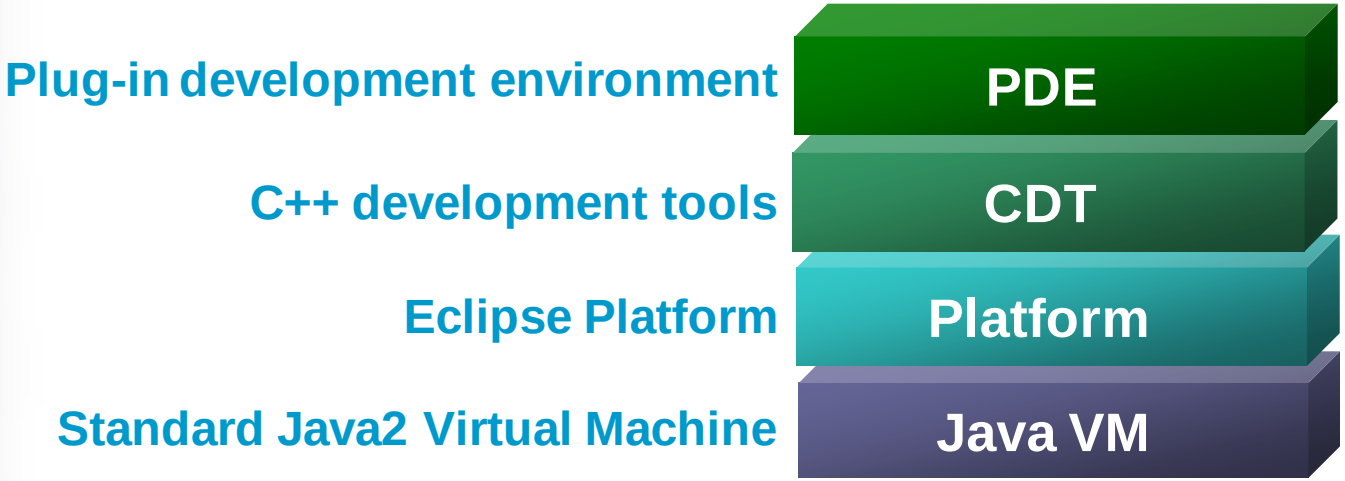
Eclipse Tutorial

What is Eclipse

Integrated Development Environment (IDE)

- A Universal Platform for Development Tools

- Open, extensible architecture based on plug-ins
- Open-source
  - see the Eclipse Project at Eclipse.org
- Multi-platform, multi-language, multi-vendor
- Endorsed by major tool vendors
- Reduced Complexity through customizable perspectives and views
- Support for popular features through open standards



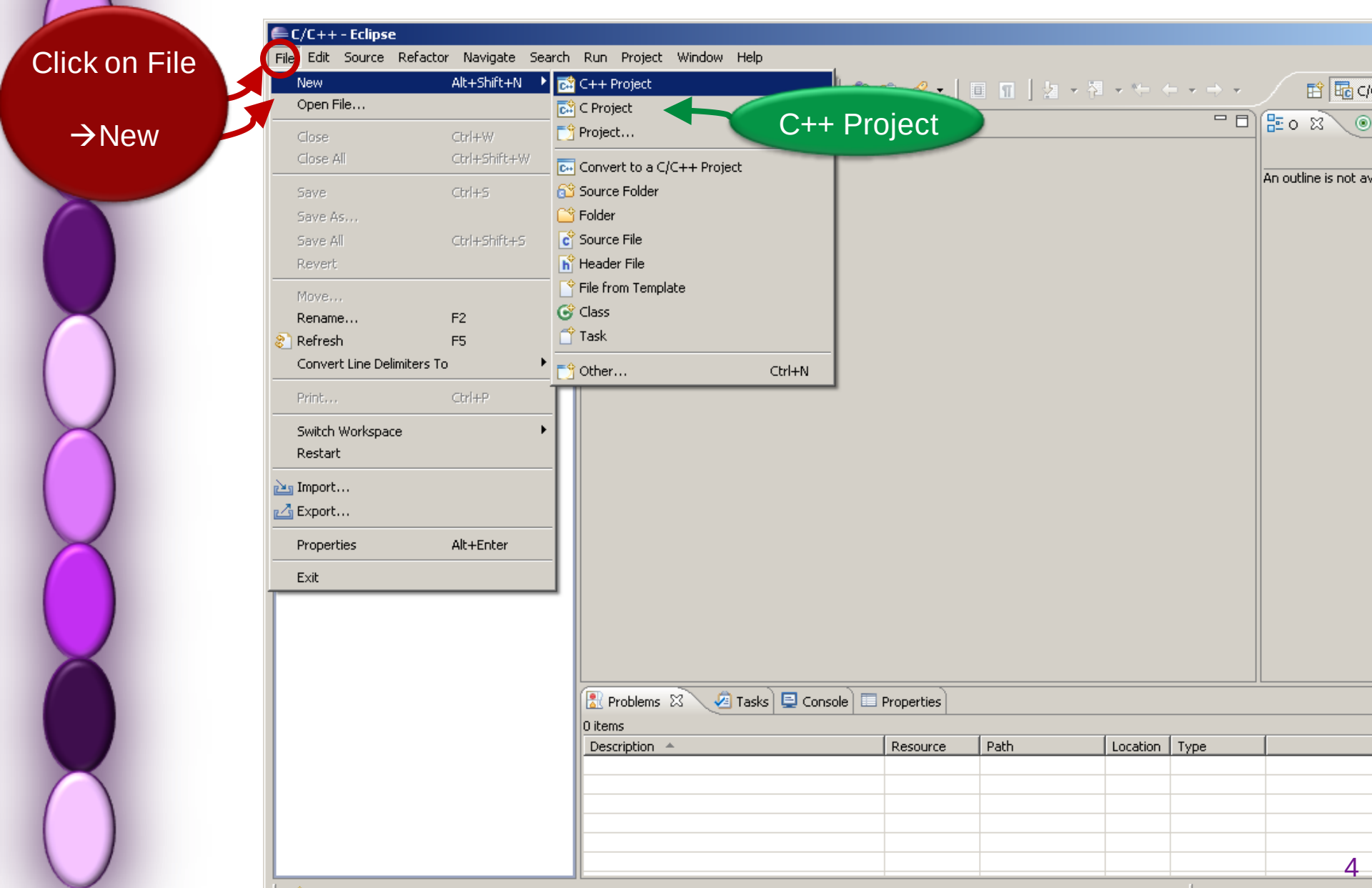
Tutorial – How to get started

- *See the tutorial at*
  - http://cs.saddlback.edu → Eclipse Resources → Creating a C++ Project

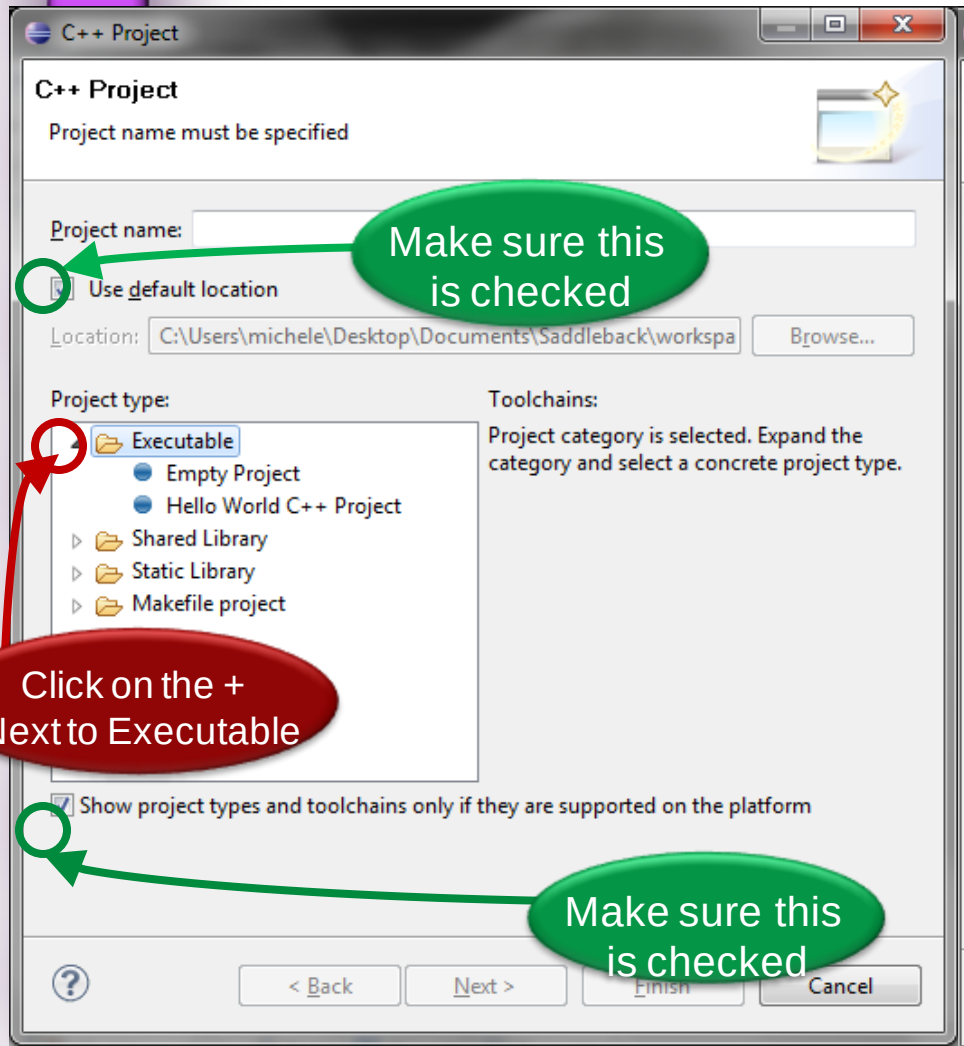
- Close the Welcome to get to the c++ eclipse platform

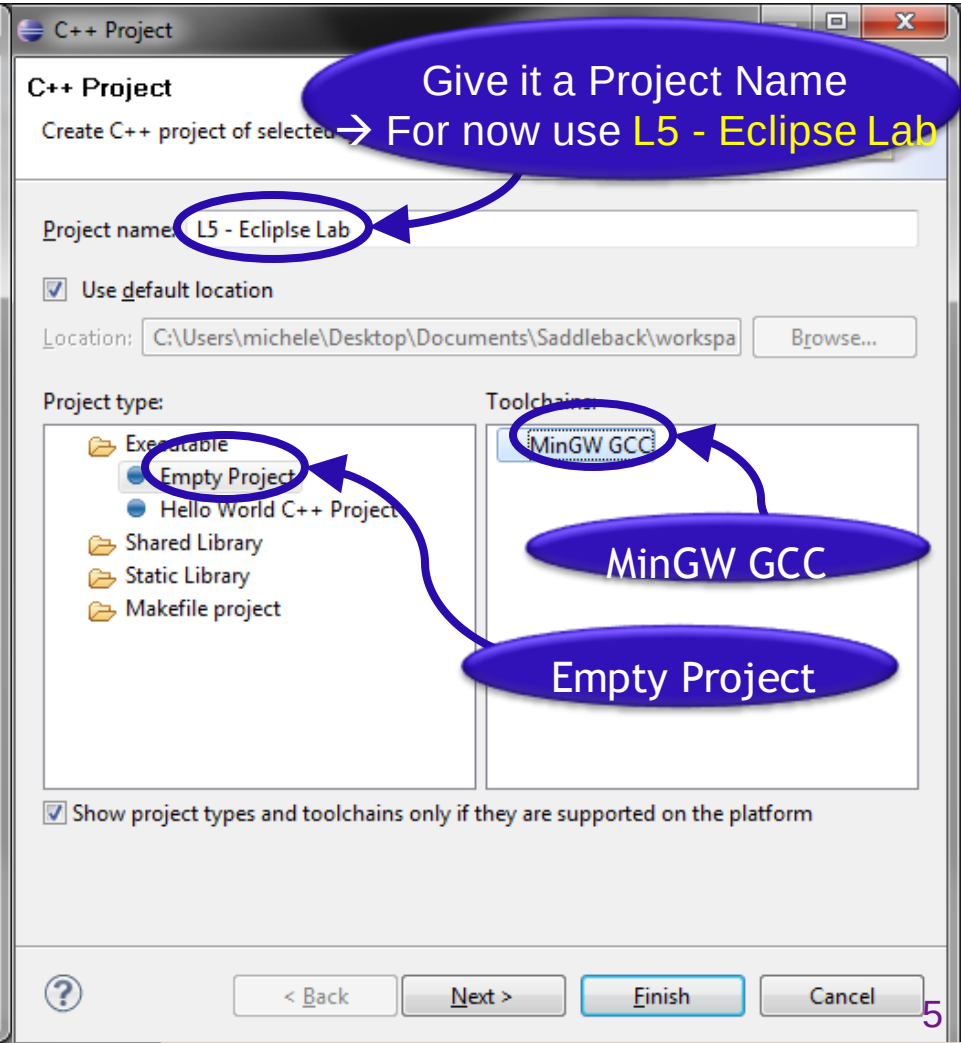
Click on the x

Go to File → New → C++ Project



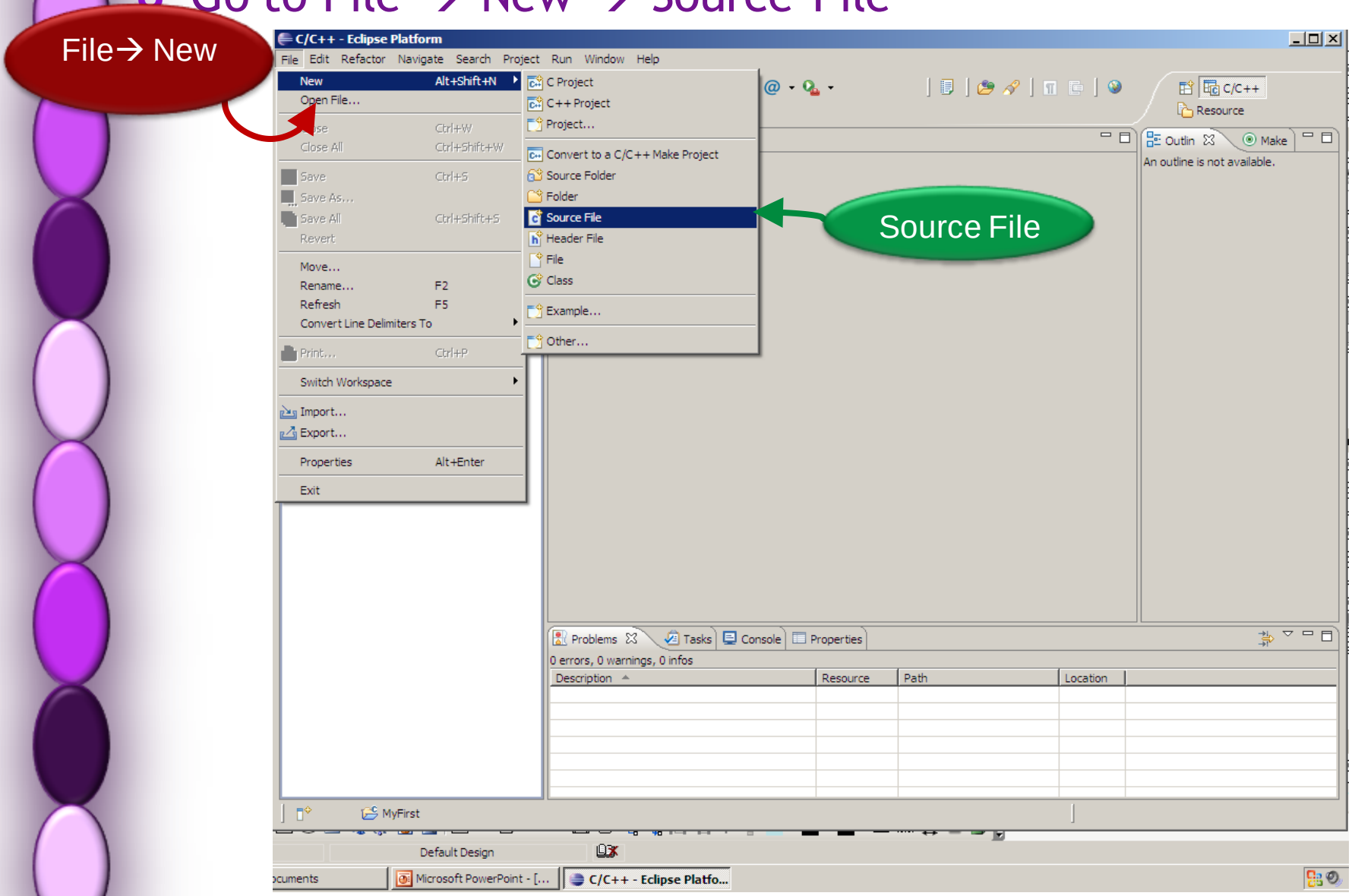
- Expand Executable from “Project Types” by clicking on the +
- Select Empty project from “Project Types”
- → Select MinGW GCC from “Toolchain”
- Select a Project Name → for this lab type: Eclipse Lab
- Click Finish





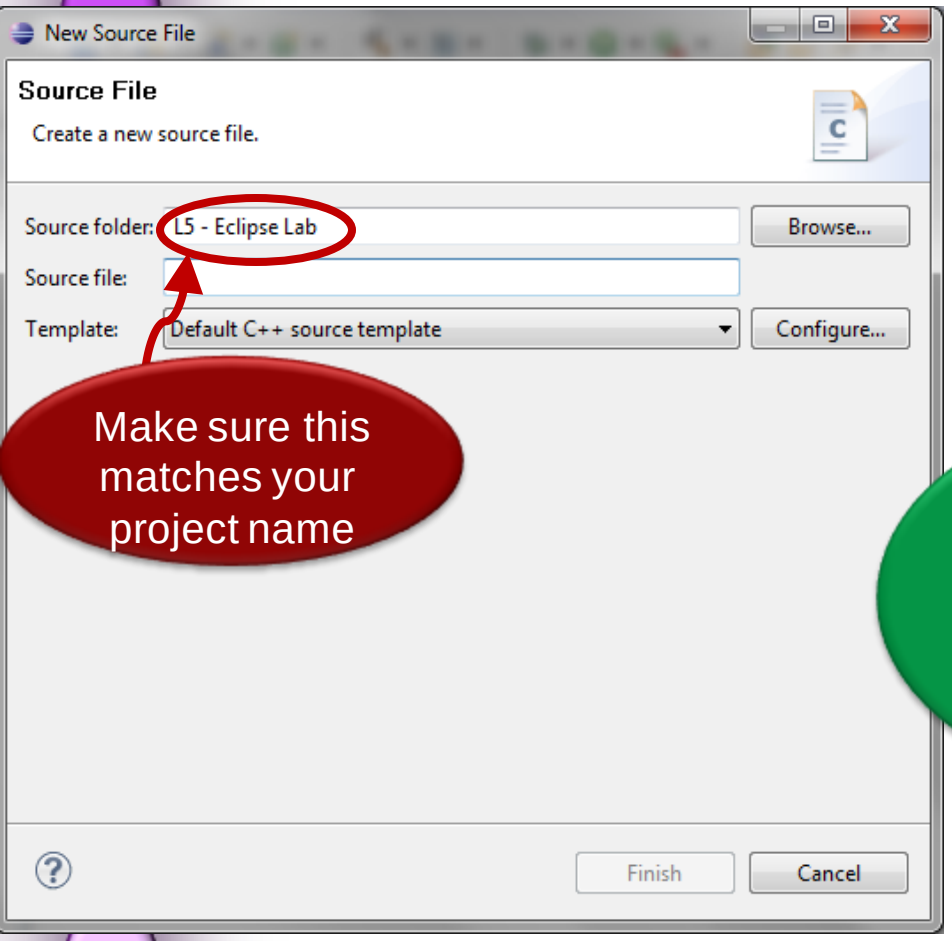
Creating a C++ Source File

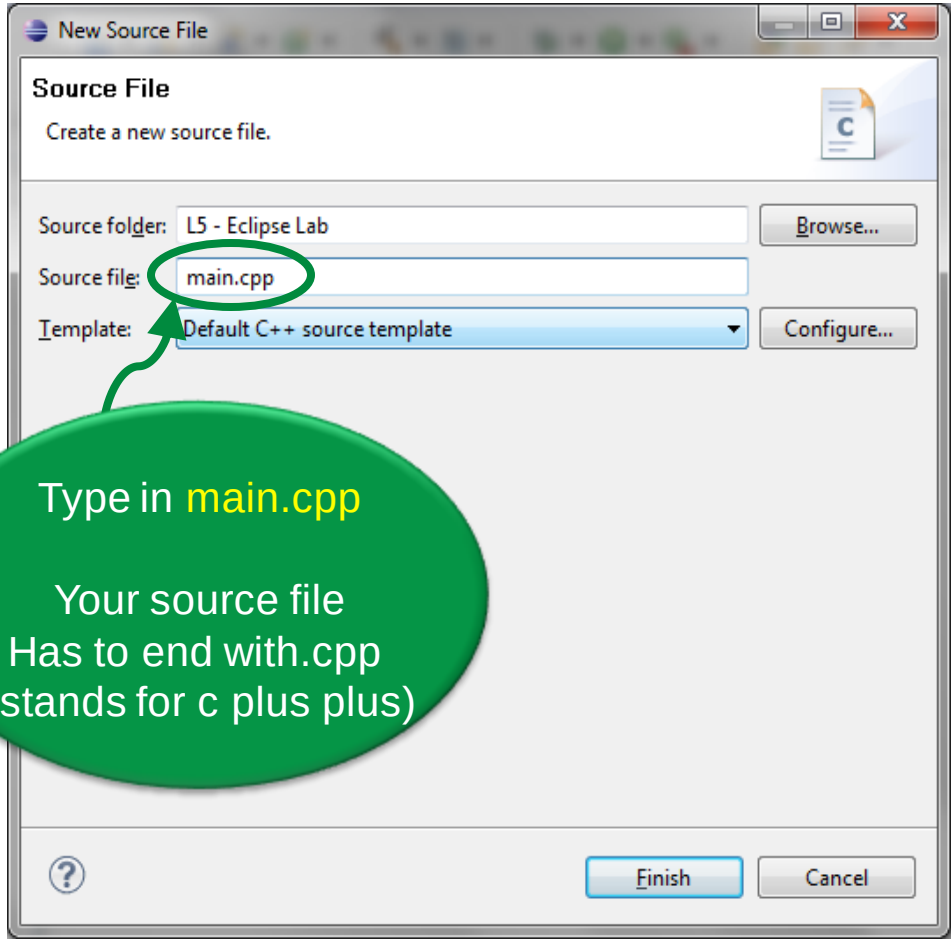
- Go to File → New → Source File



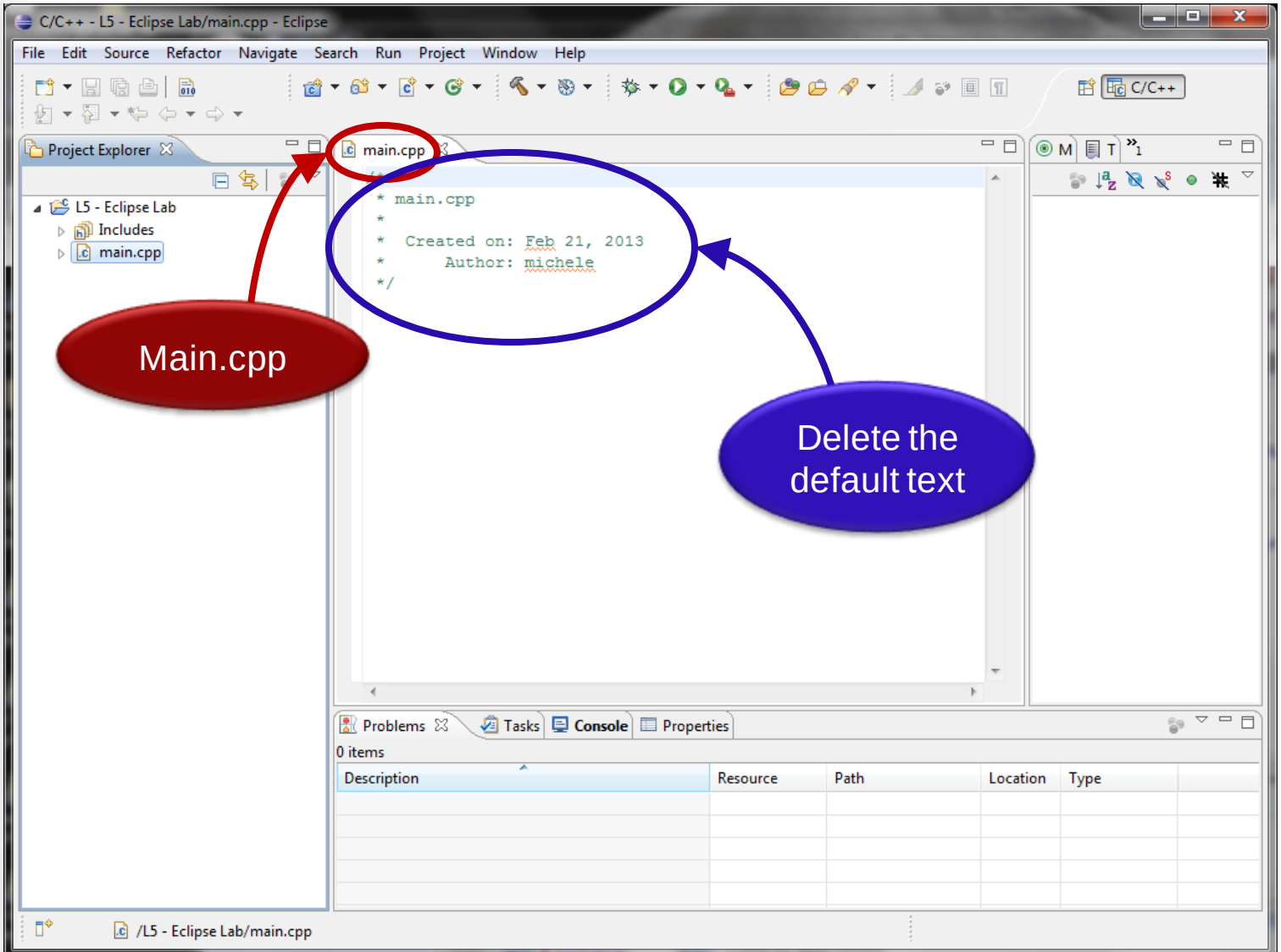
Creating a source file

- Enter main.cpp in the name
- → finish



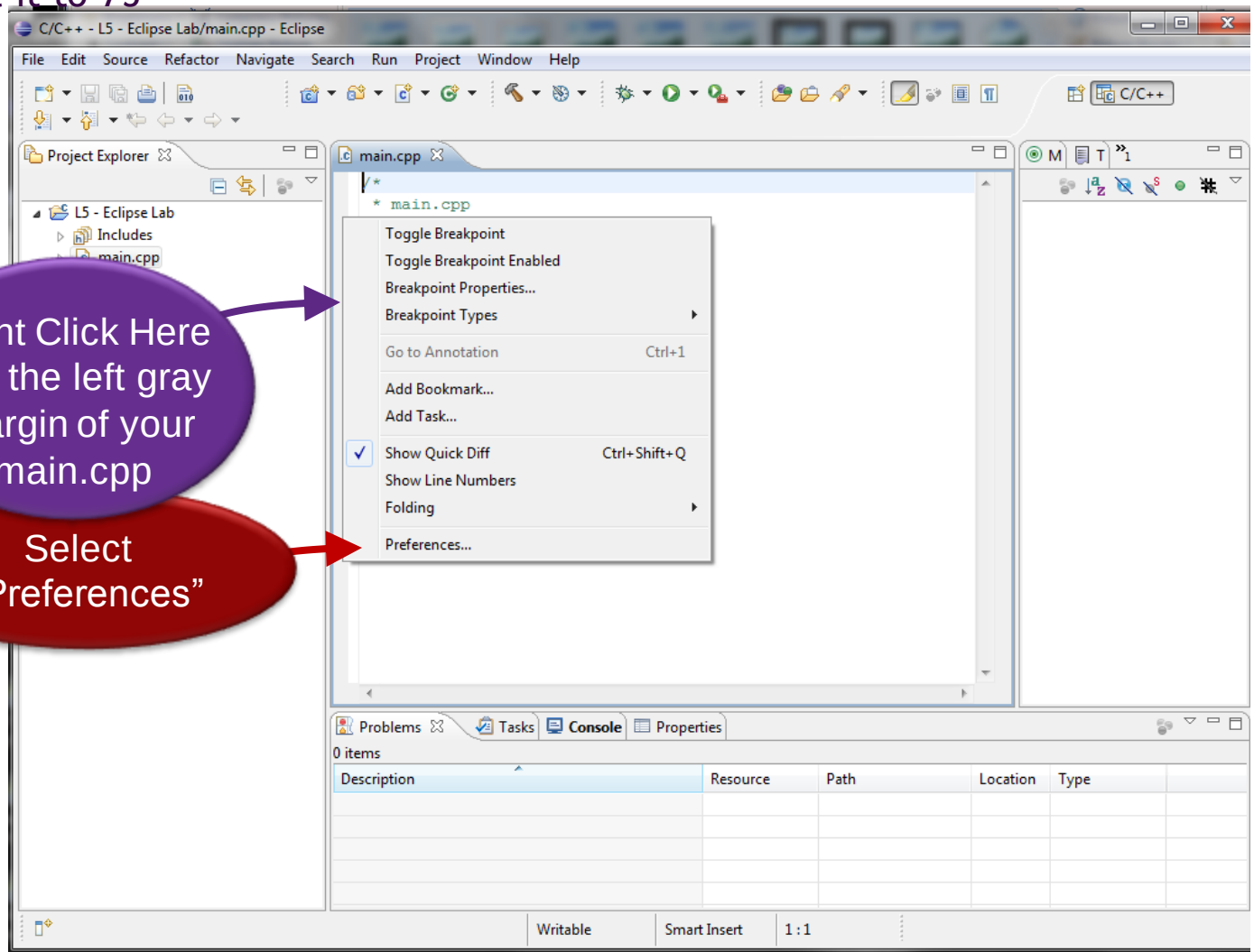


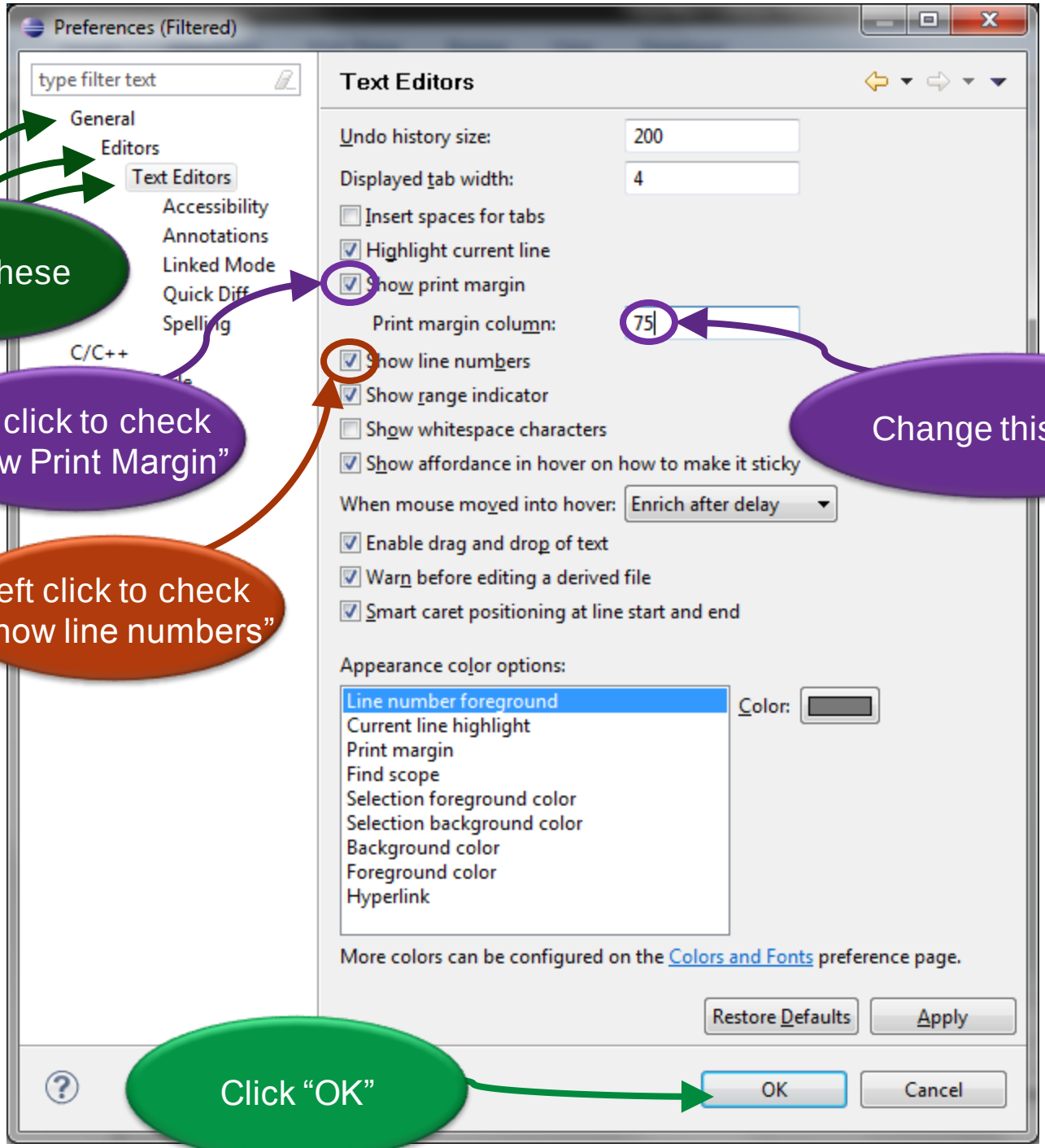
- TYPE the code on the next slide into the “main.cpp” window
  - **DO NOT CUT & PASTE**
- Make sure you hit return/enter after the }



Displaying Line Numbers and Print Margins

- Line numbers help with debugging
  - Line numbers should be displayed for all programs and output in this class
- Margins make sure your code doesn't word wrap
  - Set it to 75




Preferences (Filtered)
type filter text
General
Editors
Text Editors
Accessibility
Annotations
Linked Mode
Quick Diff
Spelling
C/C++
Text Editors
Undo history size: 200
Displayed tab width: 4
Insert spaces for tabs
Highlight current line
Show print margin
Print margin column: 75
Show line numbers
Show range indicator
Show whitespace characters
Show affordance in hover on how to make it sticky
When mouse moved into hover: Enrich after delay
Enable drag and drop of text
Warn before editing a derived file
Smart caret positioning at line start and end
Appearance color options:
Line number foreground
Current line highlight
Print margin
Find scope
Selection foreground color
Selection background color
Background color
Foreground color
Hyperlink
Color:
More colors can be configured on the Colors and Fonts preference page.
Restore Defaults
Apply
OK
Cancel
Expand these
Left click to check "Show Print Margin"
Left click to check "Show line numbers"
Change this to 75
Click "OK"

```
/*************************************************************
 * AUTHOR      :
 * STUDENT ID  :
 * LAB #0      : Eclipse Lab
 * CLASS       :
 * SECTION     :
 * DUE DATE    :
 *************************************************************/

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

// Documentation that goes here will be discussed later
int main()
{
    /*************************************************
     * CONSTANTS
     * -----------------------------------------------
     * USED FOR CLASS HEADING - ALL WILL BE OUTPUT
     * -----------------------------------------------
     * PROGRAMMER : Programmer's Name
     * CLASS      : Student's Course
     * SECTION    : Class Days and Times
     * LAB_NUM    : Lab Number (specific to this lab)
     * LAB_NAME   : Title of the Lab
     *************************************************/
    const char PROGRAMMER[30] = "Michele Rousseau";
    const char CLASS[5]       = "CS1A";
    const char SECTION[25]    = "MW: 7:30a - 12:00p";
    const int  LAB_NUM        = 5;
    const char LAB_NAME[17]   = "Eclipse Tutorial";

    // OUTPUT - Class Heading
    cout << left;
    cout << "*************************************************";
    cout << "\n*  PROGRAMMED BY : " << PROGRAMMER;
    cout << "\n*  " << setw(14) << "CLASS"  << ": " << CLASS;
    cout << "\n*  " << setw(14) << "SECTION"  << ": " << SECTION;
    cout << "\n*  LAB #" << setw(9) << LAB_NUM << ": " << LAB_NAME;
    cout << "\n*************************************************\n\n";
    cout << right;

    return 0;
}
```

Fill in this author box with YOUR appropriate Information (ie. name, lab #, lab name, class, section & due date.)

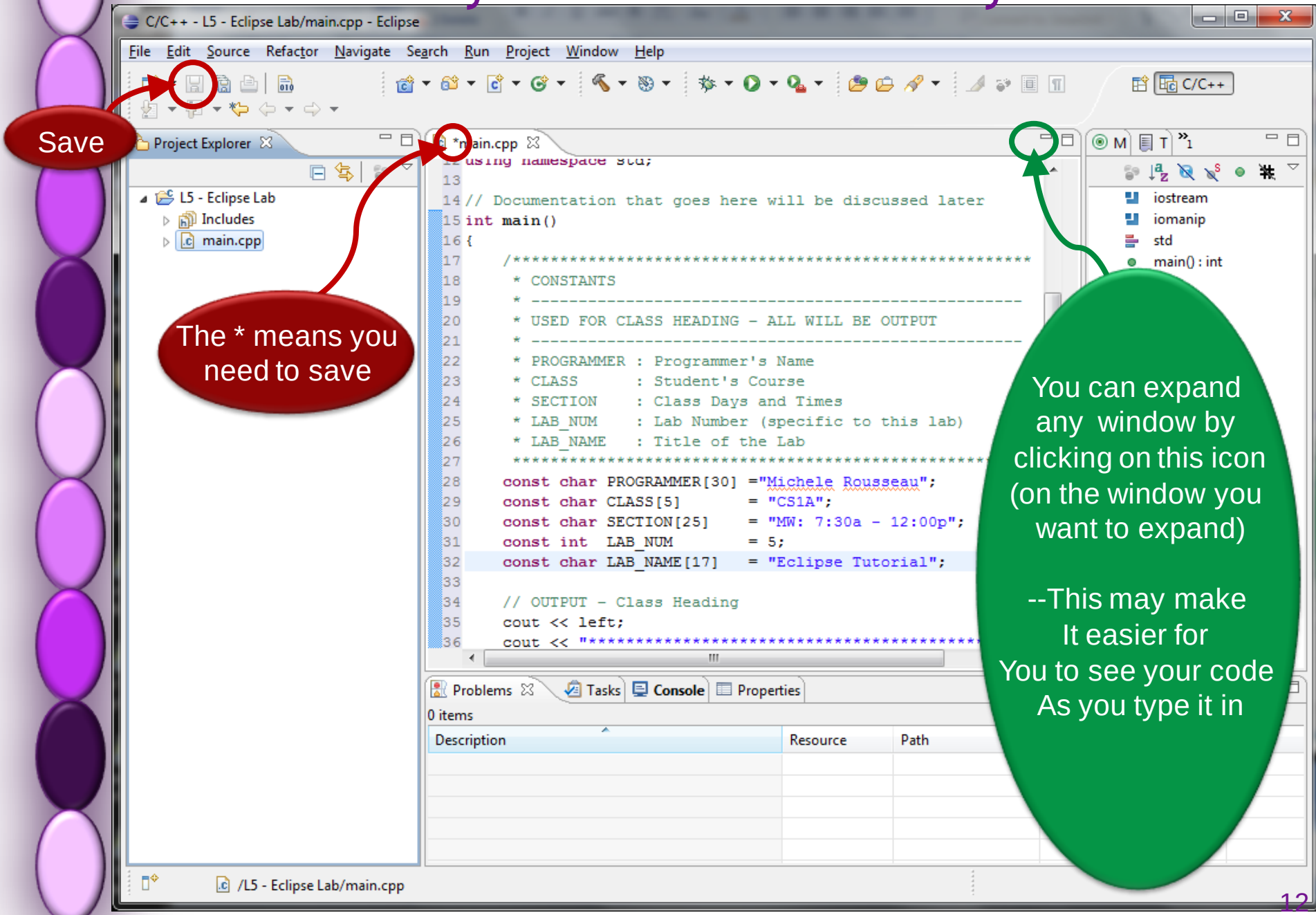
Type this program in EXACTLY as you see it here EXCEPT the changes specified by the purple boxes

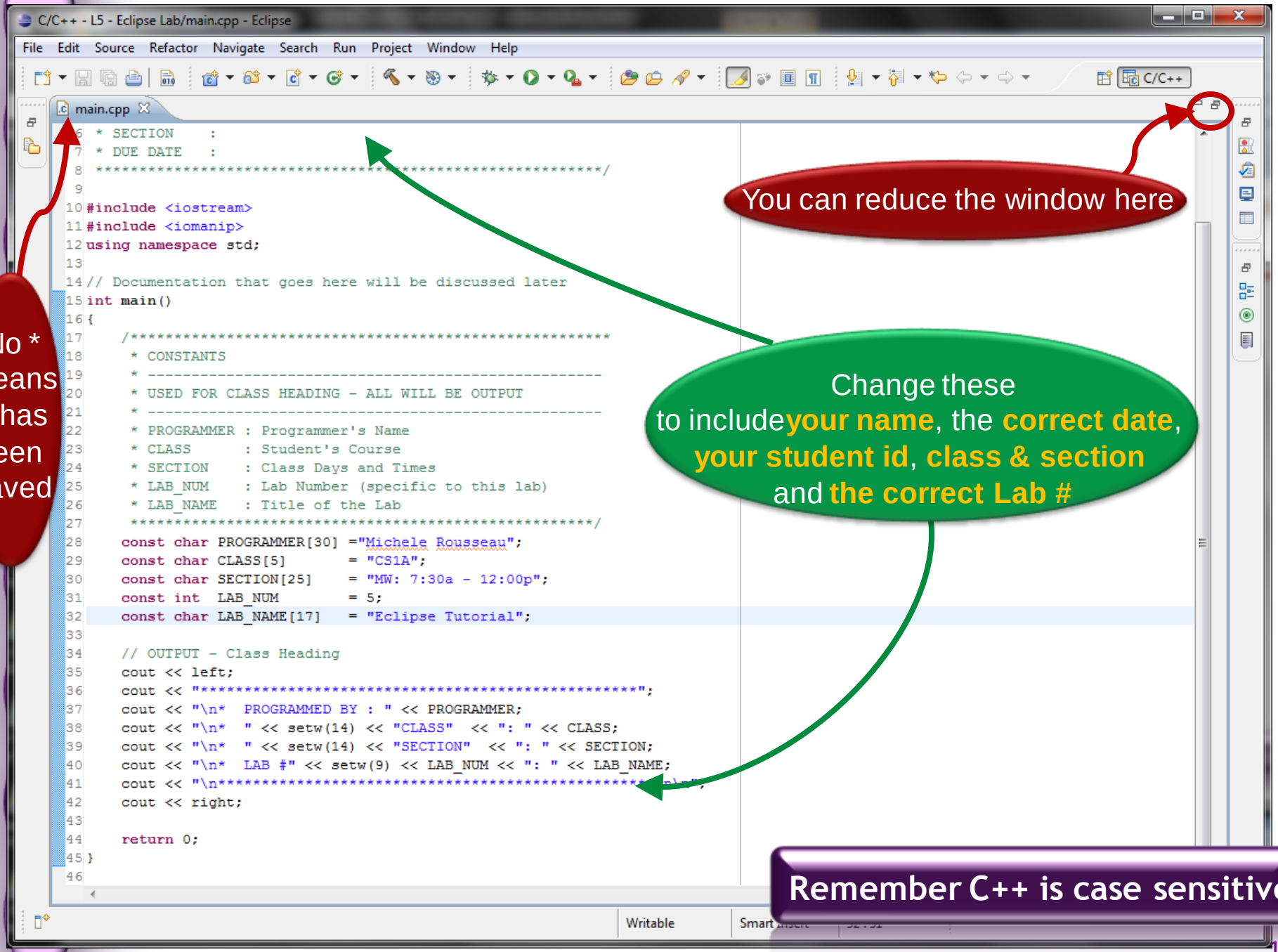
DO NOT ALTER THE TEXT IN THIS SECTION (the green text)

Replace the info in this section with YOUR info. (your name, class, section and the lab name all within quotes, plus the proper lab #)

MAKE SURE you hit the enter key after the }

Make sure you save before every build




C/C++ - L5 - Eclipse Lab/main.cpp - Eclipse
File Edit Source Refactor Navigate Search Run Project Window Help
main.cpp
* SECTION :
* DUE DATE :
#include <iostream>
#include <iomanip>
using namespace std;
// Documentation that goes here will be discussed later
int main()
{
/*
* CONSTANTS
* USED FOR CLASS HEADING - ALL WILL BE OUTPUT
* PROGRAMMER : Programmer's Name
* CLASS : Student's Course
* SECTION : Class Days and Times
* LAB_NUM : Lab Number (specific to this lab)
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*/
const char PROGRAMMER[30] ="Michele Rousseau";
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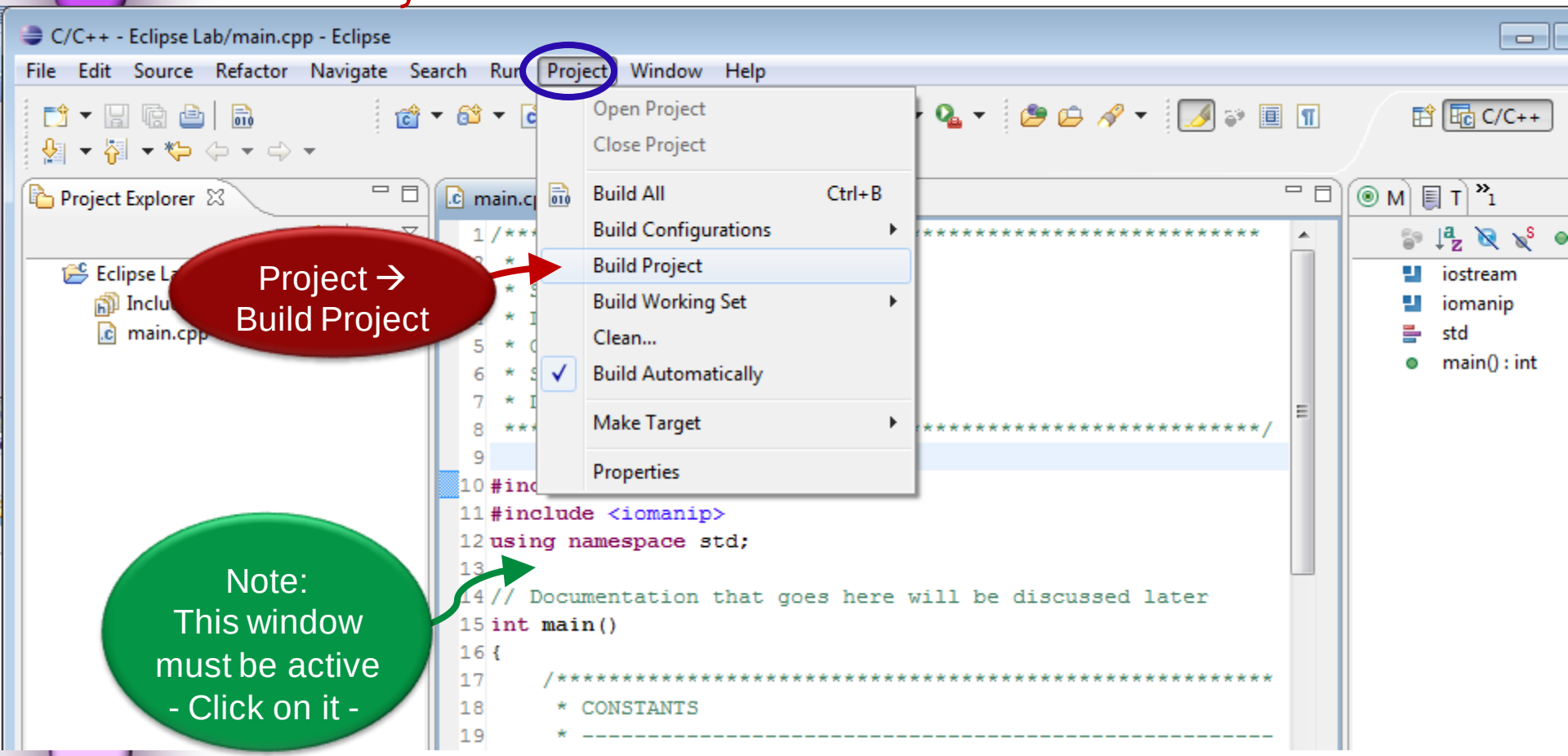
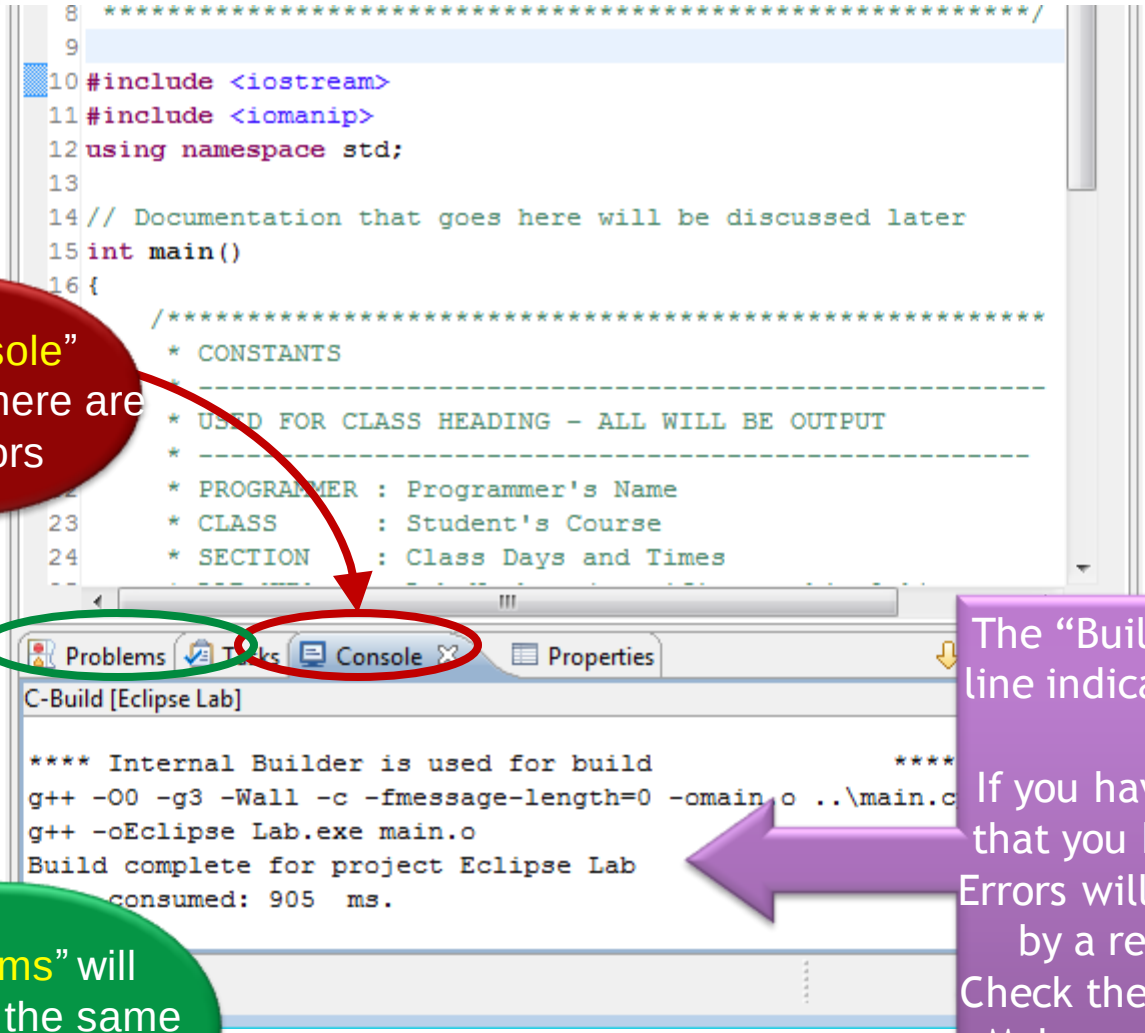
const char SECTION[25] = "MW: 7:30a - 12:00p";
const int LAB_NUM = 5;
const char LAB_NAME[17] = "Eclipse Tutorial";
// OUTPUT - Class Heading
cout << left;
cout << "***";
cout << "\n* PROGRAMMED BY : " << PROGRAMMER;
cout << "\n* " << setw(14) << "CLASS" << ": " << CLASS;
cout << "\n* " << setw(14) << "SECTION" << ": " << SECTION;
cout << "\n* LAB #" << setw(9) << LAB_NUM << ": " << LAB_NAME;
cout << right;
return 0;
}
Writable
You can reduce the window here
No * means it has been saved
Change these to include your name, the correct date, your student id, class & section and the correct Lab #
Remember C++ is case sensitive

Building a C++ Project (Compiling your code)

- Build compiles your code from C++ to machine language → it makes your code executable by the computer
- <ctrl> B to build the project or go to Project → Build All
- Make sure you save first



Any errors will show up in the console window at the bottom of the perspective



The "console" Will show if there are any errors

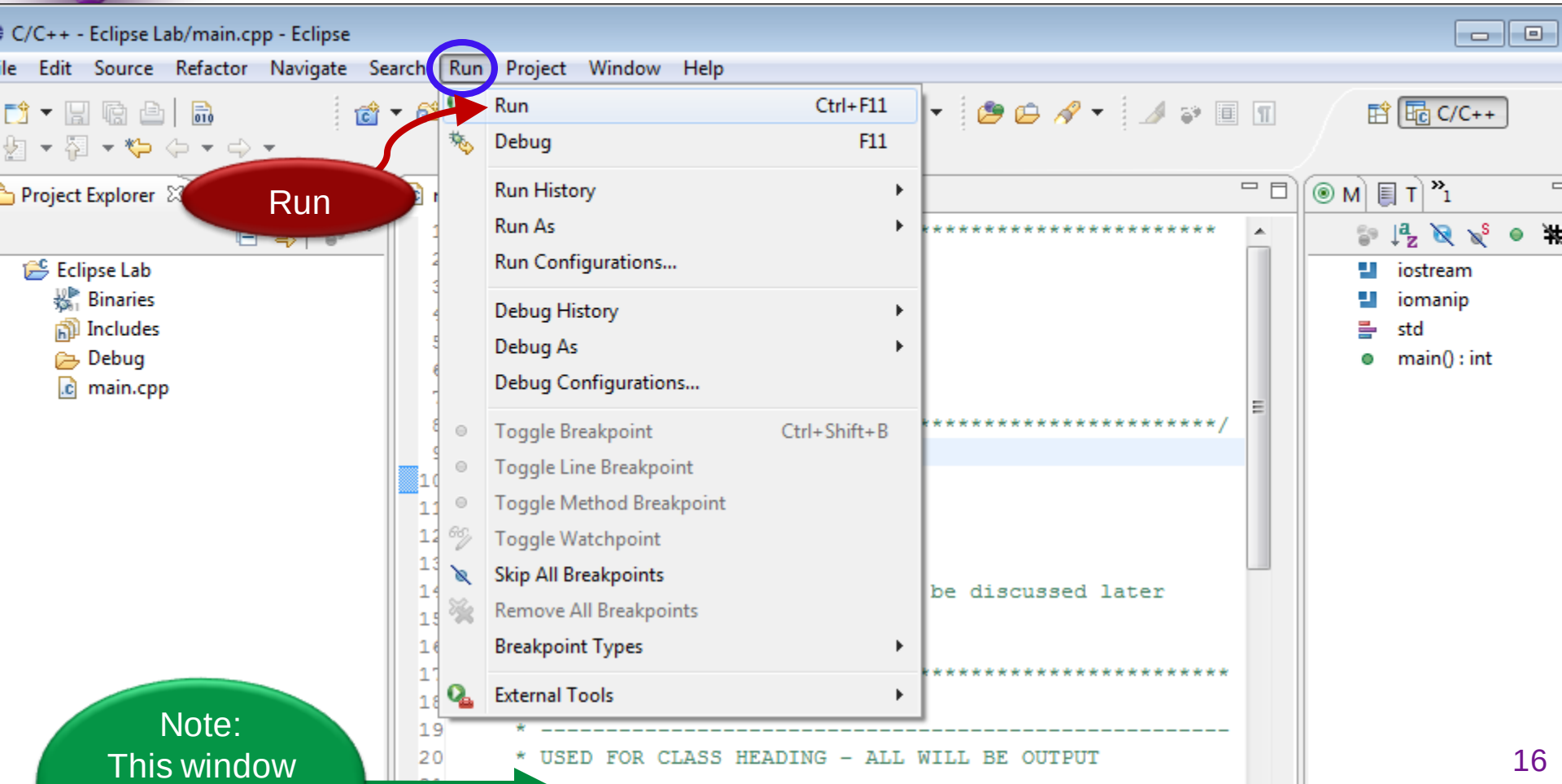
"Problems" will show you the same errors in a different format

The "Build complete for project…" line indicates there were no errors.

If you have errors → double check that you have not made any typos. Errors will be indicated in your code by a red circle with an x in it. Check the line above the circle too. Make sure you aren't missing any semi -colons

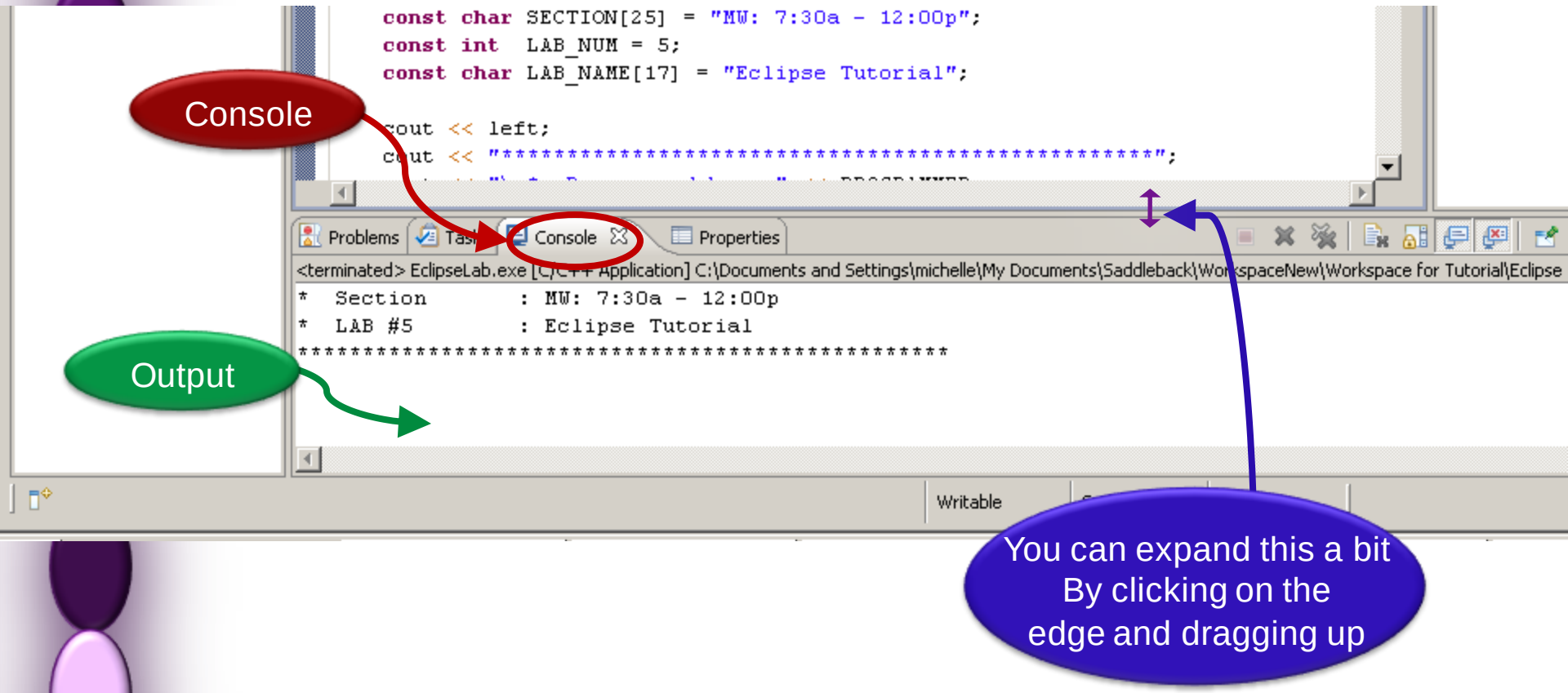
Running a C++ Application

- If code has compiled properly (You got the build complete message)
- You are ready to build
- First → Click on the source file window
  - In this case main.cpp
- Click on Run → Run as → 2Local C/C++ Application



Run Program

- If you have errors → you will get a "launch failed no binaries"
  - Go back and fix your errors
- Otherwise the results will display in the console window



To Print your Output

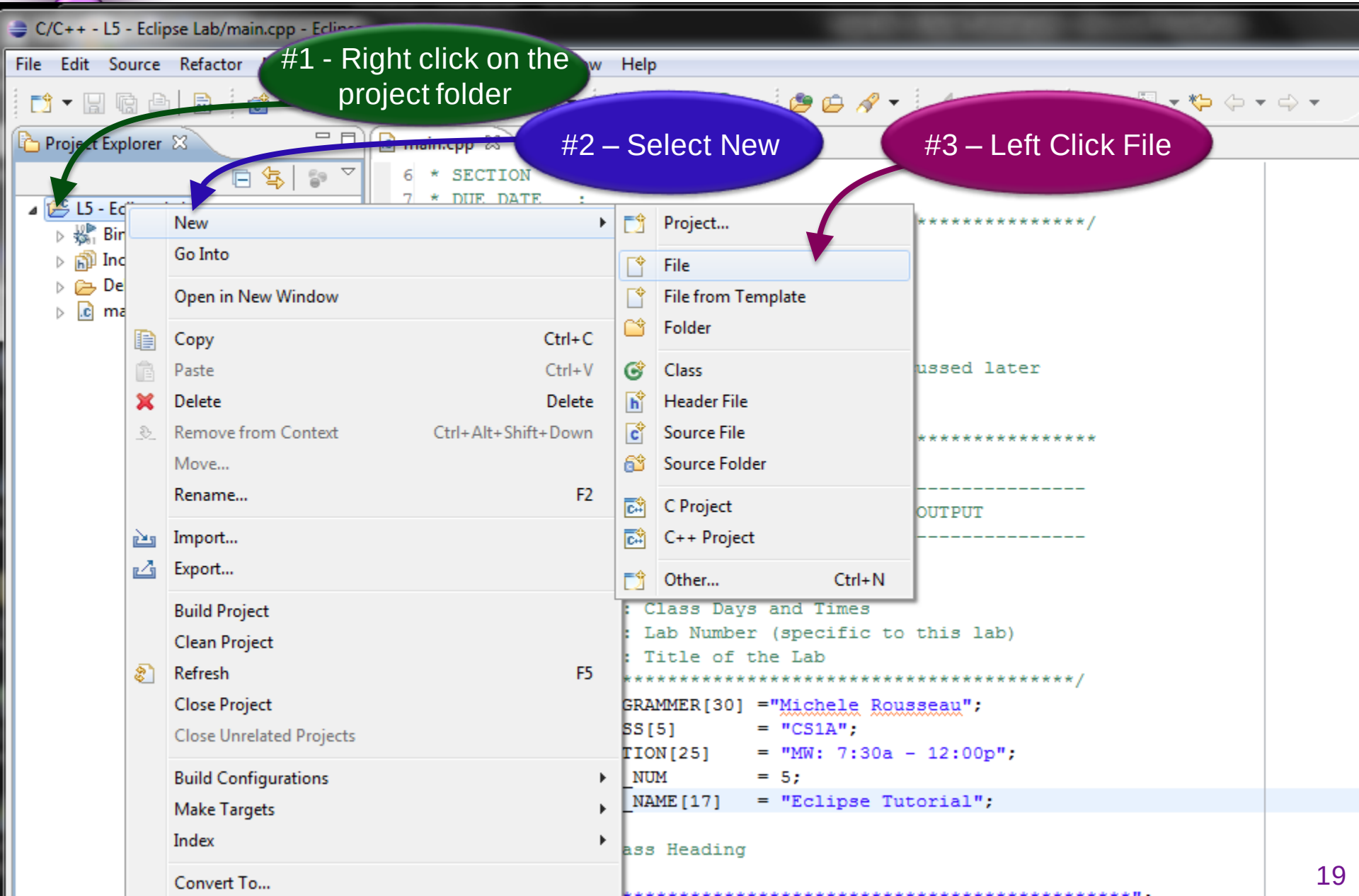
- Eclipse won't allow you to print from the console
  - You can print from the editor (where main.cpp is)

1 - Create a File

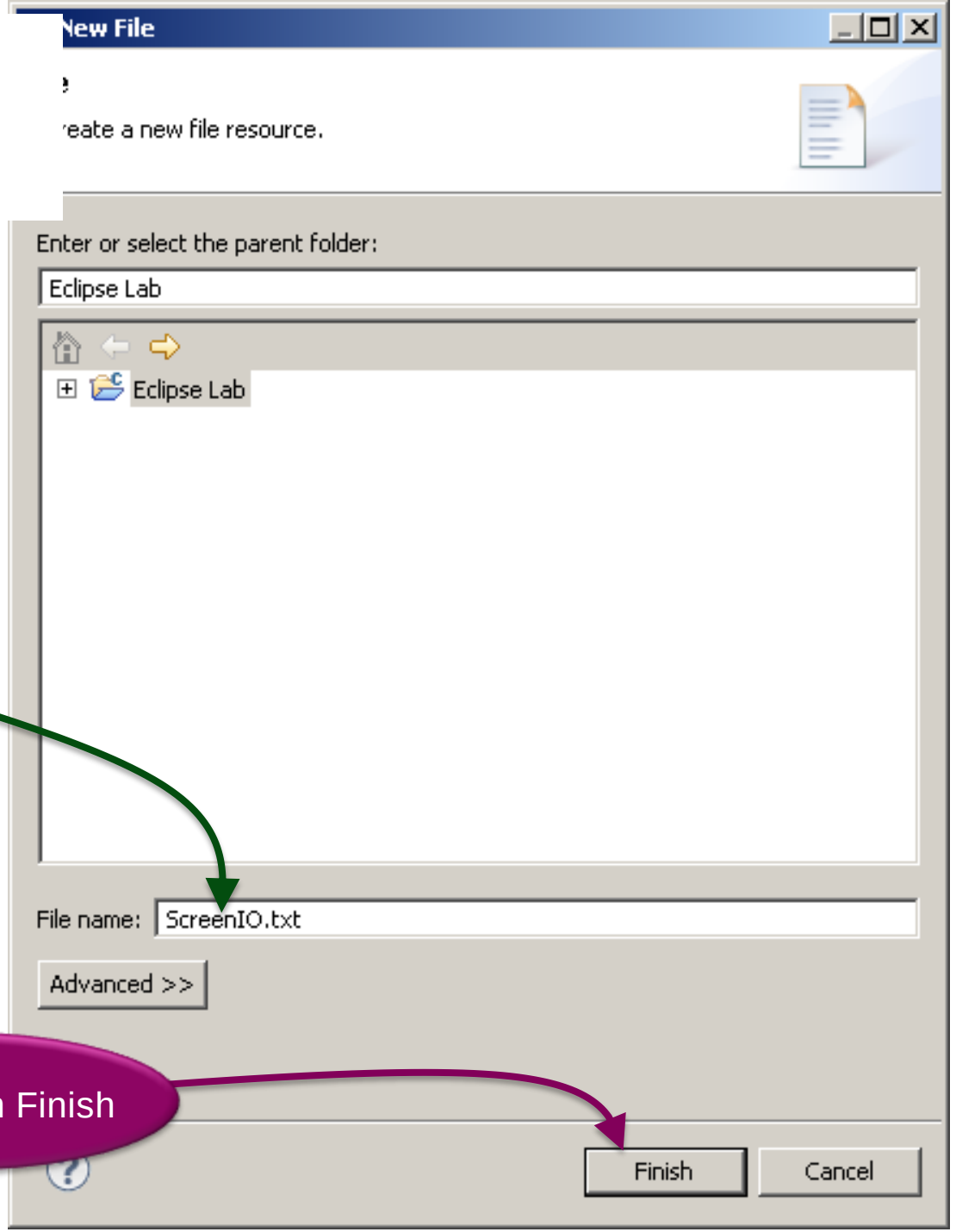
2 - Copy and Paste the output to the file

3 – Print the file

1. Create a File



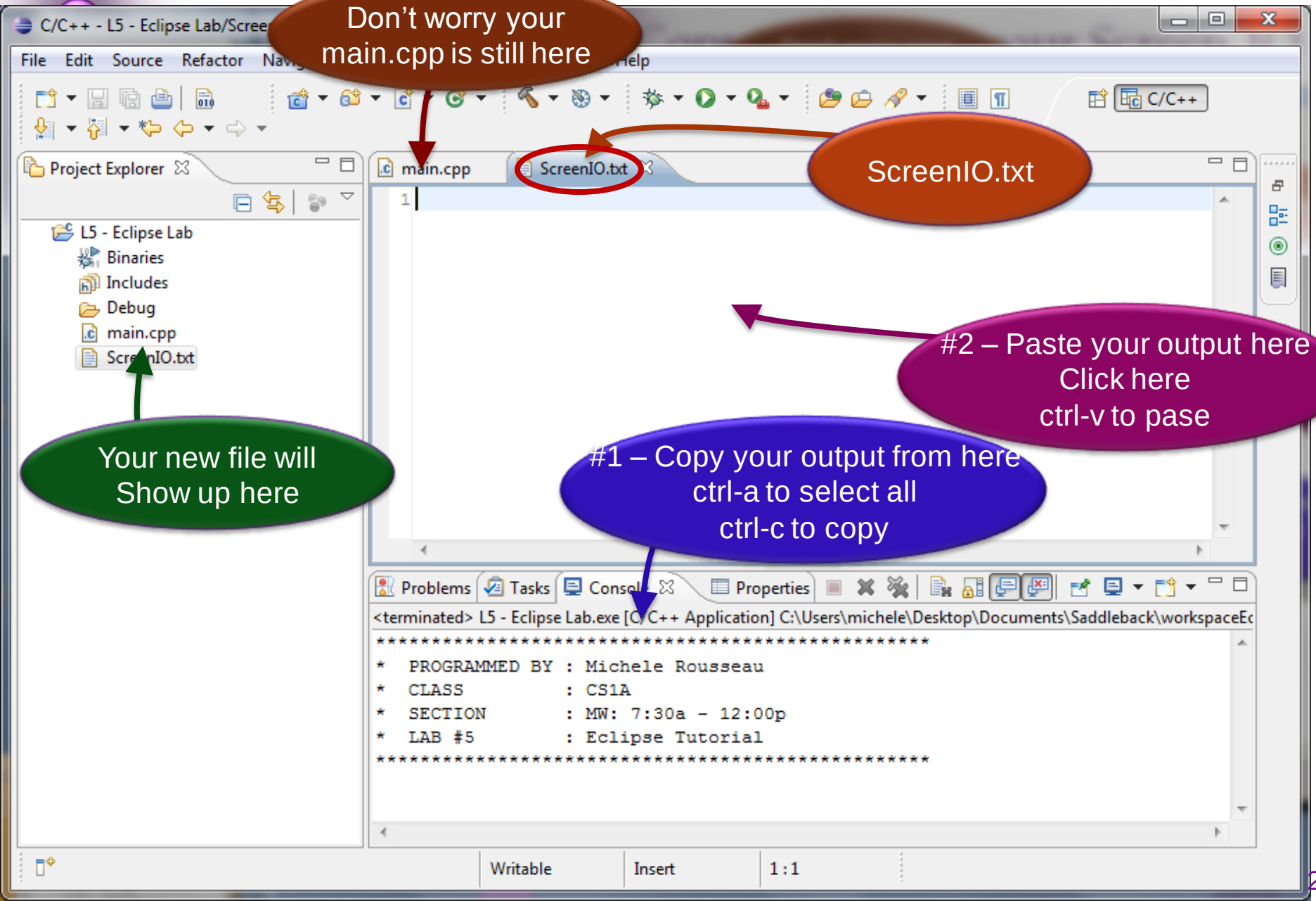
1. Create a File (con't)



#1 - Give it a name e.g. ScreenIO.txt

#2 – Click on Finish

Copy and Paste your Screen IO into the File



Print and Exit

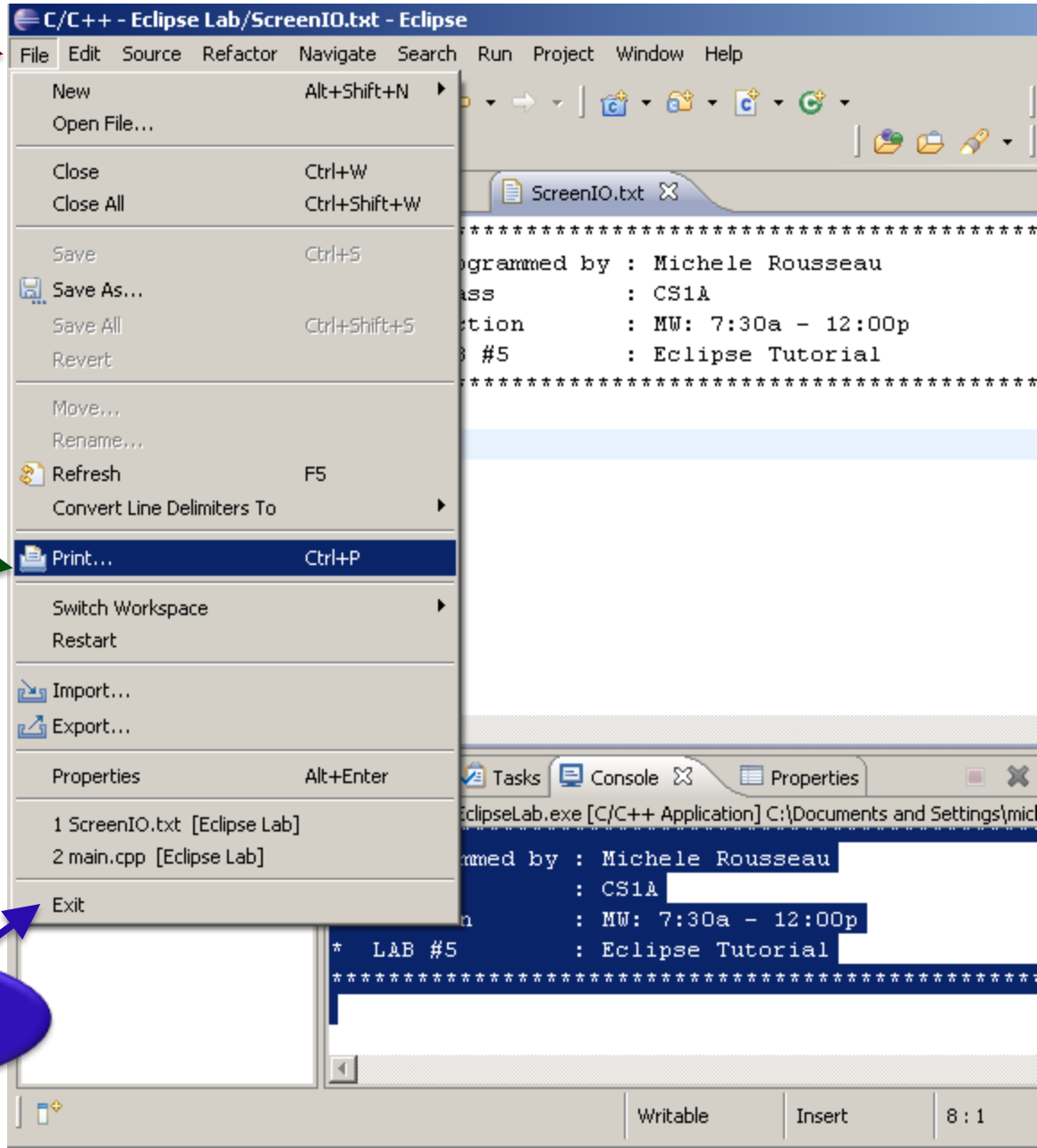
- Print
  - Select File -> Print
- Click on the tab for main.cpp
  - Select File -> Print
- To Exit from Eclipse
  - Select File -> Exit

#1 - Click on File

#2 – Click on Print

#3 - Repeat the process for main .cpp

#4 – Click on File → Exit



Eclipse

Part Two

What does all this show me?

What is a Workspace?

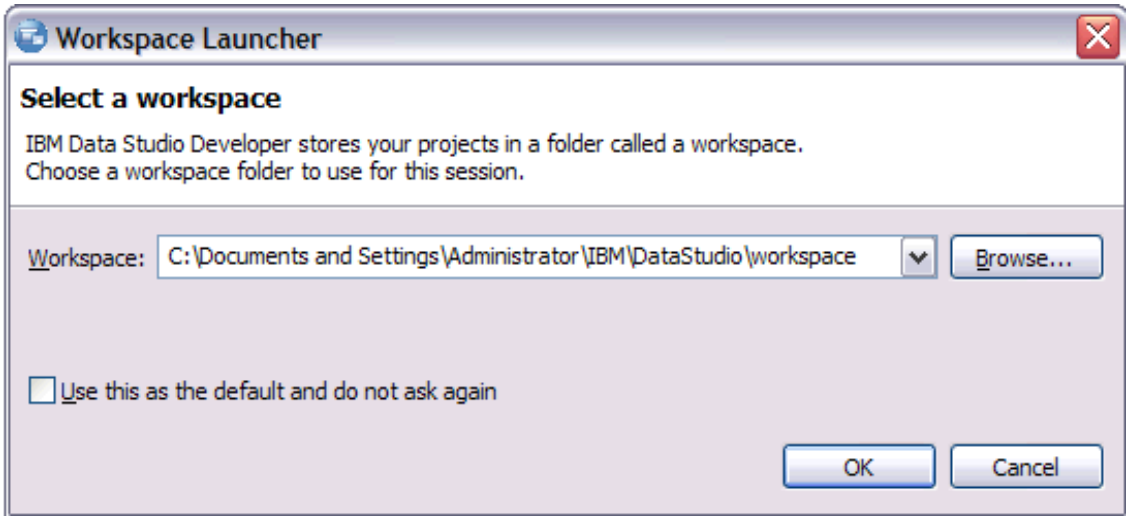
This is where all your files are saved

- In the lab your workspace will be in the H: drive
- All your files will be stored here
  - all user metadata
  - code, scripts, database objects, configuration
  - If you are registered and have signed up for lab we will not delete these files
  - However – IT IS AS GOOD IDEA TO MAKE BACKUP on a flash drive
- Set when starting the environment

Specifying Workspace

- Eclipse prompts for a workspace location at the startup time → in lab this should be turned off it will default to the H: drive

- Again → Backup to be safe



What is a project?

- A logical storage concept used to store related user metadata
- Assigned to one workspace
- Implemented as a directory in a workspace
- Can be shared when using shared repositories
- User can work in any number of projects at the same time
- Can be dynamically opened and closed