

C++ Programming

Project creation on Eclipse

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Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher

PhD from Simon Fraser University - Canada

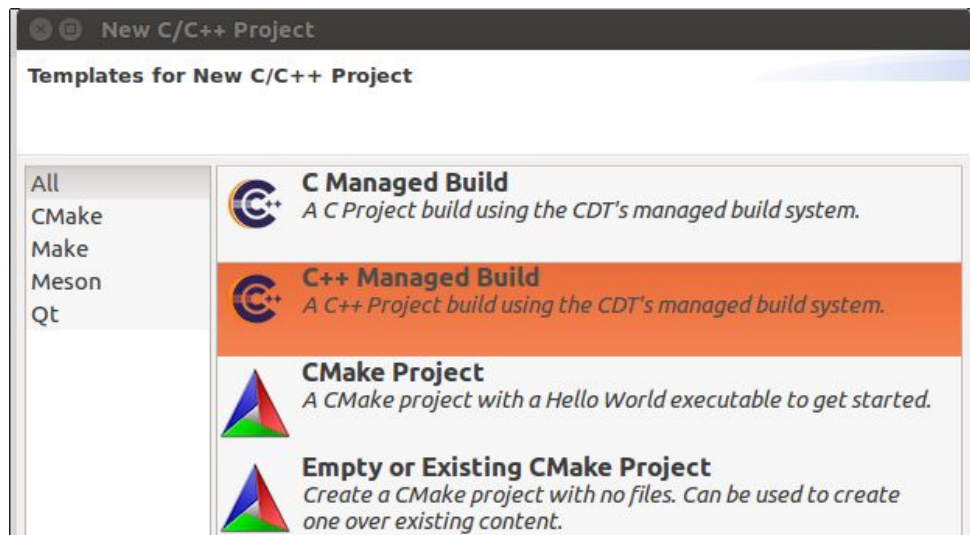
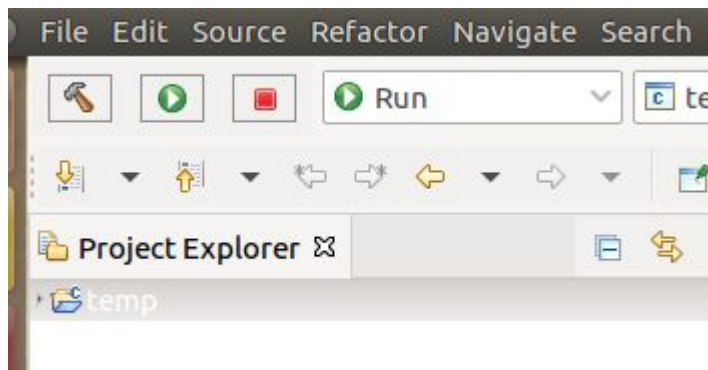
Bachelor / Msc from Cairo University - Egypt

Ex-(Software Engineer / ICPC World Finalist)



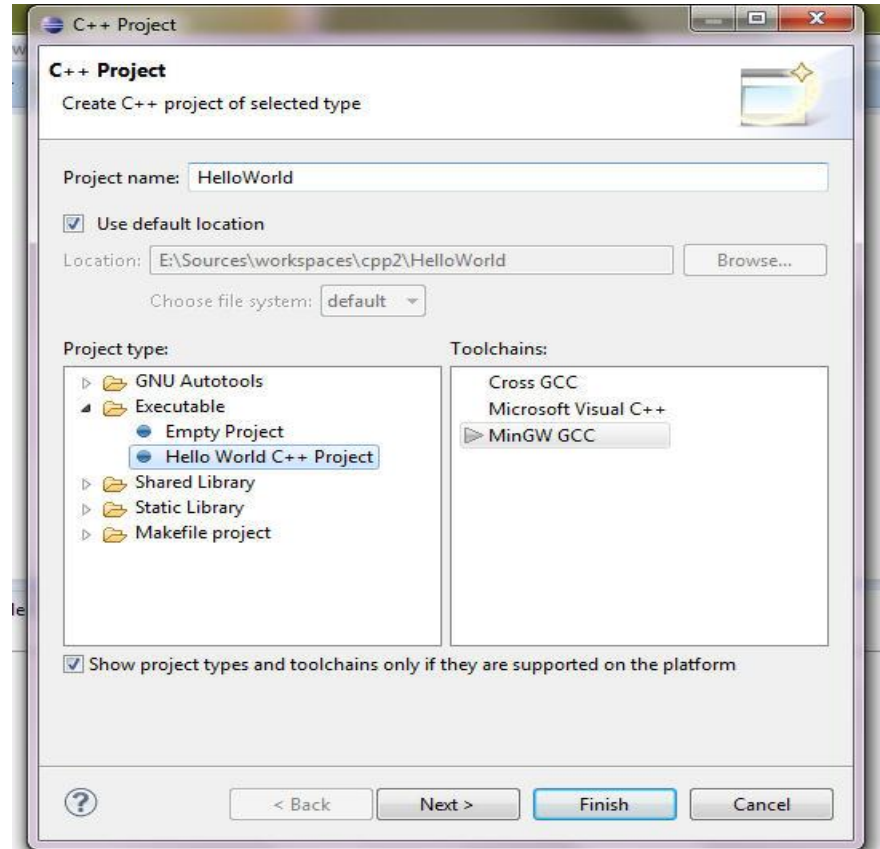
Creating a project

- From **File** menu
 - New
 - C/C++ Project



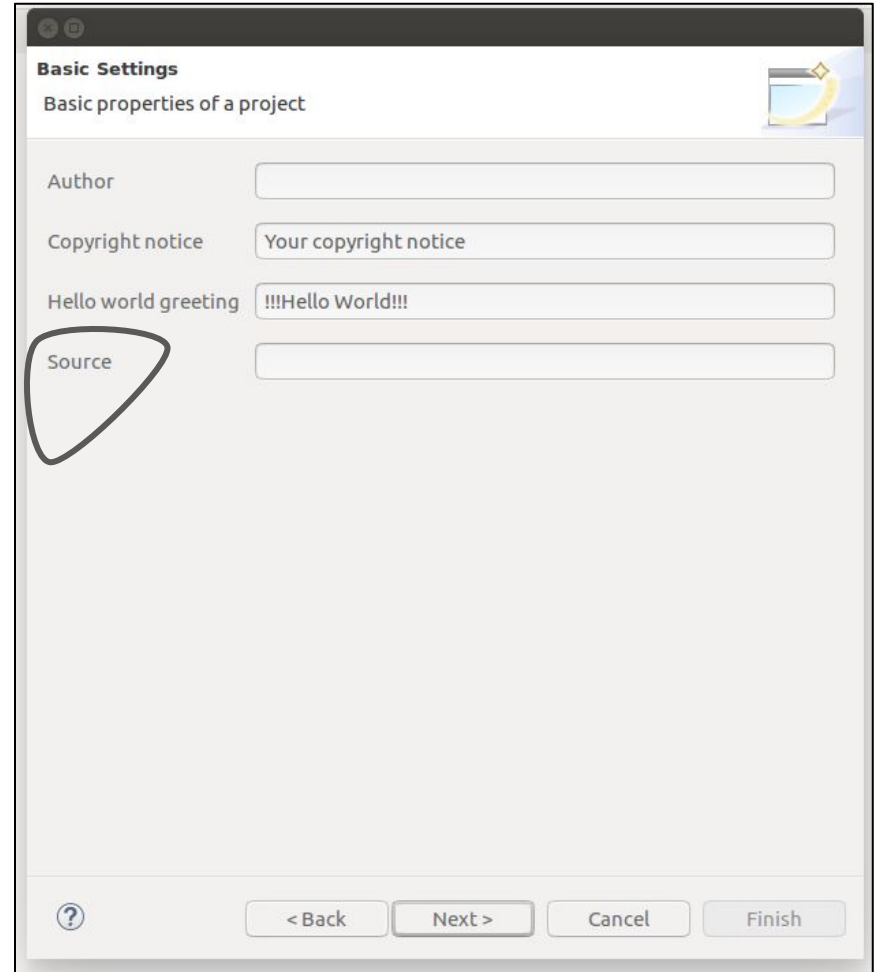
Creating a project

- In the toolchains:
- For windows
 - Select MinGw
- For linux
 - Select Cross GCC or linux GCC



Creating a project

- Remove the source
 - Make it empty



Basic Settings
Basic properties of a project

Author

Copyright notice

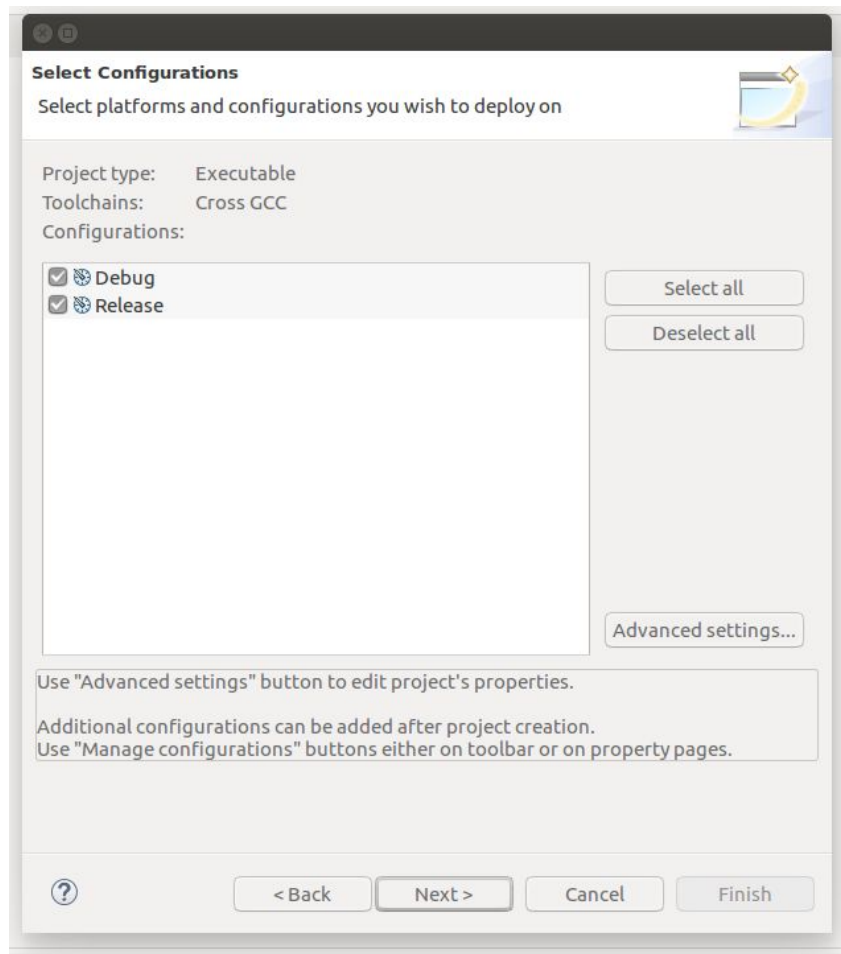
Hello world greeting

Source

? < Back Next > Cancel Finish

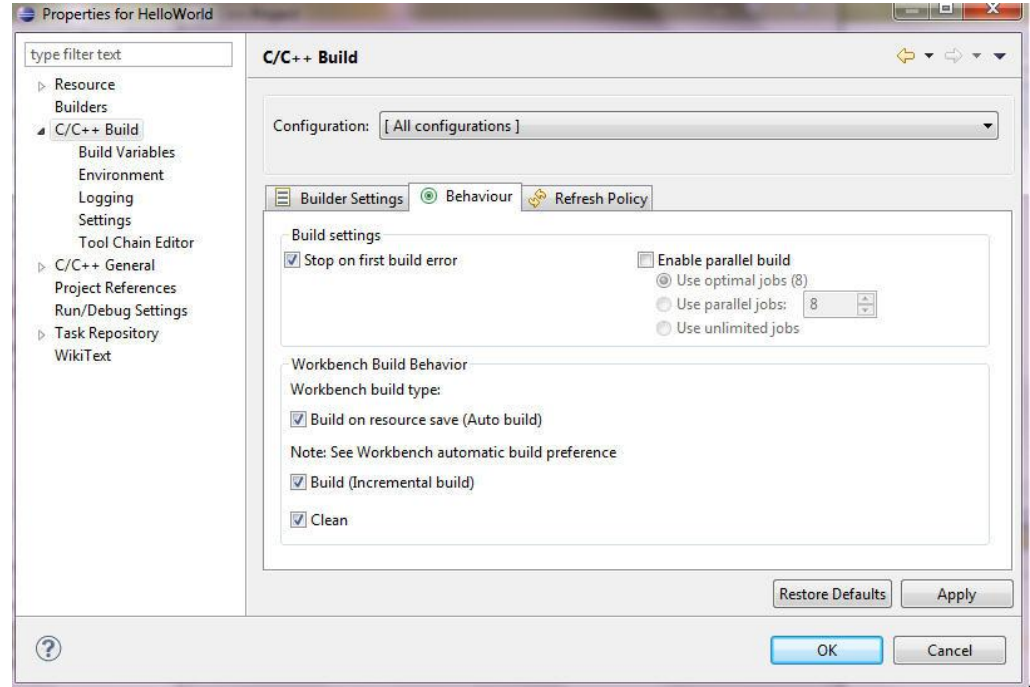
Creating a project

- Click Advanced settings



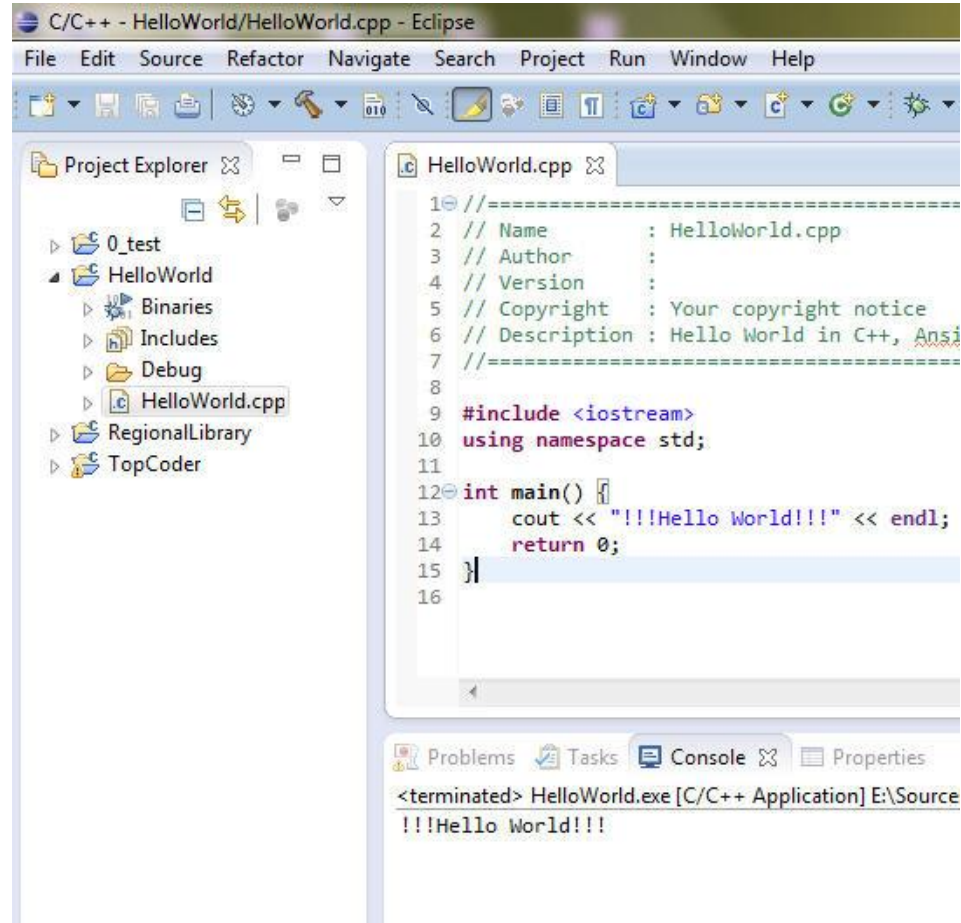
Creating a project

- Mark build on resource save
 - Auto build



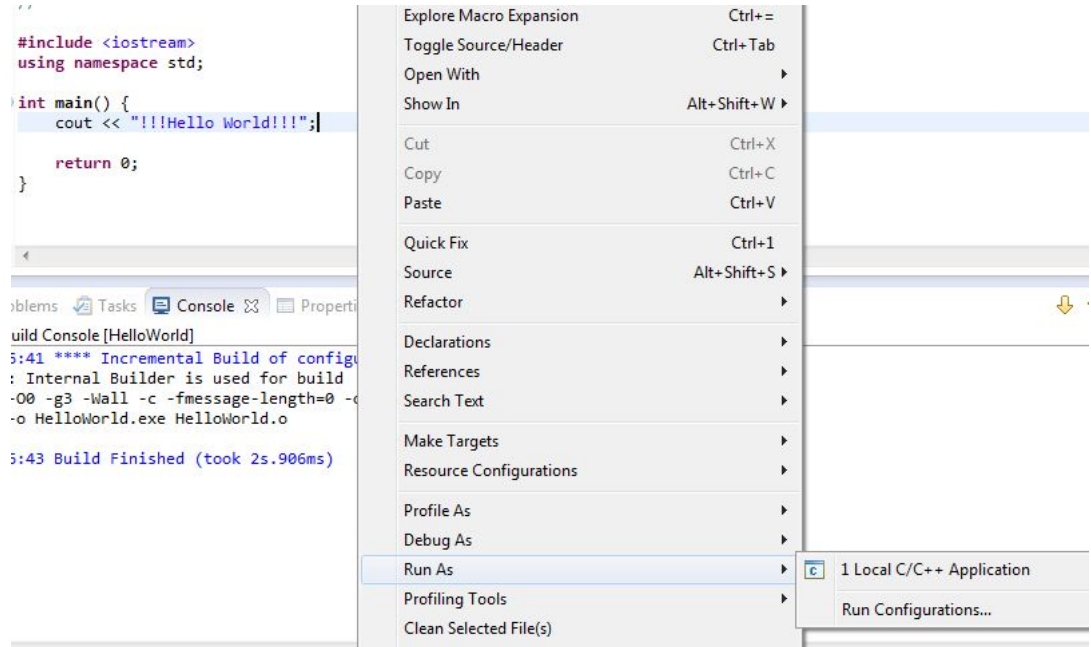
Running code

- Always remember we need 2 steps
 - Compile (or build)
 - The Run
- If run doesn't reflect code updates
 - It was not compiled
- You typically
 - Click on compile/run button
 - Or right click for menu options
 - Or use short-cut
- The auto save option we did
 - Always build, so you just run



Running code

- Right click on code
- Run As
- Local C++ Application



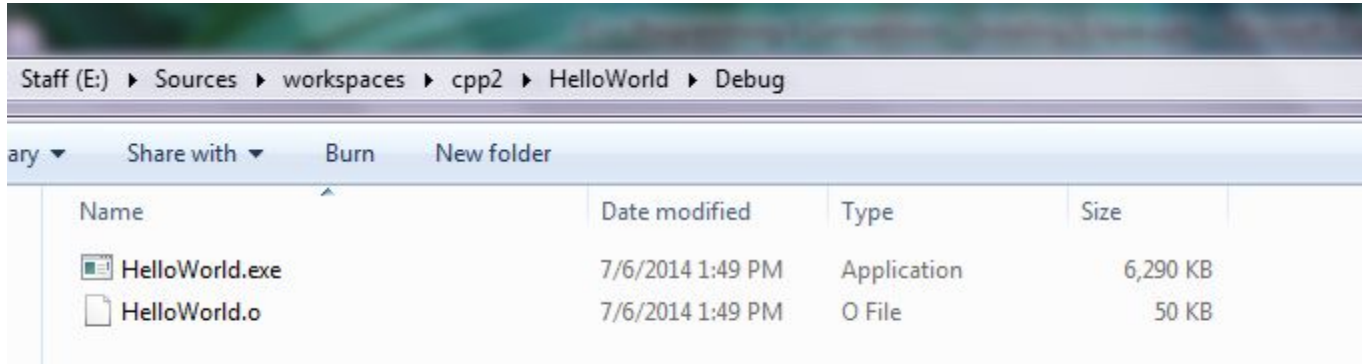
Running code



- You can also use Ctrl-F11



Optional but useful

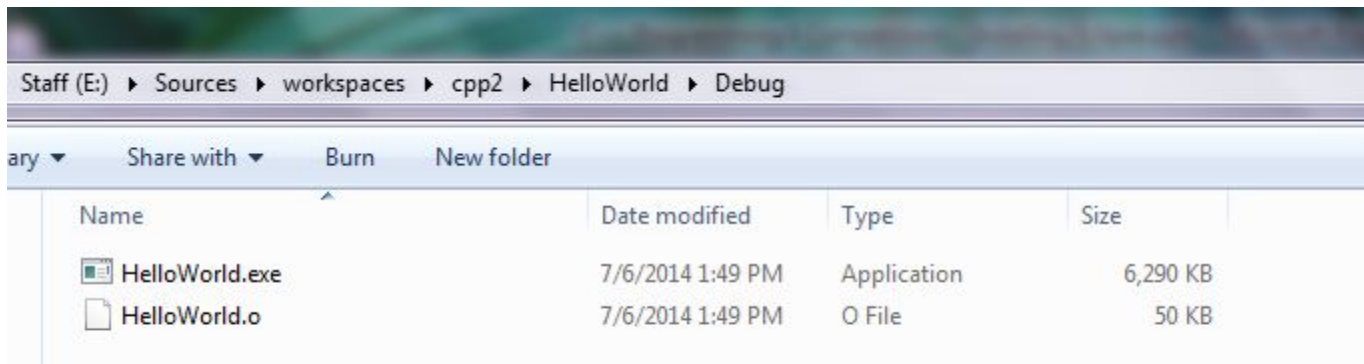
Eclipse: Object File



Staff (E:) > Sources > workspaces > cpp2 > HelloWorld > Debug				
Share with ▼ Burn New folder				
Name	Date modified	Type	Size	
 HelloWorld.exe	7/6/2014 1:49 PM	Application	6,290 KB	
 HelloWorld.o	7/6/2014 1:49 PM	O File	50 KB	



- Build Command updates this file and then the exe
- Compiler generates Object file, and linker use it to generate executable (exe)

Eclipse: Executable



Staff (E:) ▸ Sources ▸ workspaces ▸ cpp2 ▸ HelloWorld ▸ Debug

ary ▾ Share with ▾ Burn New folder


Name	Date modified	Type	Size
 HelloWorld.exe	7/6/2014 1:49 PM	Application	6,290 KB
 HelloWorld.o	7/6/2014 1:49 PM	O File	50 KB

- When you click Run button, this is what is actually run
 - If code was not compile, older exe is run!
- Always Close EXE to build/run again (hence exe is **replaced** with new one)

Eclipse: Running Program note



Eclipse: Another EXE running!!



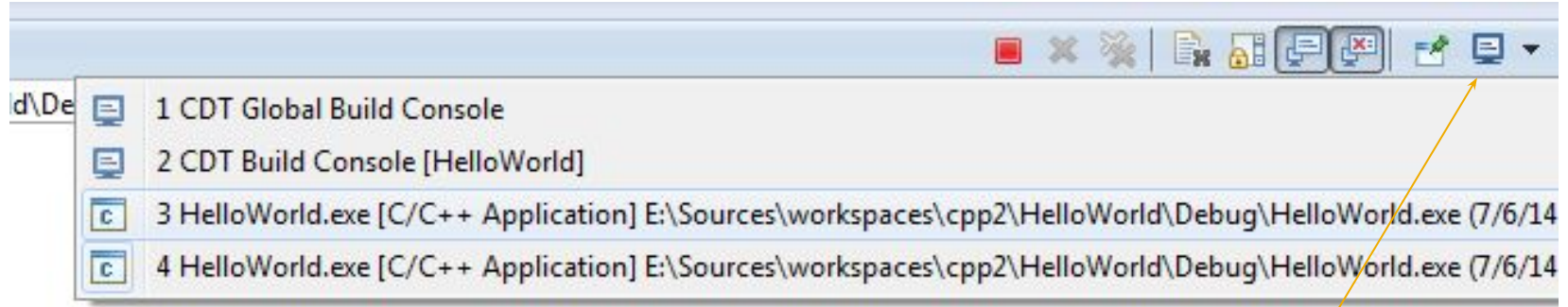
The screenshot shows the Eclipse IDE's Console window. The title bar includes 'Console' and 'Properties' tabs, along with standard window controls. The console output shows the compilation of 'HelloWorld.o'. The error message, 'cannot open output file HelloWorld.exe: Permission denied', is highlighted in blue. The error occurs during the linking step, where the linker 'ld.exe' is called to create the executable 'HelloWorld.exe'.

```
ke HelloWorld.o








shed (took 3s.505ms)

ild for HelloWorld
mental Build of configuration Debug for project HelloWorld ****
der is used for build
c -fmessage-length=0 -o HelloWorld.o "..\\HelloWorld.cpp"
xe HelloWorld.o
/gcc/x86_64-w64-mingw32/4.9.0/../../../../x86_64-w64-mingw32/bin/ld.exe: cannot open output file HelloWorld.exe: Permission denied
: ld returned 1 exit status
```

Eclipse: Running Programs



Eclipse: Problems Listing

Problems 		Tasks 	Console 	Properties 
1 error, 1 warning, 0 others				
Description		Resource		
▲  Errors (1 item)				
 cannot open output file HelloWorld.exe: Permission denied		HelloWorld		
▶  Warnings (1 item)				

Eclipse Shortcuts: Ctrl+Shift+L

Activate Editor	F12
Activate Task	Ctrl+F9
Add Block Comment	Ctrl+Shift+/
Add Include	Ctrl+Shift+N
Backward History	Alt+ Left
Build All	Ctrl+B
Close	Ctrl+F4
Close All	Ctrl+Shift+F4
Collapse	Ctrl+Numpad_Subtract
Collapse All	Ctrl+Shift+Numpad_Divide
Comment/Uncomment	Ctrl+/
Commit...	Ctrl+#
Content Assist	Ctrl+Space
Context Information	Ctrl+Shift+Space
Copy	Ctrl+Insert
Copy Lines	Ctrl+Alt+Down
Cut	Shift+Delete
Deactivate Task	Ctrl+Shift+F9
Debug	F11

Press "Ctrl+Shift+L" to open the preference page

Eclipse Code Format: Ctrl+Shift+F

```
#include <iostream>
using namespace std;

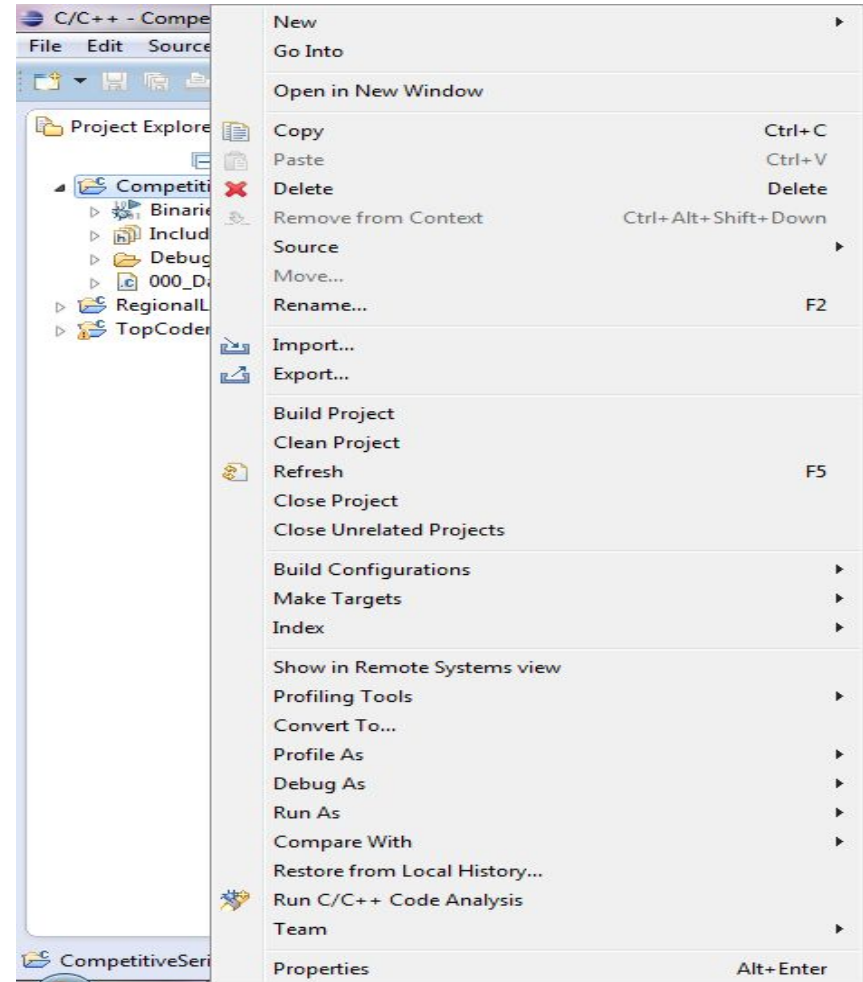
int main() {
    cout << "!!!Hello Worlstdsdd!!!";
    int y = 6;
    return 0;
}
```



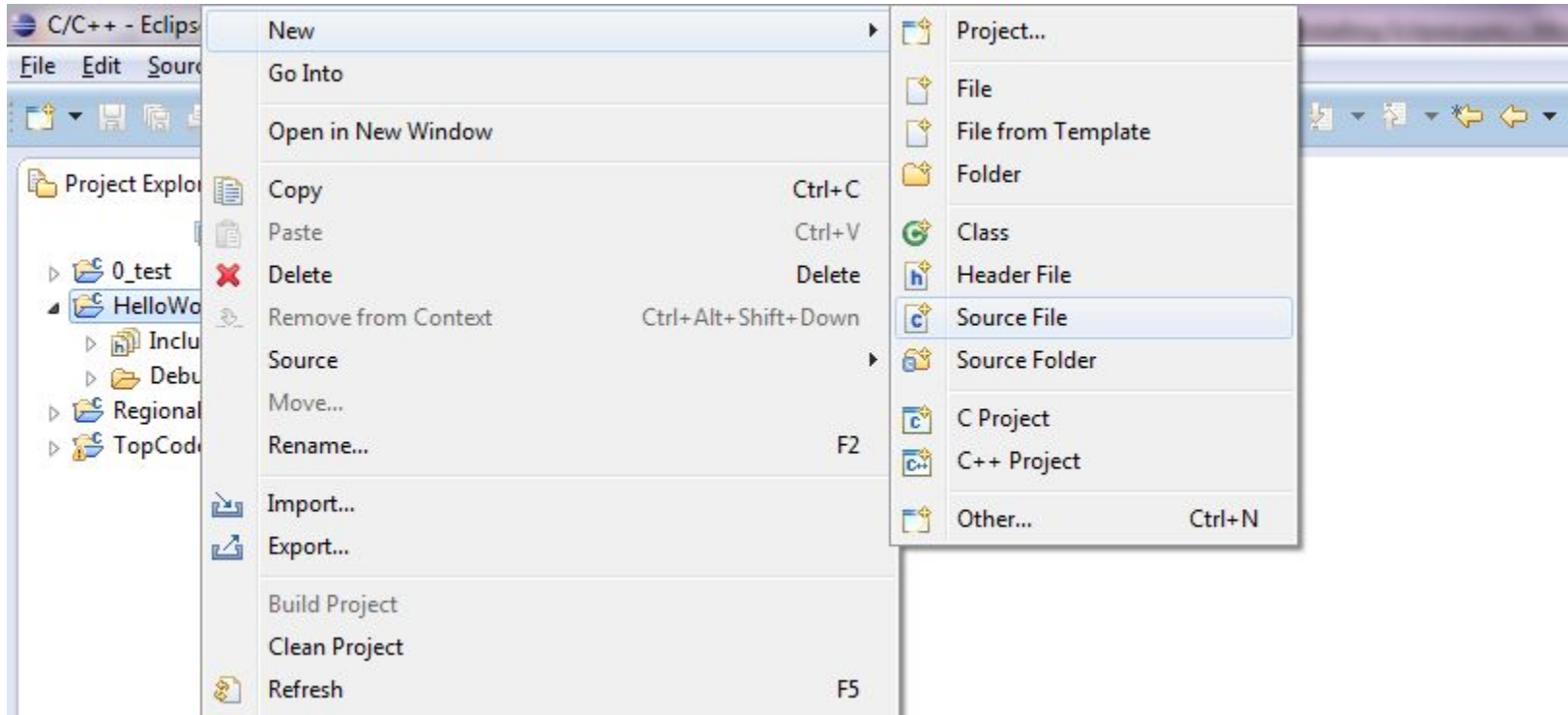
```
int main() {
    cout << "!!!Hello Worlstdsdd!!!";
    int y = 6;
    return 0;
}
```

Eclipse: Project Menu

- **Clean** Project helps if program has compile errors already resolved
- **Close** Project closes it Close unrelated closes other projects
- **Restore** from local history helps If you need an old code
- **Properties** gets project path and settings



Eclipse: Create New CPP file



Eclipse: Create New CPP file

- Eclipse doesn't allow several CPP files, each with main function
- But I want to add more c++ files?
- 2 ways
 - The easy way, just rename the old file. E.g. hello.cpp \Rightarrow hello.cpp_
 - Right click on hello.cpp
 - Resource Configuration
 - Exclude from build
 - Then select All (Debug/Release)

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”