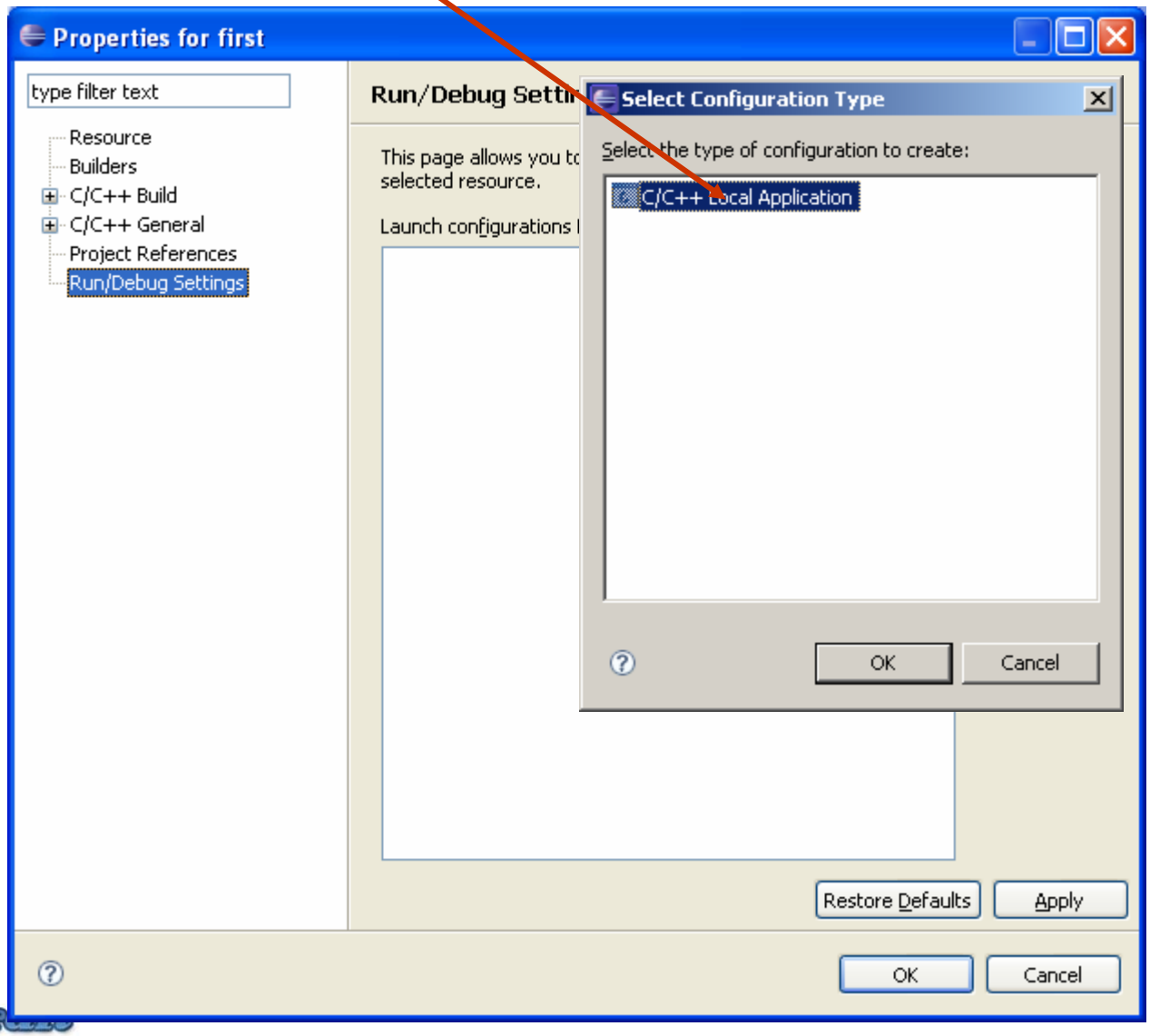
# Debug setting

Create a new configuration



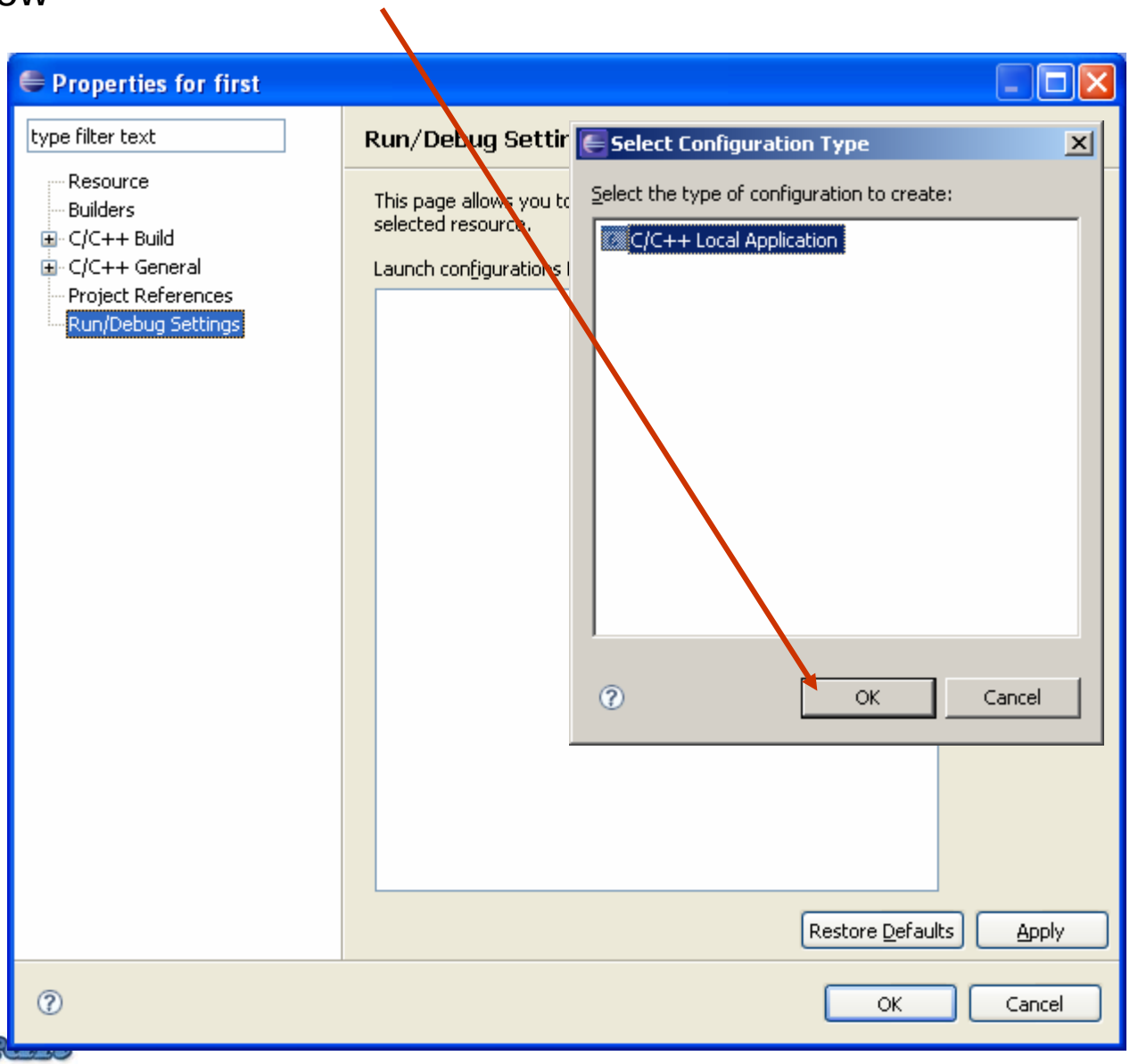
# Debug setting

Select configuration type as C/C++ Local Configuration Type



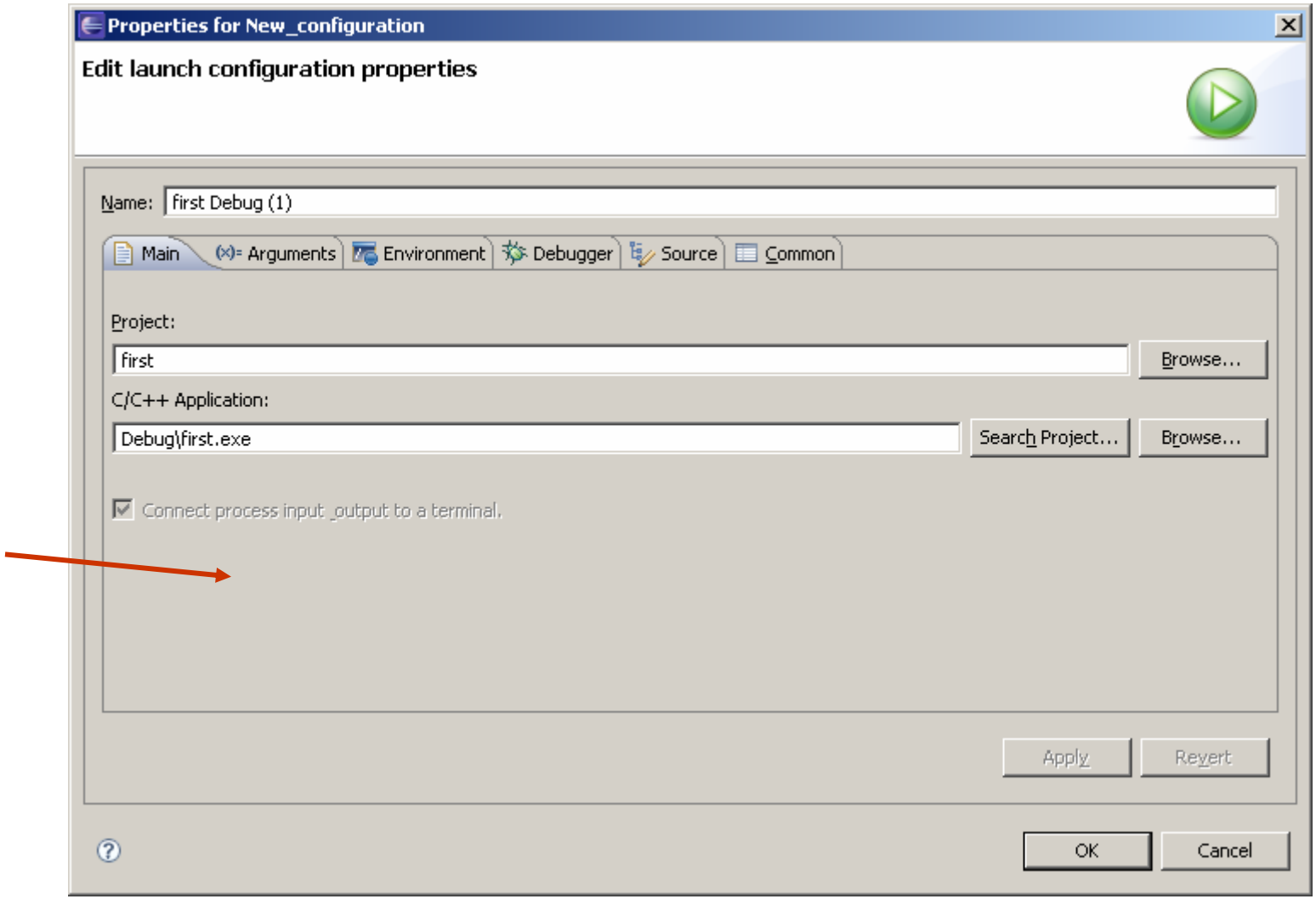
# Debug setting

Press Ok now



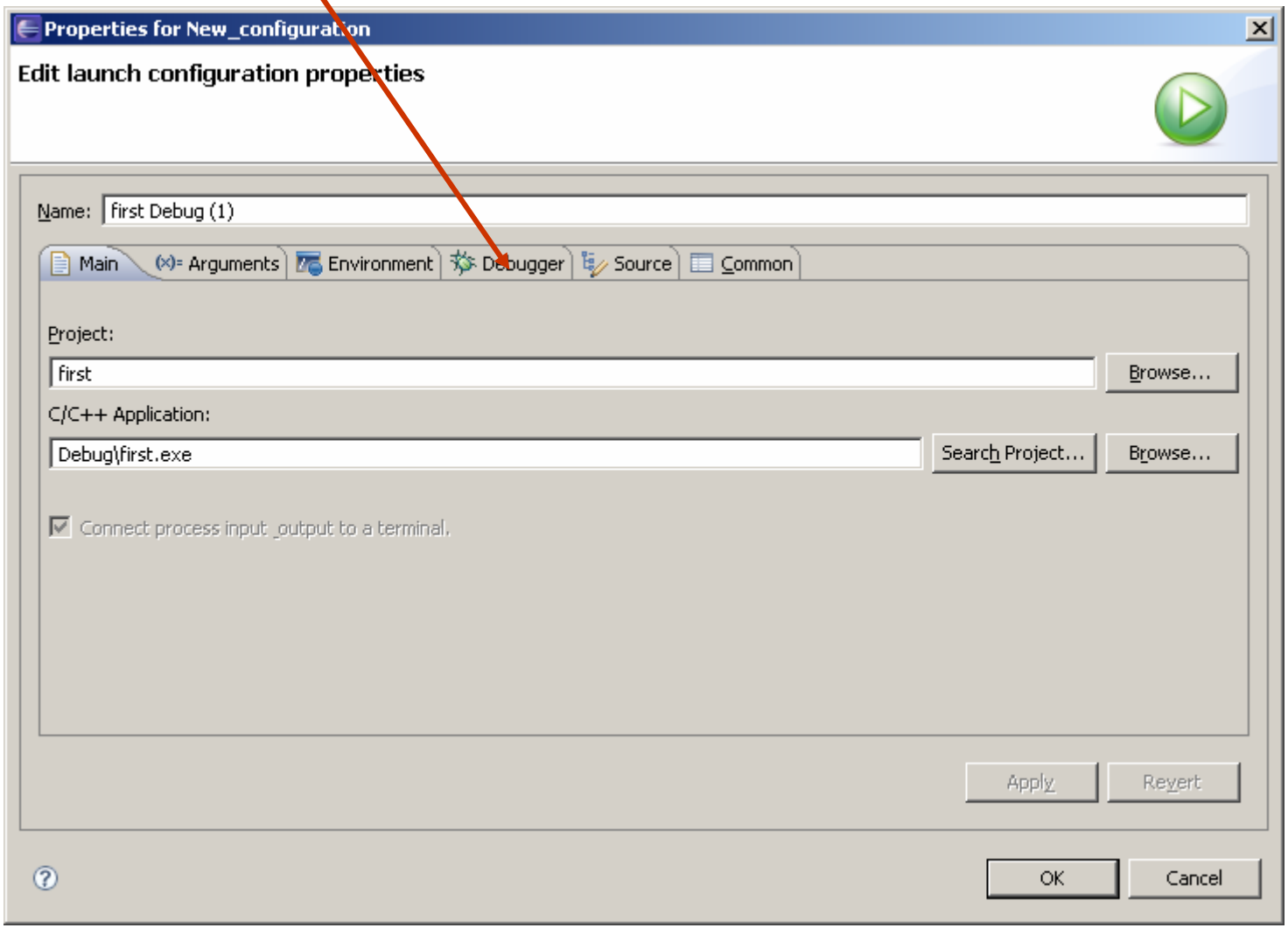
# Properties of new configuration

Now properties of new configuration will open



# Properties of new configuration

Now go to Debugger tab



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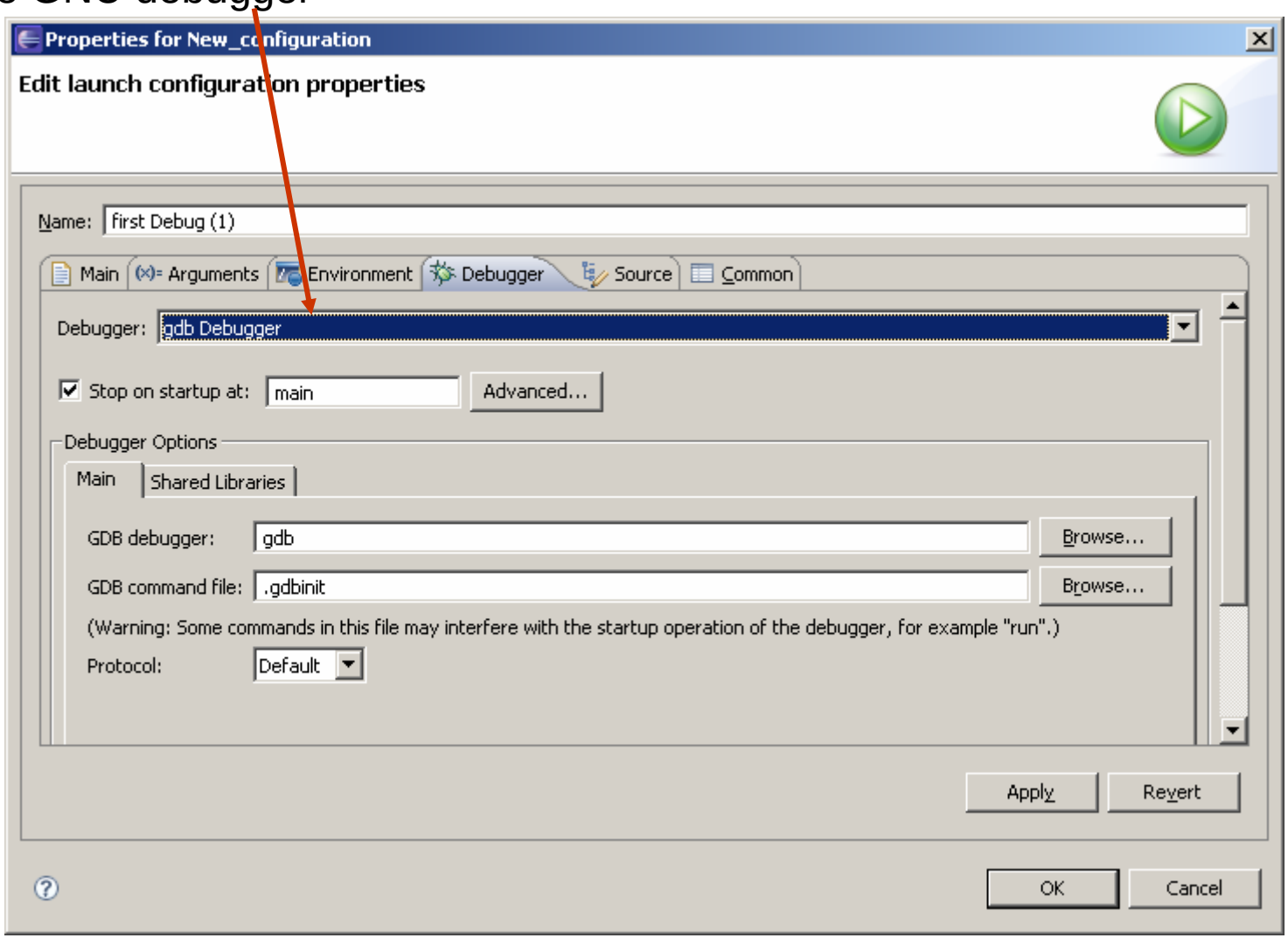
# Choose debugger

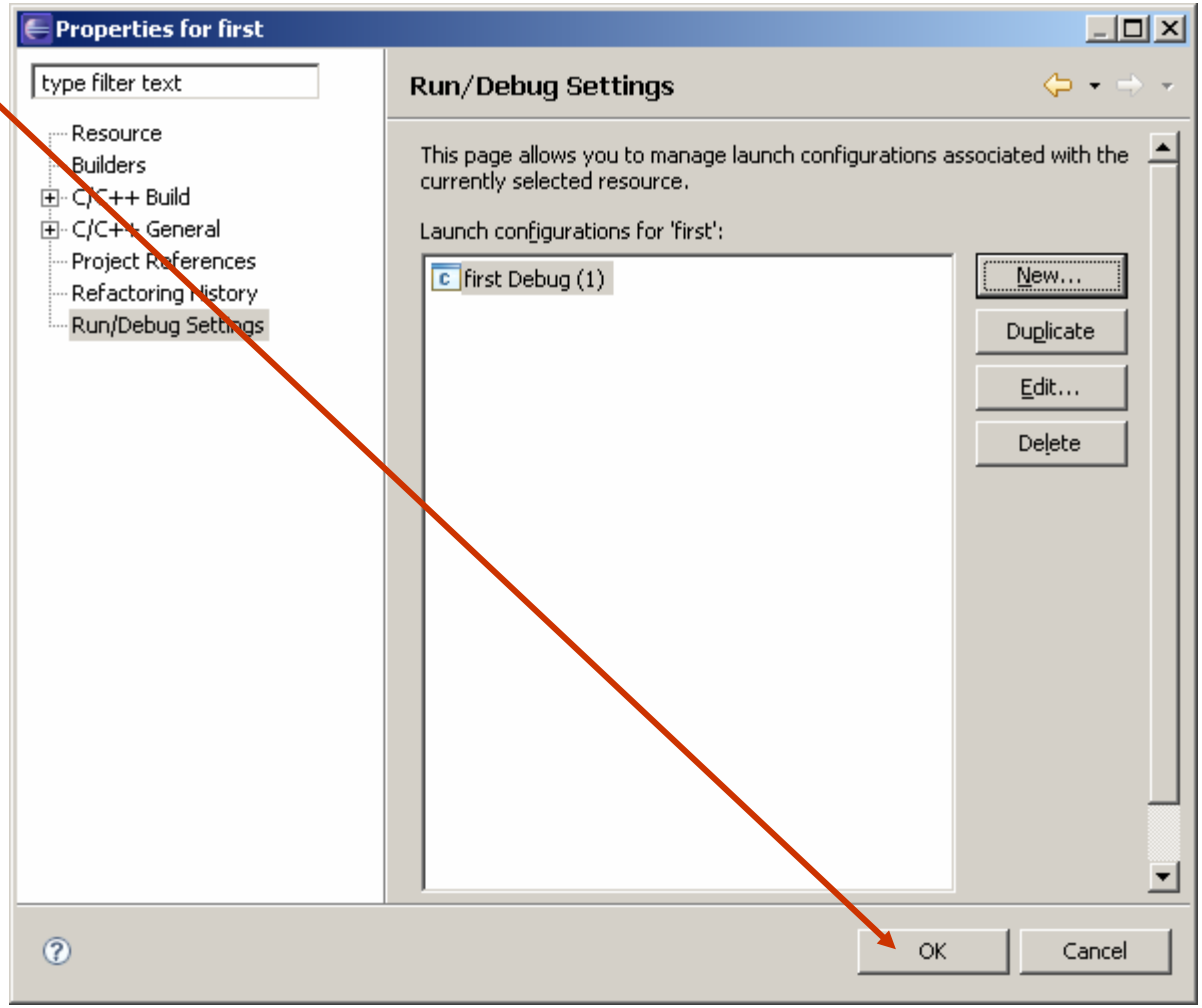
Choose GNU debugger




Press Ok

# Properties of new configuration completed

Press ok



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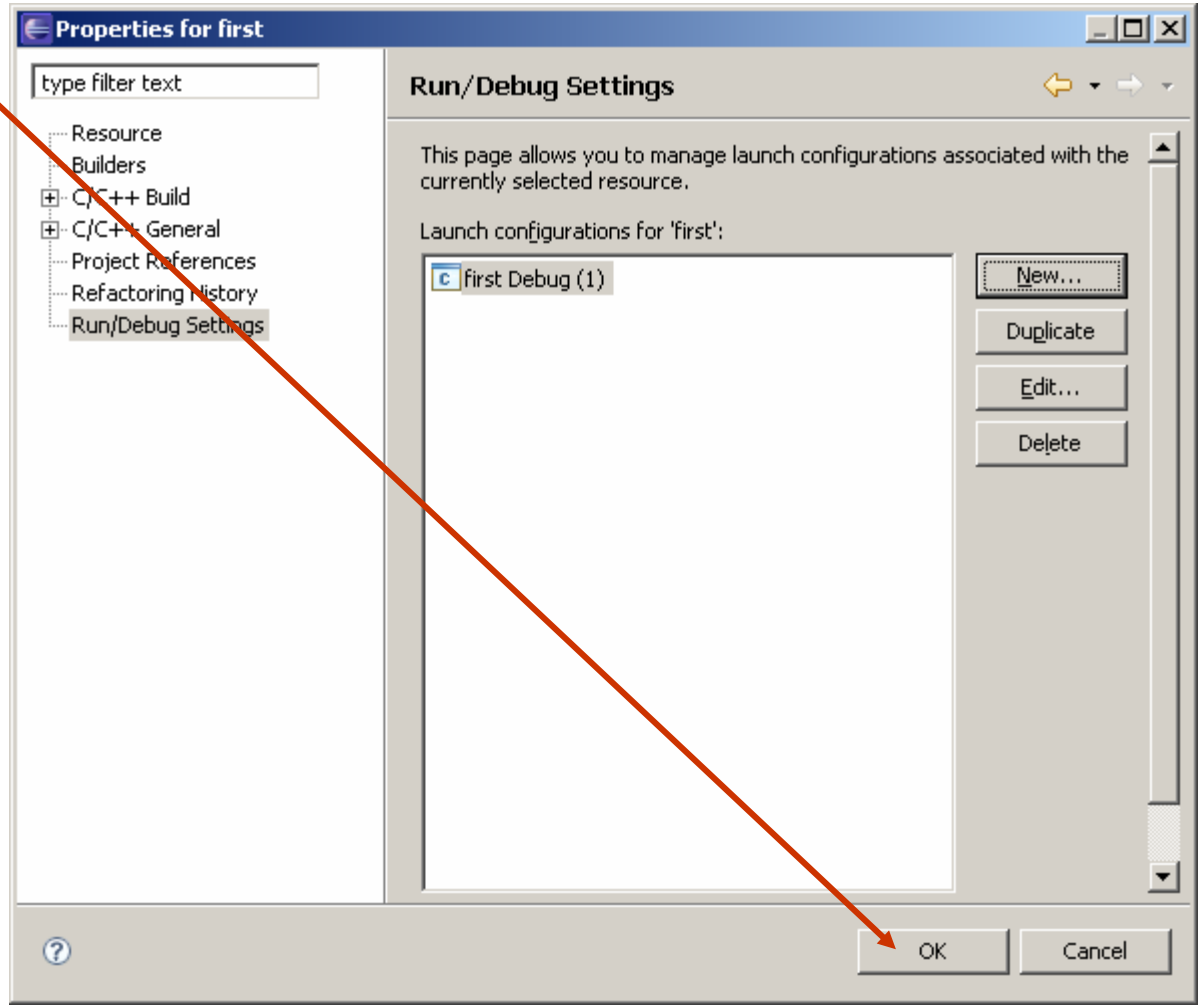
# Properties of new configuration completed

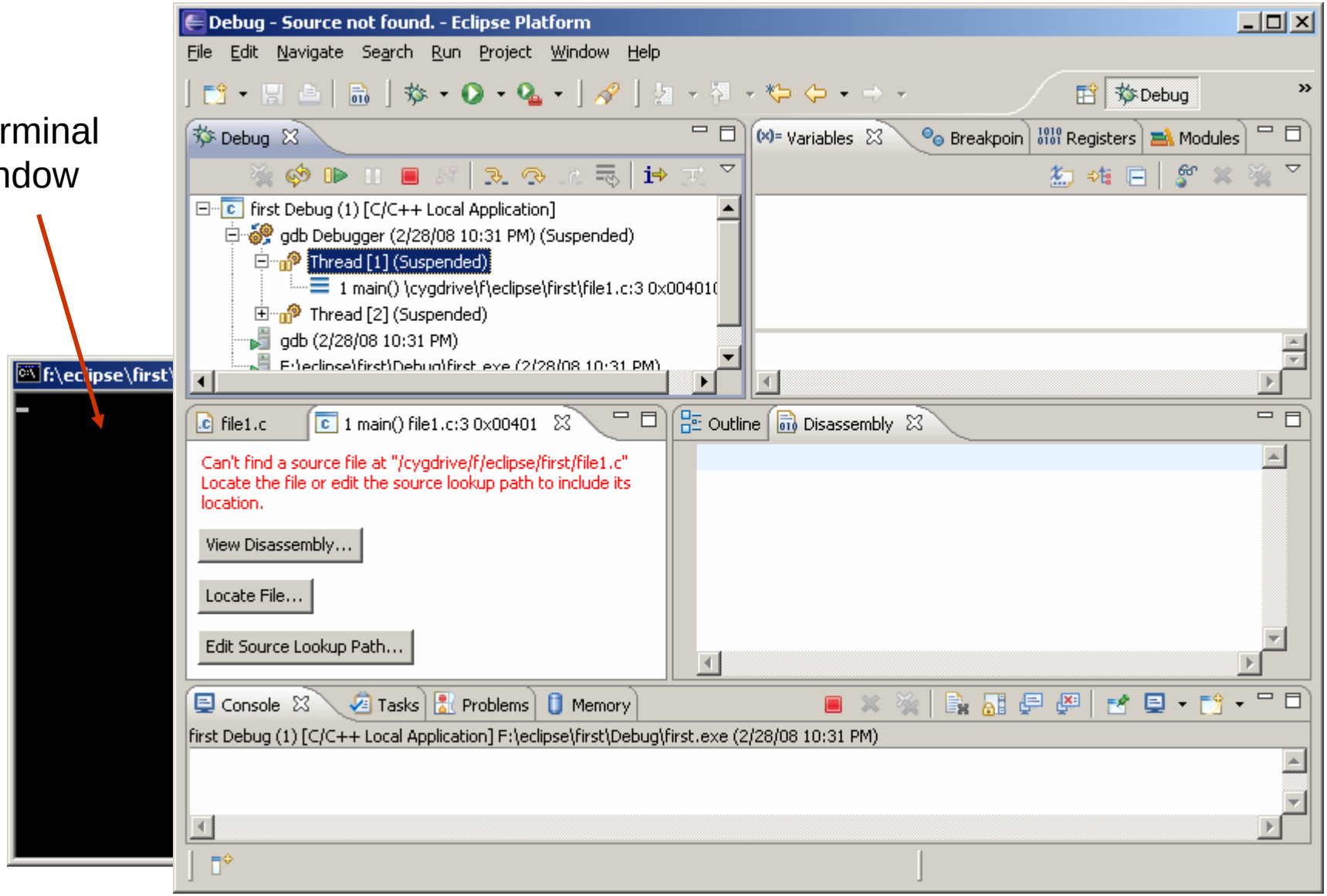
Press ok




Press Ok

# Different Debugger windows

Terminal window



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# Different Debugger windows

Terminal window

Debug - Source not found. - Eclipse Platform

File Edit Navigate Search Run Project Window Help

Debug

Debug

first Debug (1) [C/C++ Local Application]
gdb Debugger (2/28/08 10:31 PM) (Suspended)
Thread [1] (Suspended)
1 main() \cygdrive\f\eclipse\first\file1.c:3 0x00401(
Thread [2] (Suspended)
gdb (2/28/08 10:31 PM)
F:\eclipse\first\Debug\first.exe (2/28/08 10:31 PM)

Variables | Breakpoin | Registers | Modules

file1.c | 1 main() file1.c:3 0x00401

Can't find a source file at "/cygdrive/f/eclipse/first/file1.c"
Locate the file or edit the source lookup path to include its location.

View Disassembly...

Locate File...

Edit Source Lookup Path...

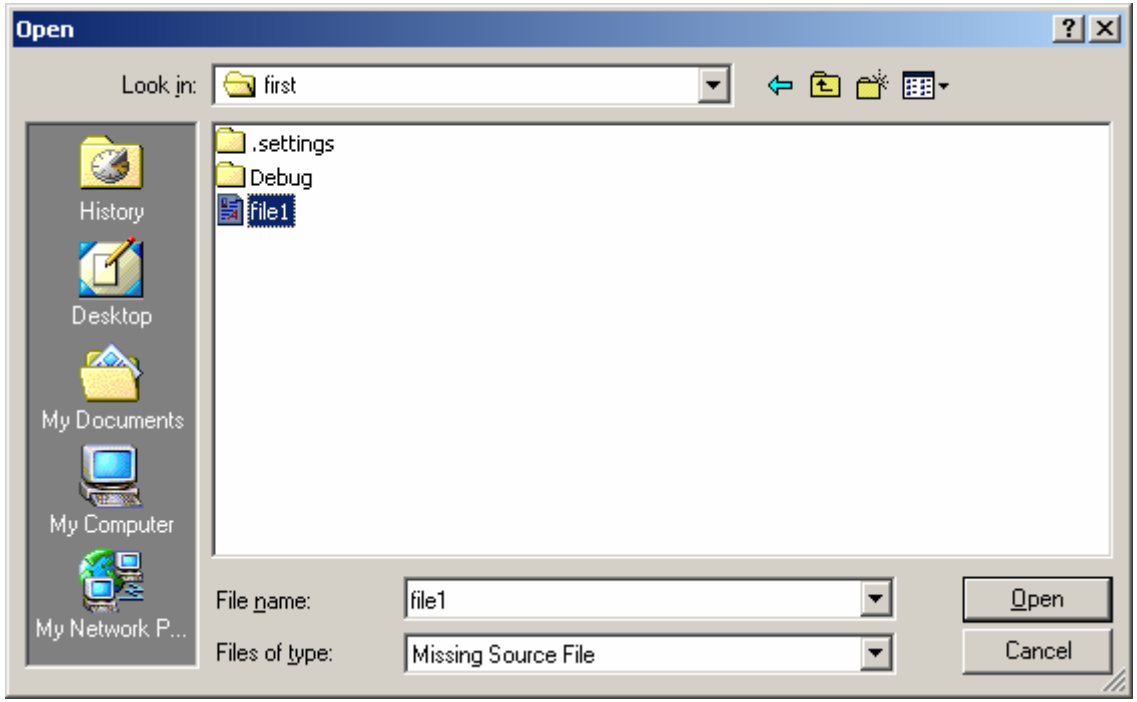
Outline | Disassembly

Console | Tasks | Problems | Memory

first Debug (1) [C/C++ Local Application] F:\eclipse\first\Debug\first.exe (2/28/08 10:31 PM)

# Choose source file

Terminal window



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# Complete debug window with source file

Debug - first/file1.c - Eclipse Platform

File Edit Refactor Navigate Search Run Project Window Help

Debug

Debug

first Debug (1) [C/C++ Local Application]
gdb Debugger (2/28/08 10:31 PM) (Suspended)
Thread [1] (Suspended)
1 main() \cygdrive\f\eclipse\first\file1.c:3 0x00401
Thread [2] (Suspended)
gdb (2/28/08 10:31 PM)

Variables | Breakpoin | Registers | Modules

file1.c

```
#include <stdio.h>
int main()
{
    int i,j;
    printf("\n Hello world\n");
    printf("\n Enter Firt No\n");
    scanf("%d",&i);
    printf("\n Enter Second No\n");
    scanf("%d",&i);
```

Outline | Disassembly

Console | Tasks | Problems | Memory

first Debug (1) [C/C++ Local Application] F:\eclipse\first\Debug\first.exe (2/28/08 10:31 PM)

Writable | Smart Insert | 3 : 1



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# Lets do single stepping and see variable

Local Variables will appear itself

Debug - first/file1.c - Eclipse Platform

File Edit Refactor Navigate Search Run Project Window Help

Debug

first Debug (1) [C/C++ Local Application]
gdb Debugger (2/28/08 10:31 PM) (Suspended)
Thread [1] (Suspended)
1 main() \cygdrive\f\eclipse\first\file1.c:5 0x0040107a
Thread [2] (Suspended)
gdb (2/28/08 10:31 PM)
F:\eclipse\first\Debug\first.exe (2/28/08 10:31 PM)

| Name | Value |
|---|---|
| i | 4199360 |
| j | 1628438944 |

file1.c

```
#include <stdio.h>
int main()
{
    int i,j;
    printf("\n Hello world\n");
    printf("\n Enter Firt No\n");
    scanf("%d",&i);
    printf("\n Enter Second No\n");
    scanf("%d",&i);
```

```
0x0040106d <main+29>:   mov
0x00401070 <main+32>:   call
0x00401075 <main+37>:   call
    int i,j;
    printf("\n Hello world\n"
0x0040107a <main+42>:   movl
0x00401081 <main+49>:   call
    printf("\n Enter Firt No\
0x00401086 <main+54>:   movl
```

Console Tasks Problems Memory

first Debug (1) [C/C++ Local Application] F:\eclipse\first\Debug\first.exe (2/28/08 10:31 PM)

# Lets do single stepping and see variable

Now after doing single stepping we will see all outputs at dos shell and variables will be updated themselves.

Debug - first/file1.c - Eclipse Platform

File Edit Refactor Navigate Search Run Project Window Help

Debug

first Debug (1) [C/C++ Local Application]
gdb Debugger (2/28/08 10:31 PM) (Suspended)
Thread [1] (Suspended)
1 main() \cygdrive\f\eclipse\first\file1.c:10 0x004010c4
Thread [2] (Suspended)
gdb (2/28/08 10:31 PM)
F:\eclipse\first\Debug\first.exe (2/28/08 10:31 PM)

| Name | Value |
|---|---|
| i | 4 |
| j | 5 |

file1.c

```
    scanf("%d",&i);
    printf("\n Enter Second No\n");
    scanf("%d",&j);
    printf("\nSum = %d\n", i+j);
    return 0;
}
```

Outline | Disassembly

```
0x004010ac <main+92>:   call
    scanf("%d",&j);
0x004010b1 <main+97>:   lea
0x004010b4 <main+100>:  mov
0x004010b8 <main+104>:  movl
0x004010bf <main+111>:  call
    printf("\nSum = %d\n", i+
0x004010c4 <main+116>:  mov
0x004010c7 <main+119>:  add
```

Console | Tasks | Problems | Memory

f:\eclipse\first\Debug\first.exe

```
Hello world

Enter Firt No
4

Enter Second No
5
```

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# Debugging completed:

Terminate Debugger

Debug - Source not found. - Eclipse Platform

File Edit Navigate Search Run Project Window Help

Debug

first Debug (1) [C/C++ Local Application]
gdb Debugger (2/28/08 10:31 PM) (Suspended)
Thread [1] (Suspended)
3 dll_crt0_1() 0x61006198
2 _cygtls::call2() 0x61004416
1 <symbol is not available> 0x00000000
Thread [2] (Suspended)

Name | Value

file1.c | 3 dll_crt0_1() 0x61006198

No source available for "dll_crt0_1()"

View Disassembly...

Outline | Disassembly

```
0x61006198 <_Z10dll_crt0_1Pv+
0x6100619b <_Z10dll_crt0_1Pv+
0x610061a0 <_Z10dll_crt0_1Pv+
0x610061a7 <_Z10dll_crt0_1Pv+
0x610061ac <_Z10dll_crt0_1Pv+
0x610061b2 <_Z10dll_crt0_1Pv+
0x610061b7 <_Z10dll_crt0_1Pv+
0x610061ba <_Z10dll_crt0_1Pv+
0x610061bd <_Z10dll_crt0_1Pv+
```

Console | Tasks | Problems | Memory

first Debug (1) [C/C++ Local Application] F:\eclipse\first\Debug\first.exe (2/28/08 10:31 PM)

# So, what actually we have done it …

1. We have installed eclipse and gcc compiler.
2. Gnu debugger also has been used.
3. we hope now you will able to use gcc and eclipse.

To be continue…