

C Programming

Intro to



If you haven't done so
already, turn on your
computer and get access
to the network NOW



Also start:



Left over from last class ...



Another way
to get to know
people ...

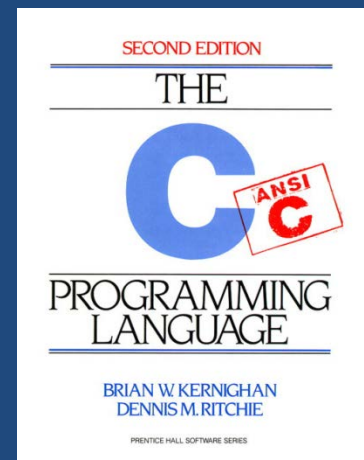
The Online Introductions!



Review!

Why is it important to know other people in the program?

Our Tools

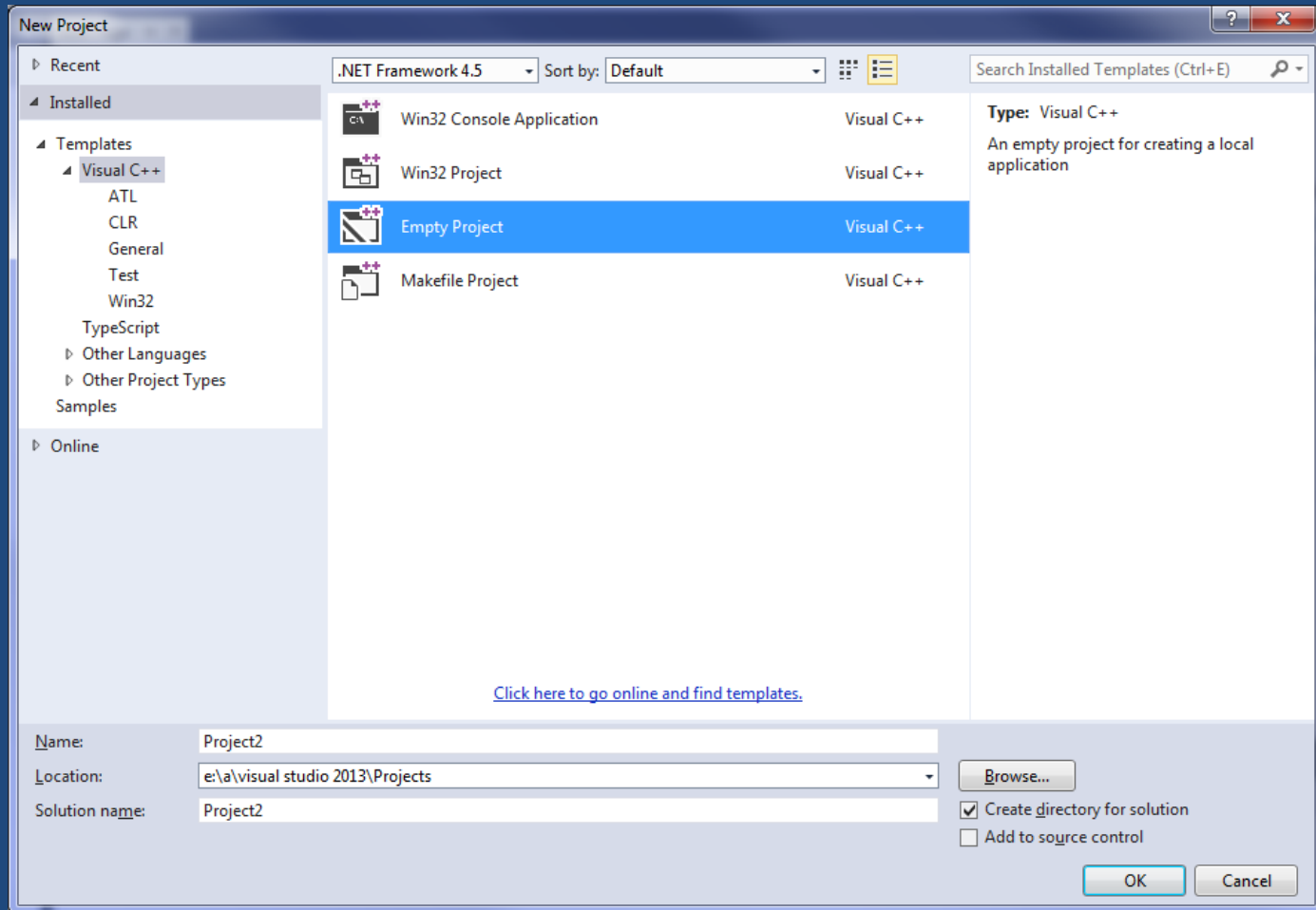


What's a Project?

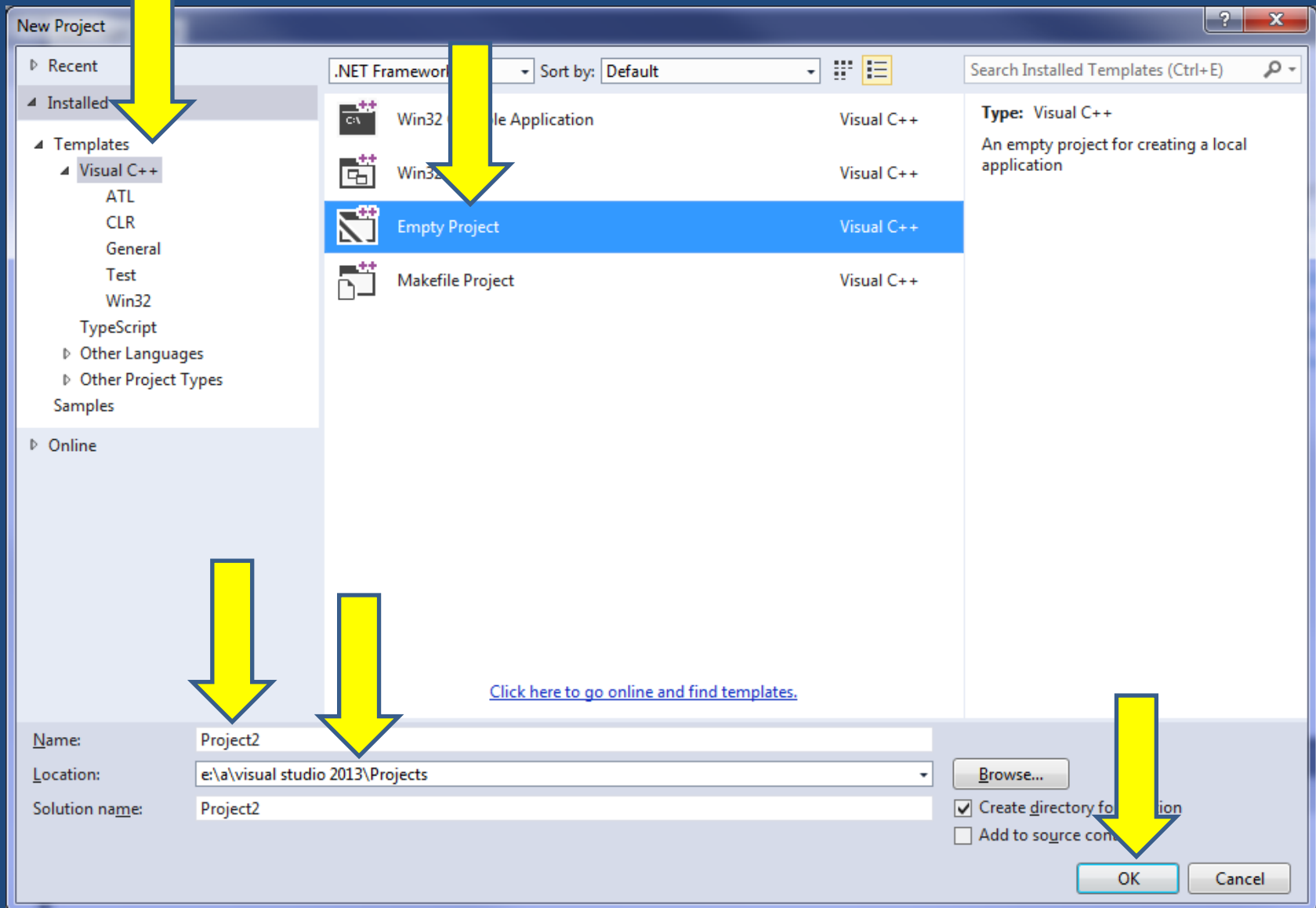
What's a Solution?

How is
a project
set up?

Use File > New > Project



1. Visual C++
2. Empty Project
3. Location
4. Name



Important Note!

You should likely work on your
projects on a local drive and
keep permanent storage
somewhere else

OR

use a USB stick

The Location might default
to somewhere bad, like
`\\fs02d\s4\home\...`

Change this!

Name:

ConsoleApplication1

Location:

\\fs02d\s4\home\csgro\visual studio 2012\Projects

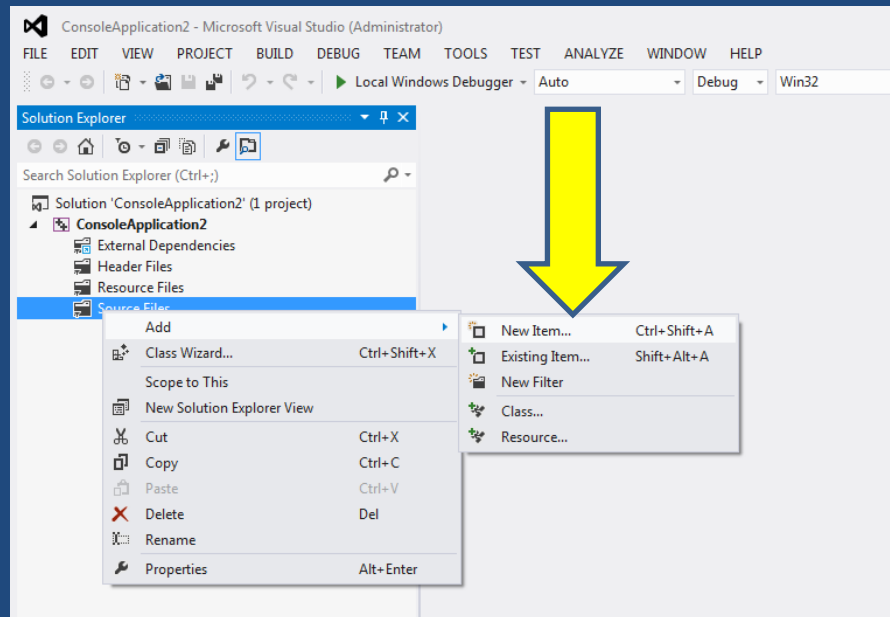
Solution:

Create new solution

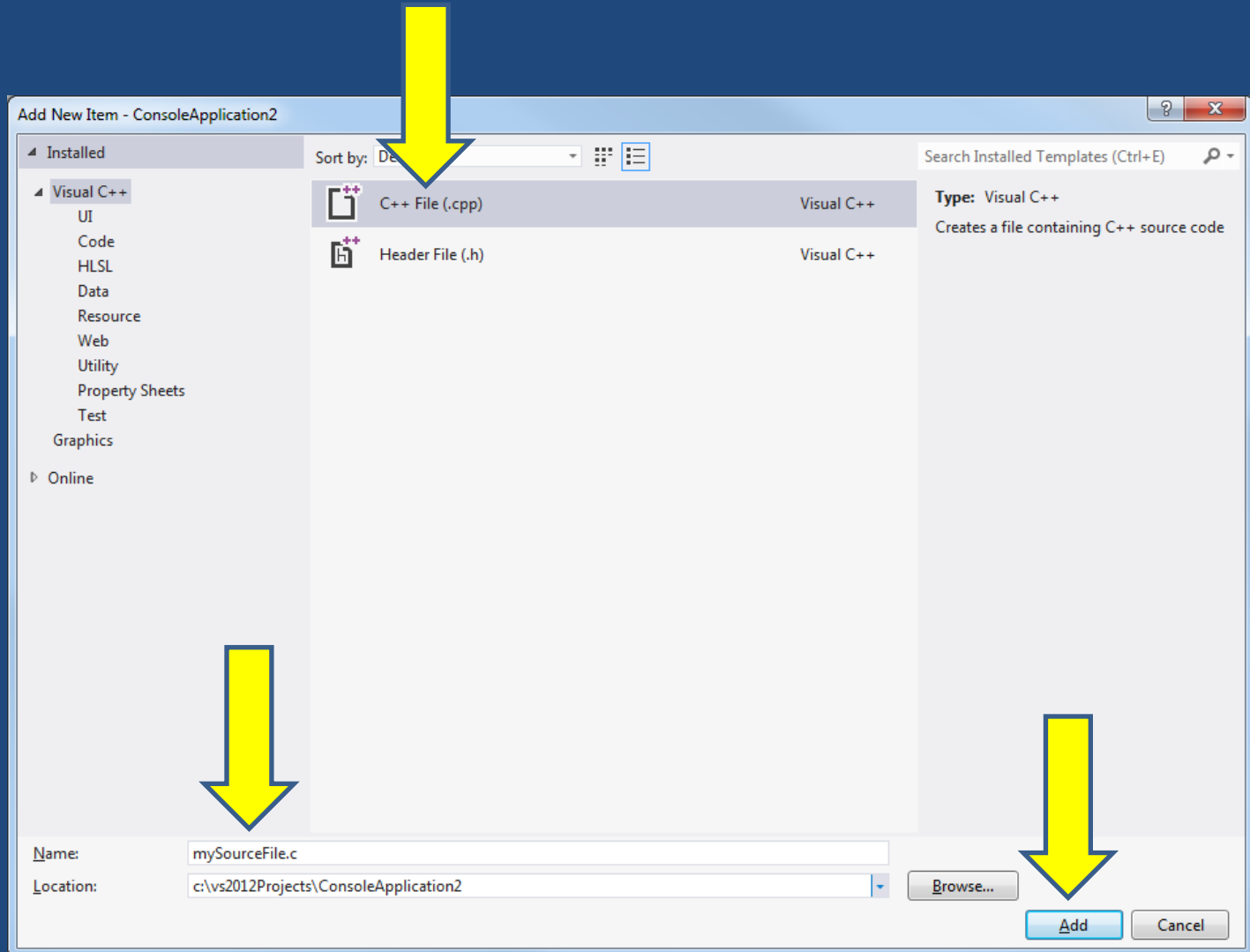
Solution name:

ConsoleApplication1

Add New Item



Naming our C source file



Review!

What program will we be using?

Review!

What do we always have to set up when we start working on a program?

Review!

Where should my program files
be stored?

Review!

Where should my program files
NOT be stored?

Type your source code (from CN pg. 16)

```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
int number = 9;
```

```
    /* print the number upon startup */
```

```
    printf("Numbers are coming... ");
```

```
    printf("The number is %d\n", number);
```

```
    /* change the value of the number and
```

```
    * print it */
```

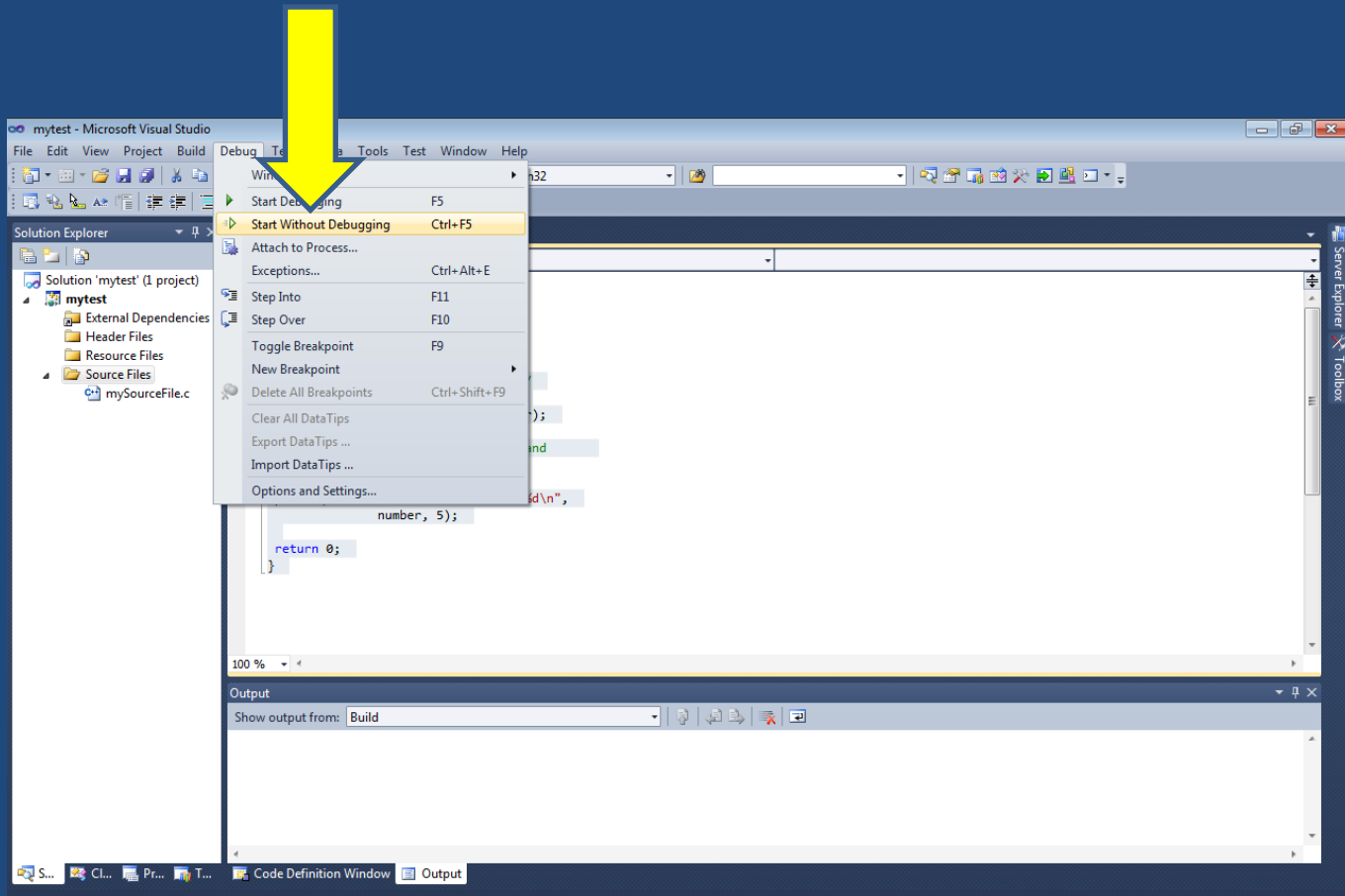
```
    number = 8;
```

```
    printf("The number is now %d, not %d\n",  
          number, 5);
```

```
    return 0;
```

```
}
```


Then try to run your program



The Execution Cycle

Multi-step Process

Edit



Compile



Link



Run

Editing



Compiling

Convert from C
code to what the
computer can
understand

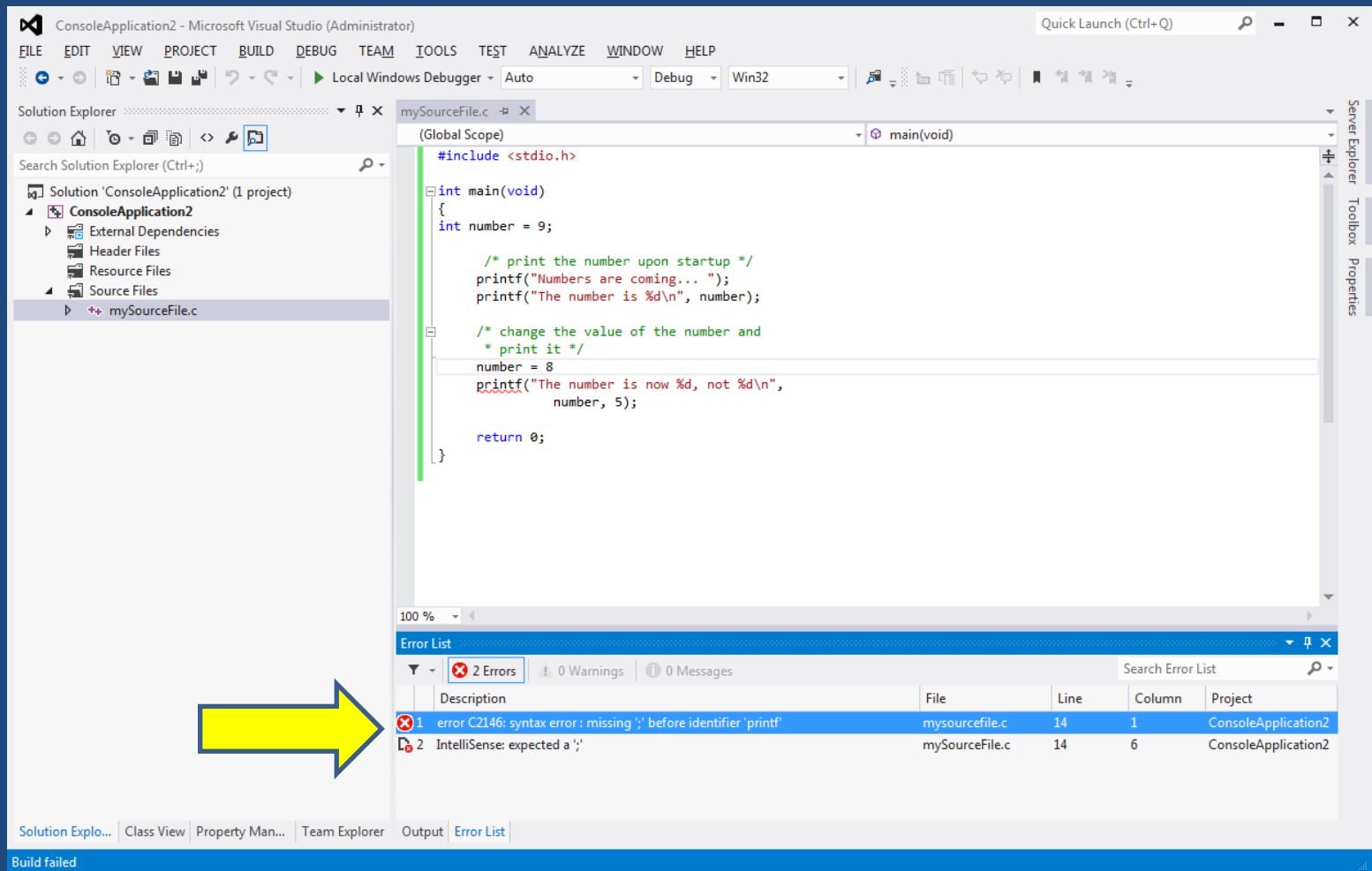


Here Be Errors, Me Hearties!



An unexpected error occurred, because it cannot be found.

OK



Linking

Combining your wonderful C
code with stuff Microsoft gave
you



Running

Success!



... or not!?!?

Let's do it again!



It's all combined into Execution
(Start Without Debugging /
Ctrl+F5)

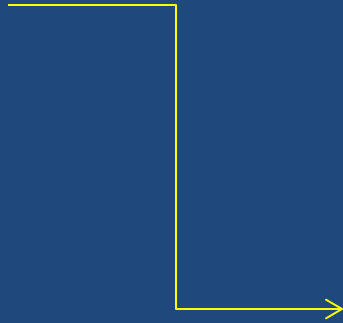
Review!

In which step of the execution cycle are you likely to run across errors?

Review!

In which step of the execution cycle are you likely to type the most?

IDE



Everything
you need!

What the program really says

```
#include <stdio.h>
```

Include the contents of the file called
stdio.h when compiling

```
int main()
```

Start a function called main. It'll
return an integer value.

{

Start a code block

```
int number = 9;
```

Declare a variable

```
/* print the number upon  
    startup */
```

Is a comment

Are there other types of
comments?

Yes!

Review!

What's a comment?

Review!

What's main?

```
printf("Numbers are coming...");
```

Use a function called printf

What's with the double-quotes?

A string is a sequence of characters. It is usually started and ended with a double-quote character (“”).


```
printf("The number is %d\n",  
      number);
```

Has information going in, but
differently

```
/* change the value of the  
    number and  
    * print it */
```

We've got even more to say in a
comment!

```
number = 8;
```

Change that number!

```
printf("The number is now %d,  
      not %d\n",  
        number, 5);  
... and more complexity ...
```

We can often safely split the
statement over two lines

(but strings are a bit different)

Review!

What's used for displaying stuff
on the screen?

```
return 0;
```

}

... and we're done!

An Exercise to do for next class!

- In the same project, change *int number* to *int fred*.
 - Execute.
 - Note the error.
- Why did the error occur?
 - Fix the error.
 - Execute.

Another one!

- Put a semicolon after the *int main()*
 - Execute.
 - Note the errors.
- Note that the errors aren't all that clear in terms of helping you solve the problem.
 - Undo the change.
 - Execute.

And yet another!

- Get rid of the `*/` at the end of the first comment.
 - Note the change of colour.
 - Execute.
 - Note the change of result.
 - Undo the change.
 - Execute.

And another ...

- Delete the closing " in the first string.
 - Execute.
 - Note the error.
- Undo the change.
 - Execute.

And another ...

- Delete the closing }.
 - Execute.
- Note the error.
- Undo the change.
 - Execute.

More!

- Do Exercise 1 in chapter 1 of the C book.
- Do Exercise 3 in chapter 1 of the C book.

Exercise 1, Chapter 1

On the screen, write the words:

she sells sea shells by the seashore

(a) all on one line, (b) on three
lines, (c) inside a box

Exercise 3, Chapter 1

Write a version of the *marathon* program in Section 1.3 on page 11, in which all constants and variables are of type `double`. Is the output of the program exactly the same as that of the original program?

Summary

1. Always start up eConestoga
2. Online introductions
3. We use Visual Studio
4. Set up your projects correctly
5. Edit/Compile/Link/Run
6. Your first program