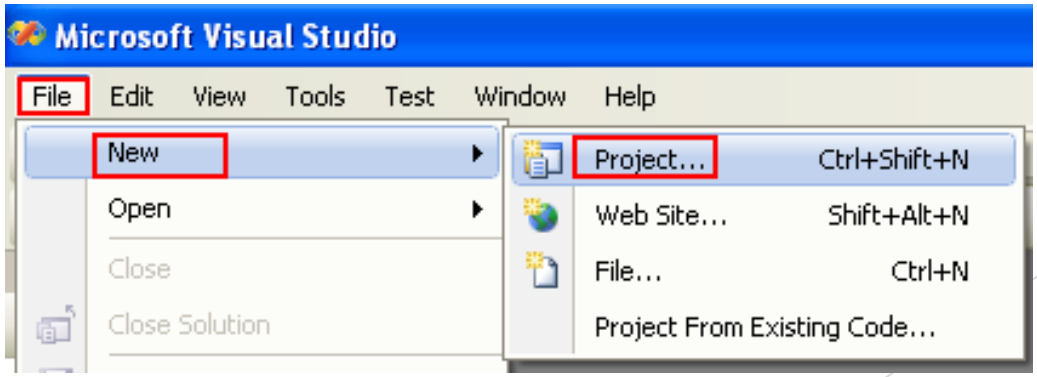
Using Visual C++ and Pelles C

-IDE & Compilers-

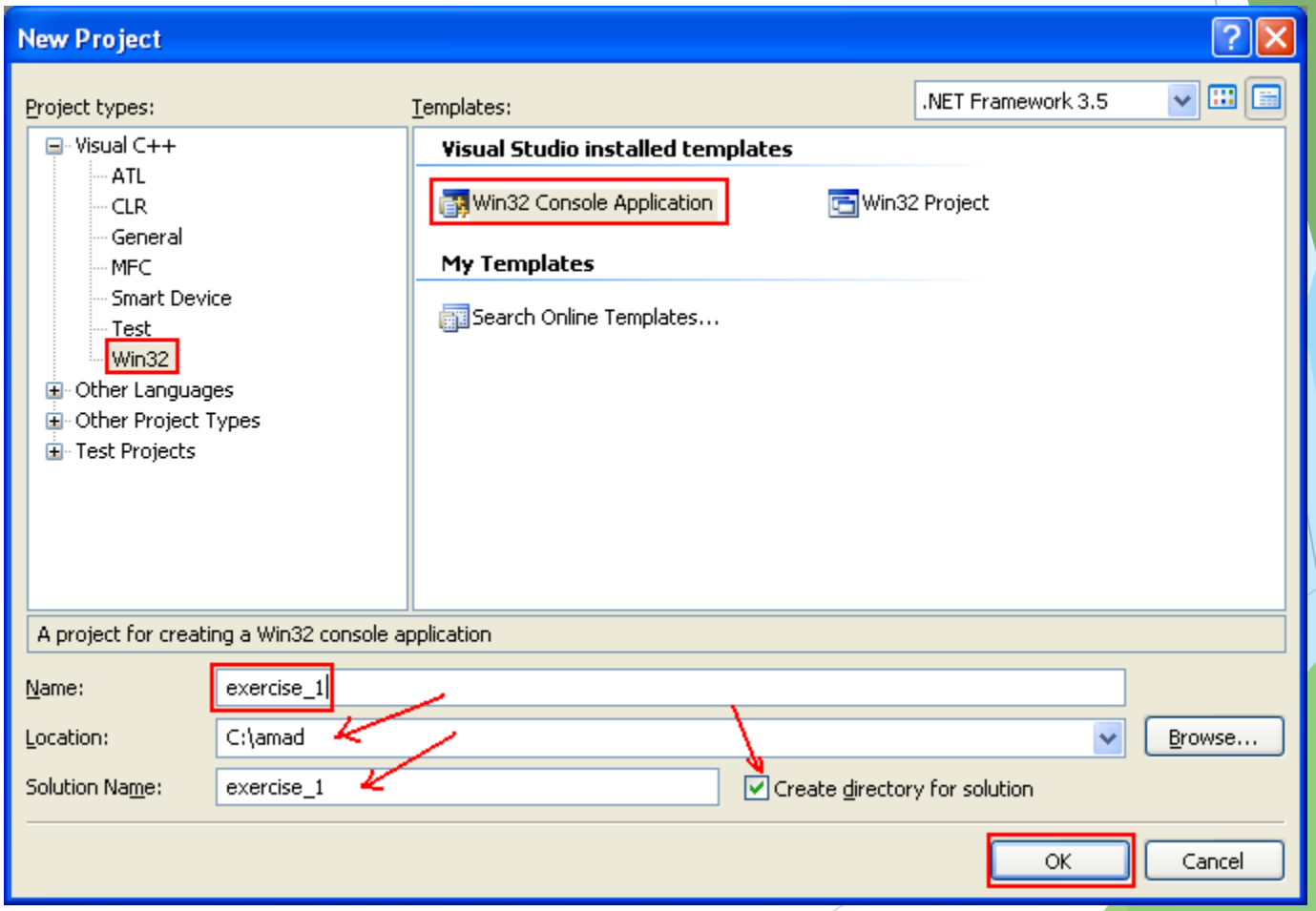
Using VC++ (2008)

- In this session we will learn how to use VC++ to build a sample C program.
- We assume VC++ (Visual Studio) was successfully installed.
- Step: Launch VC++.
- Step: Click `File` menu > `New` sub-menu > select `Project…` sub-menu.



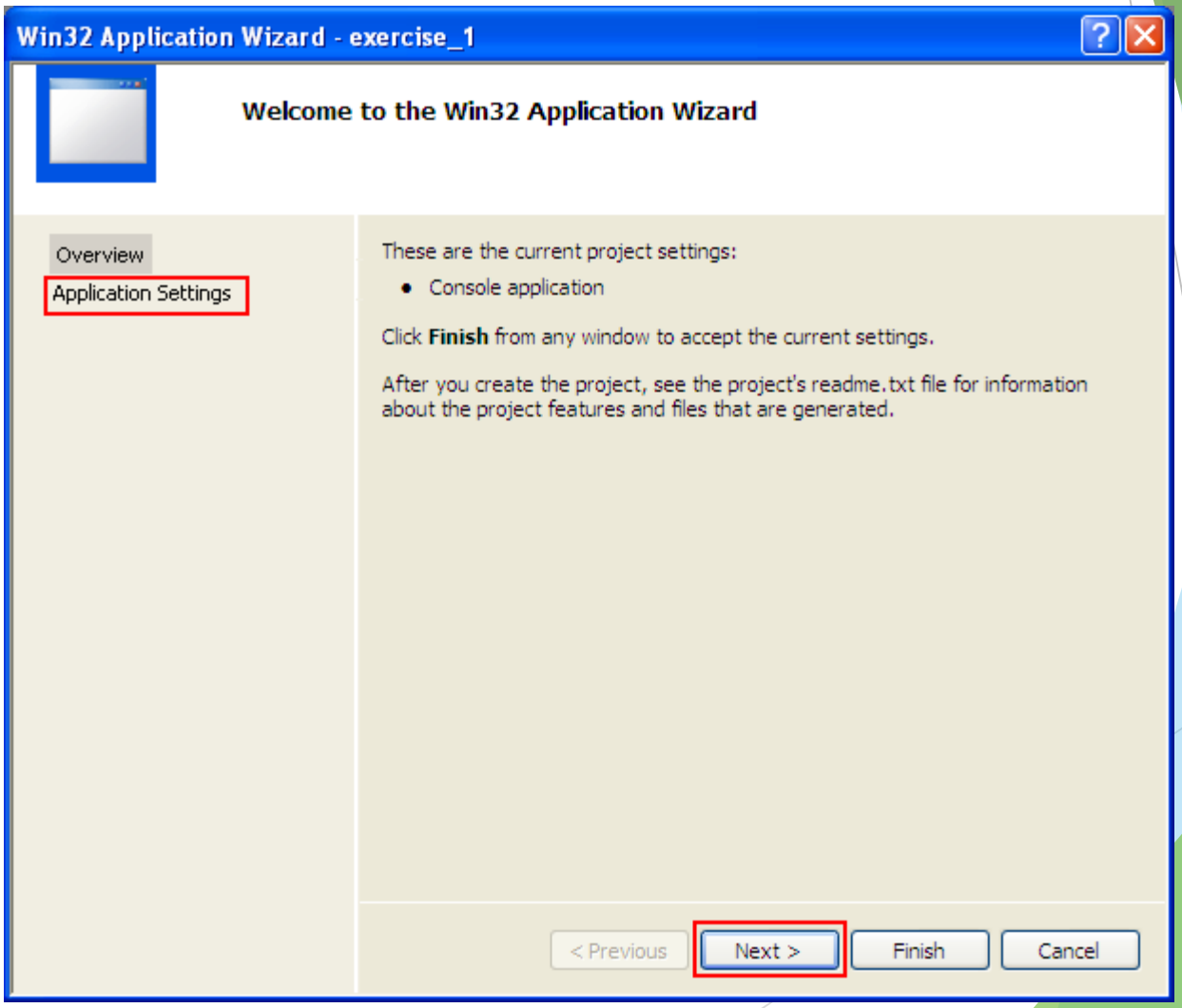
Using VC++

- Step: select `Win32` for the Project types > select `Win32 Console Application` for Templates.
- Step: Enter the project `Name` > click `OK` button.
- We just keep other settings to default.



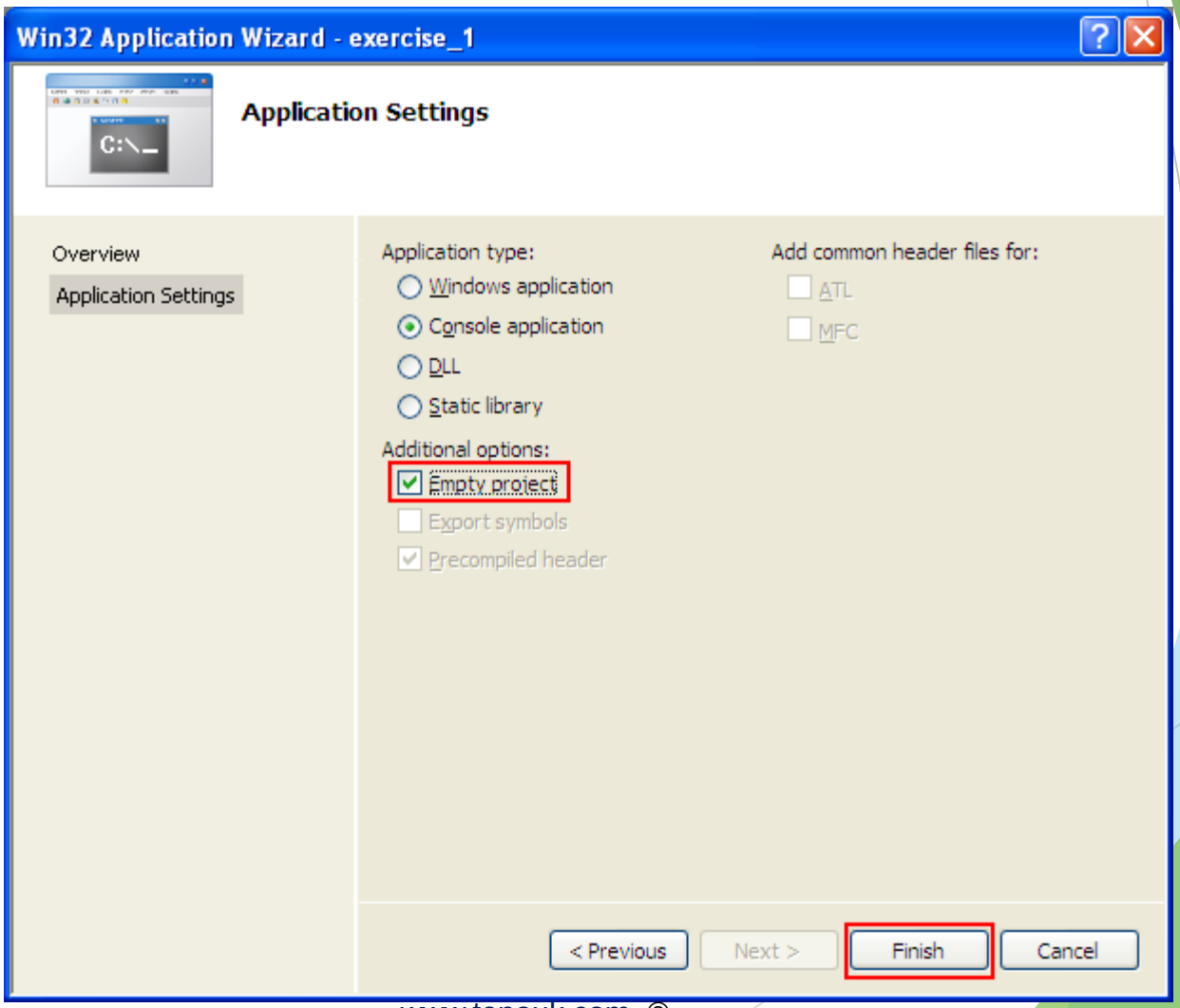
Using VC++

- Step: select `Application Settings` (or `Next >` button).



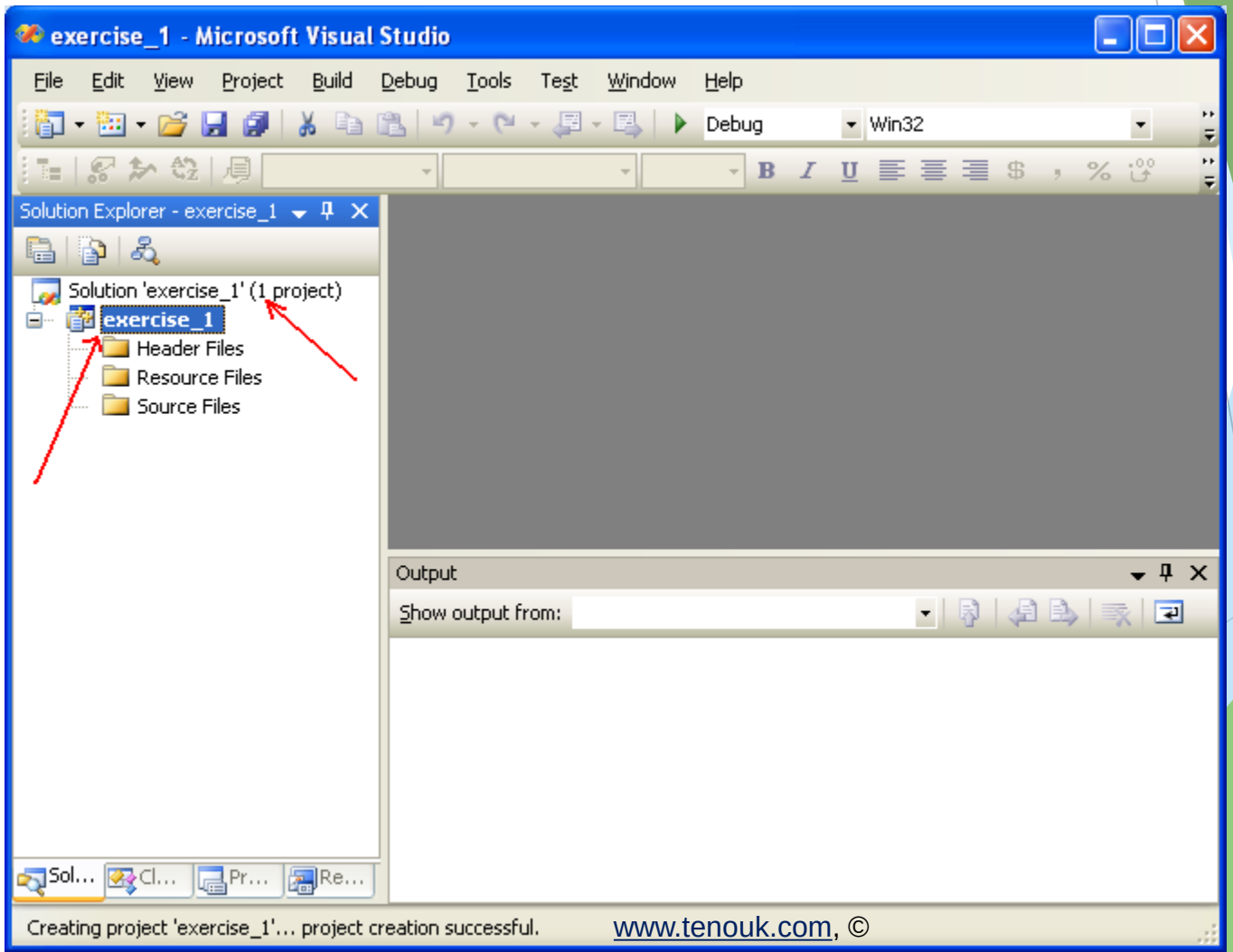
Using VC++

- Step: select `Empty project` for Additional options > click `Finish` button.
- Other settings set to default because we just want an empty Win32 console mode application.



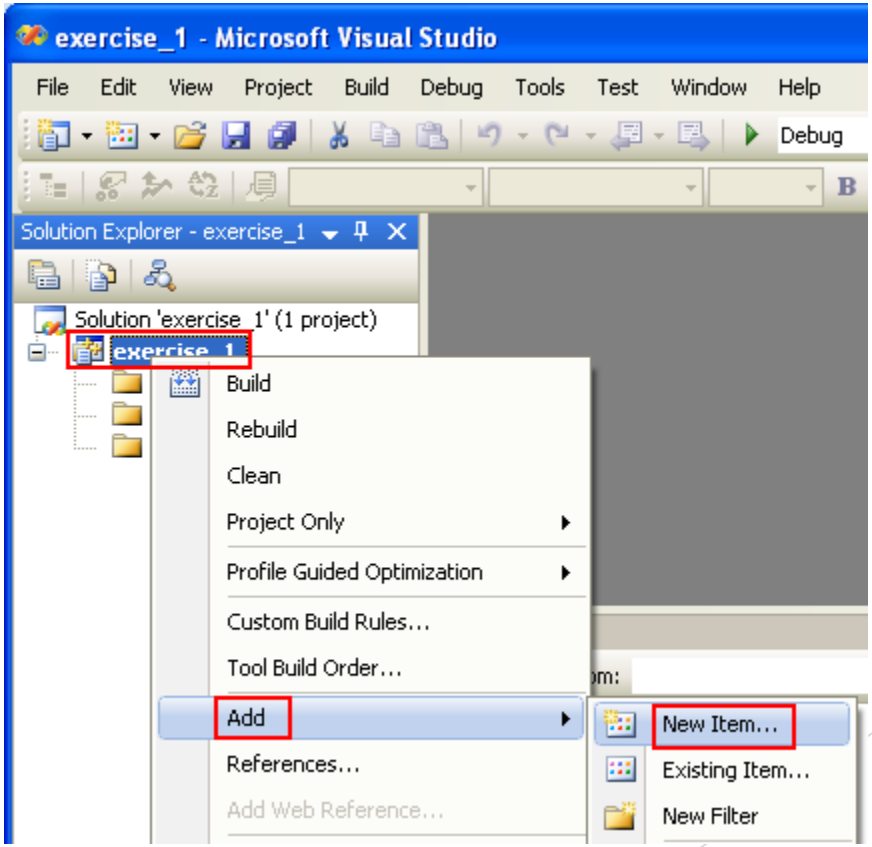
Using VC++

- Now, on the left pane we have one solution and in it we have one project that we just created.
- First project creation will create the first solution automatically.
- At this stage we just having an empty project.



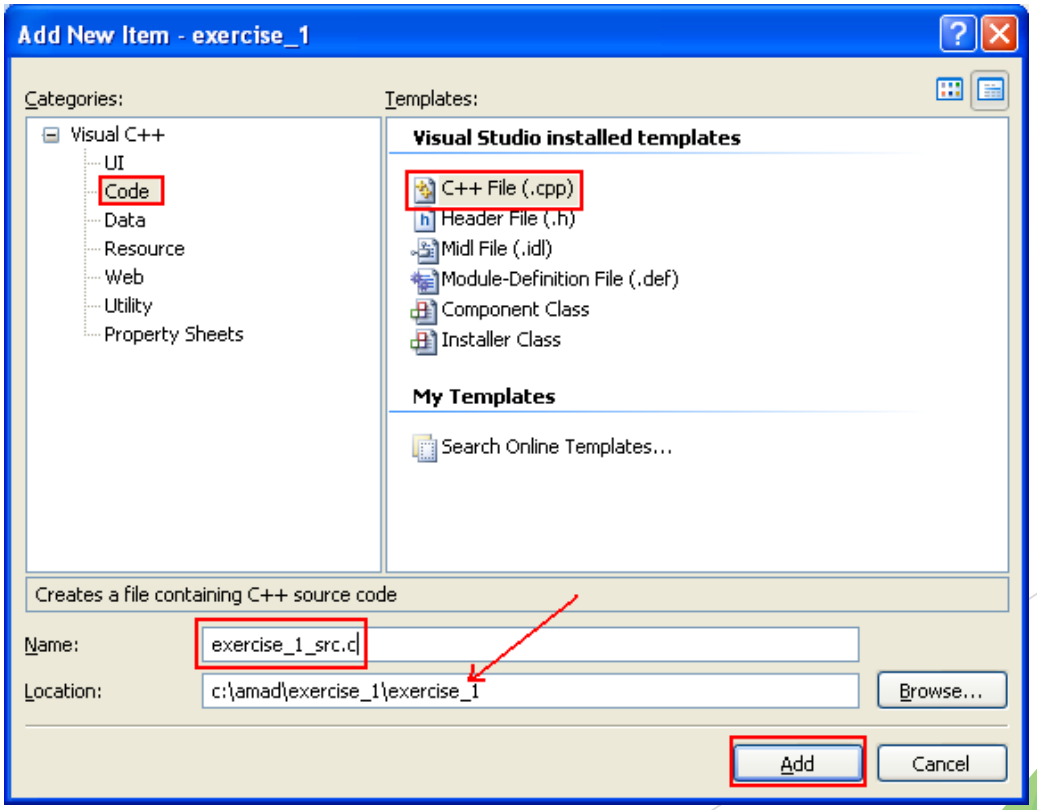
Using VC++

- Step: select the project root folder > right-click mouse > select Add sub-menu > select `New Item`… sub-menu.
- We are going to add C a source file to the project.



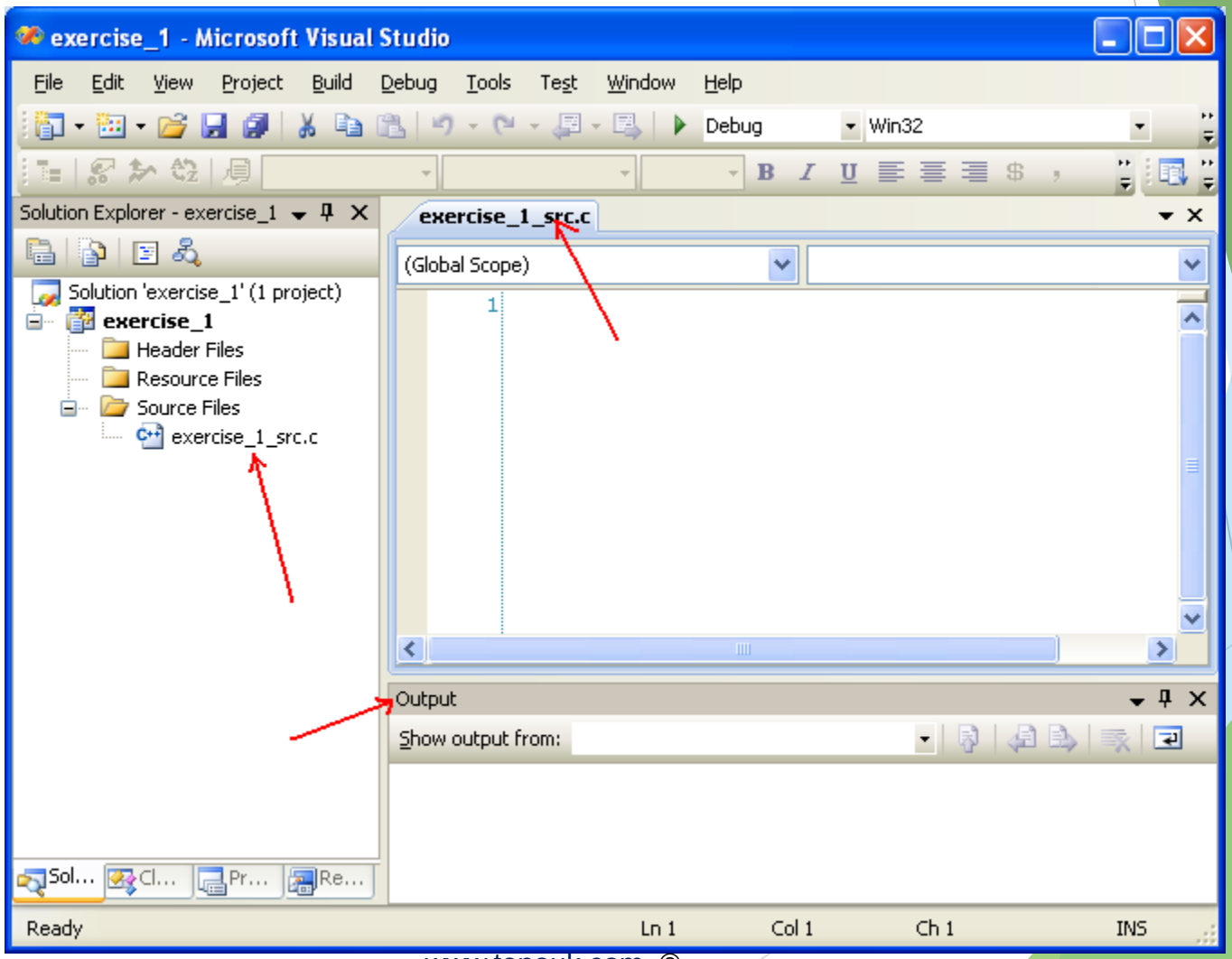
Using VC++

- Step: select `Code` for `Categories` > select `C++ File (.cpp)` for `Templates`.
- Step: put the source file name with `.c` extension for the `Name`.
- Step: change the `Location` if needed > click `Add` button.
- If we do not put the `.c` extension, the file will be defaulted to `.cpp` which is C++ source file.
- For C source code portability, we need to put `.c` manually in VC++.



Using VC++

- Now we have an empty C source file on the right pane.
- If the file is not opened, just double-click the file link on the left pane.



Using VC++

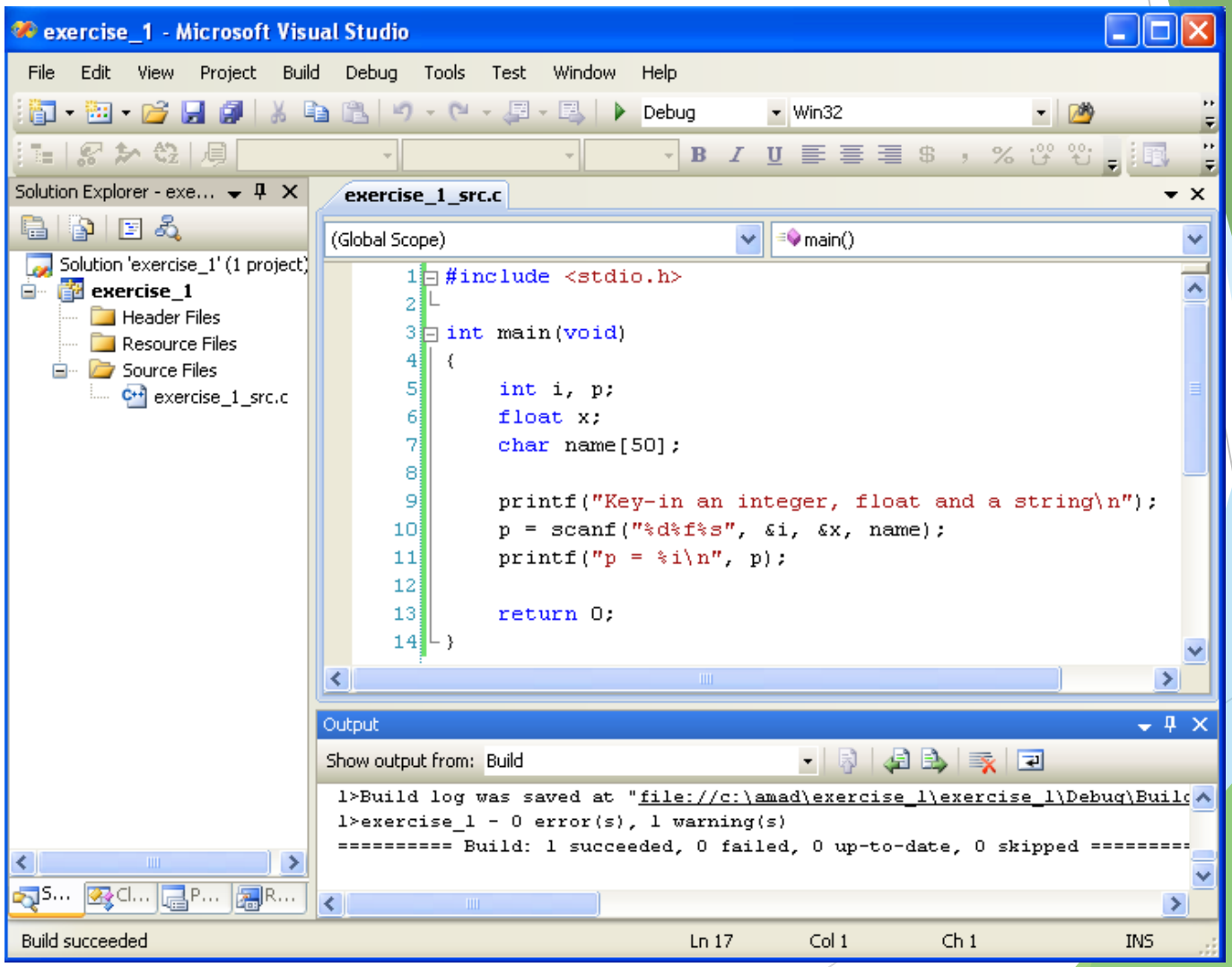
- Step: Copy and paste the following C source code to the source file.

```
#include <stdio.h>

int main(void)
{
int i, p;
float x;
char name[50];

printf("Key-in an integer, float and a string\n");
p = scanf("%d%f%s", &i, &x, name);
printf("p = %i\n", p);

return 0;
}
```

Code sample in text 1

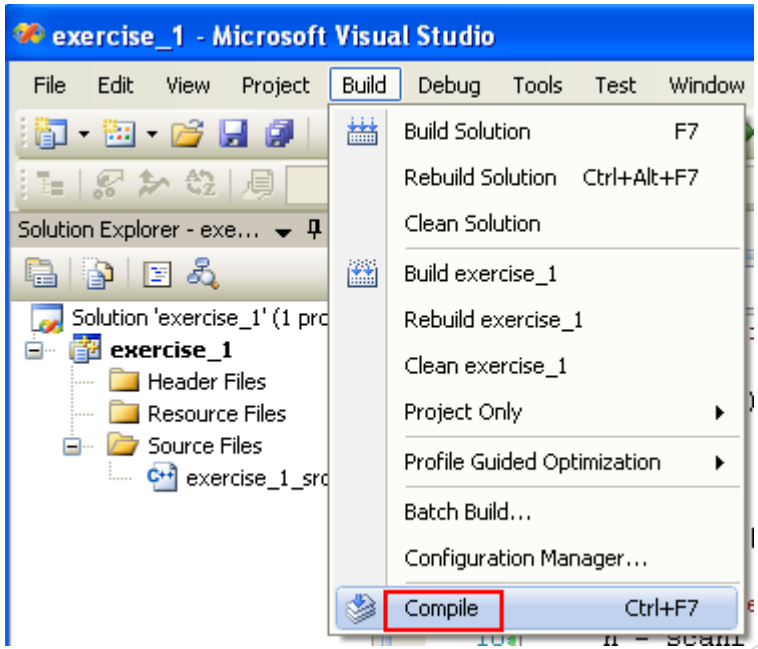
Using VC++

- Now the C source file has source code in it.
- We are ready to build (compile and link) the project.



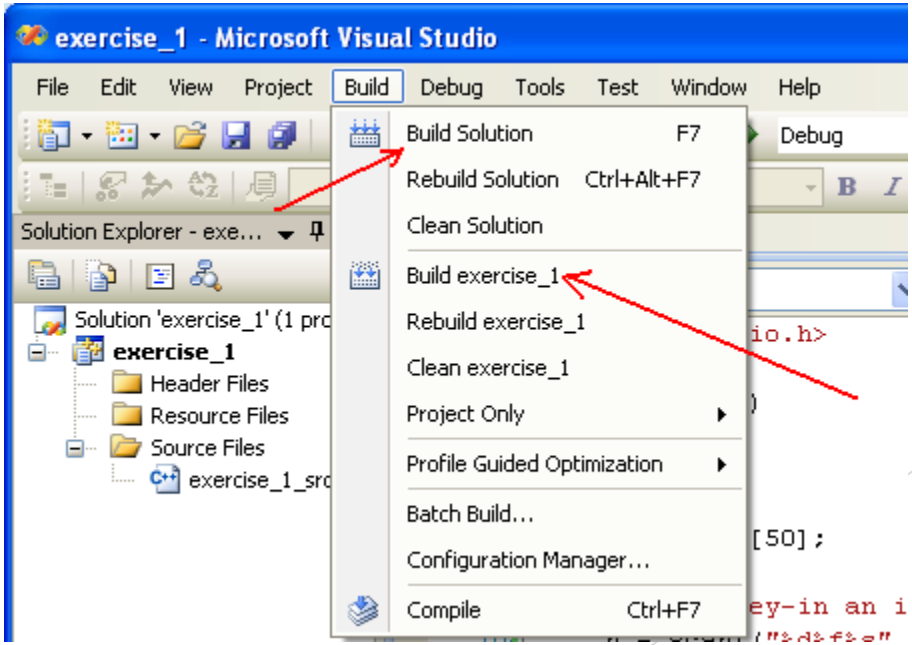
Using VC++

- Step: select `Build` menu > select `Compile` sub-menu.



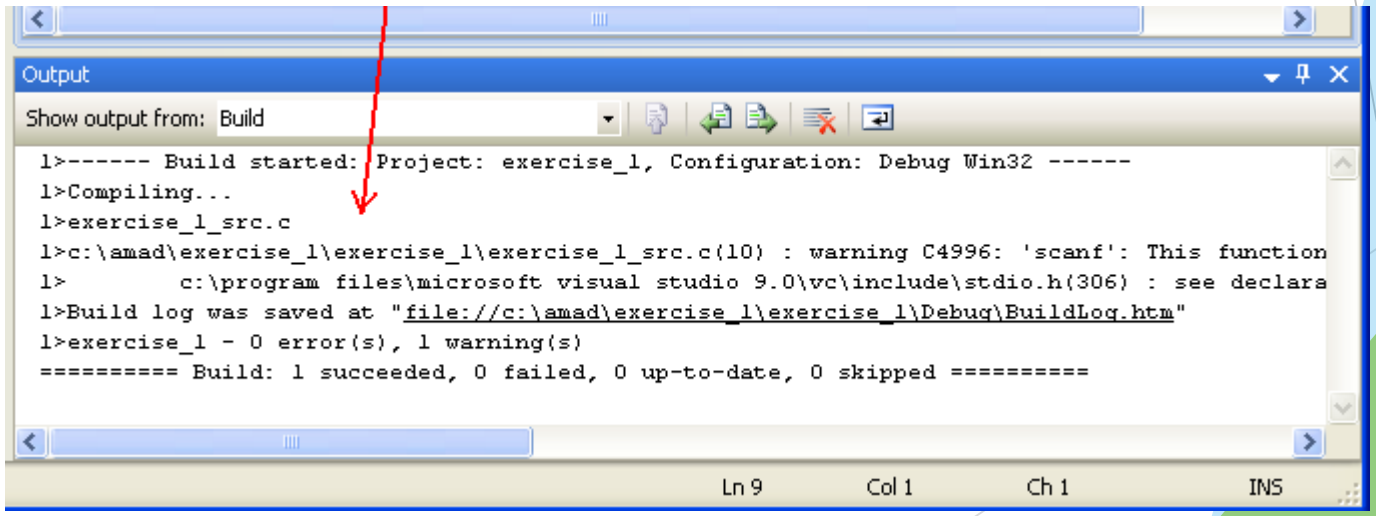
Using VC++

- Optionally, we can directly build the solution (`Build Solution` sub-menu) or we can just build the project (`Build exercise_1` in this case).
- Both steps will compile and link the needed files.
- However in this case we only have 1 solution and in it we only have 1 project and in it we only have 1 C source file!
- There can be more than 1 solution and in 1 solution there can be more projects and in every projects there can be 100s or 1000s files!!!



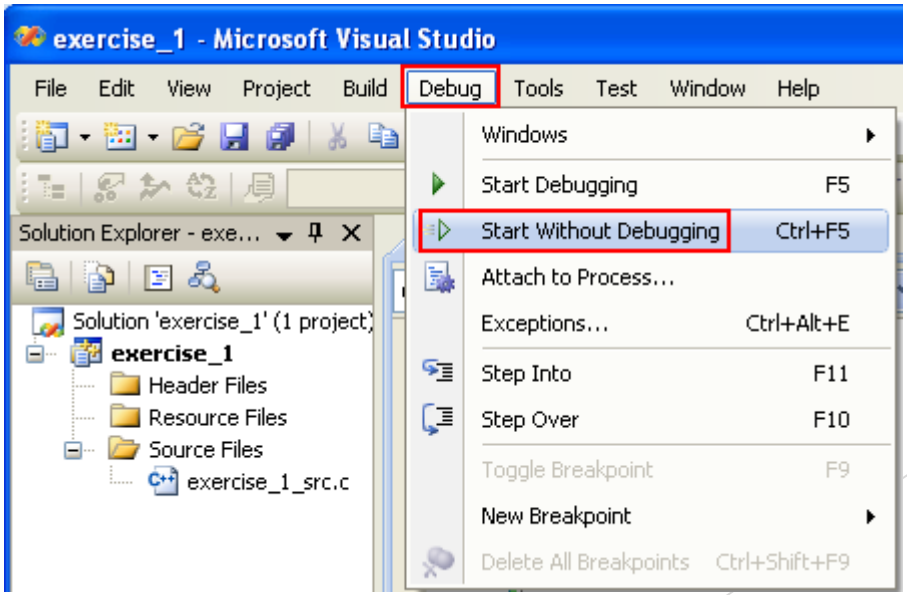
Using VC++

- The output of the compiling process can be seen in the `Output` window.
- You can invoke the `Output` windows by clicking `View` menu and selecting `Output` sub-menu (or `Alt + 2`) – VS 2008.
- We have to make sure there is no error (optionally and/or warning) else the project/program cannot be run.



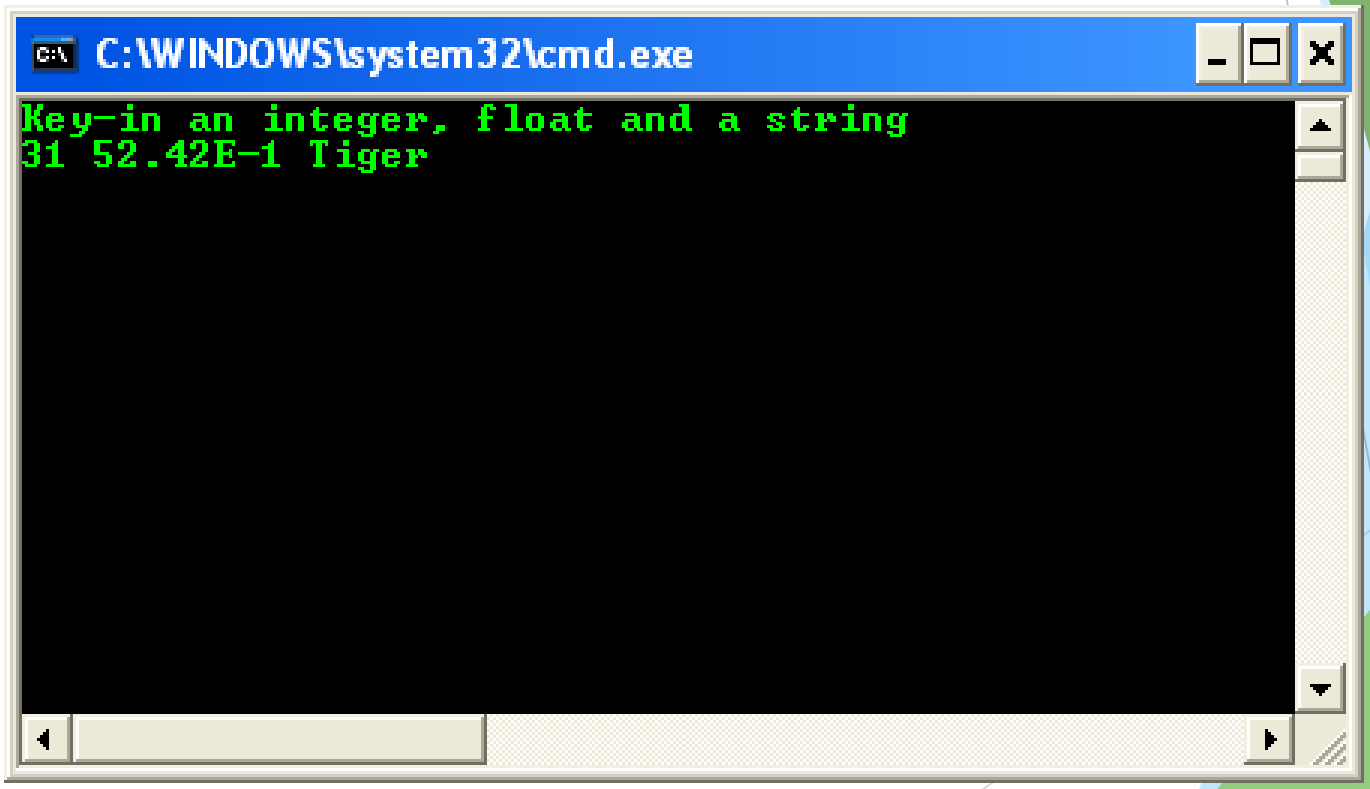
Using VC++

- Provided there is no error during the building, we are ready to run the program.
- Step: click `Debug` menu > select `Start Without Debugging` sub-menu.
- We are not going to debug this program but just to run it.
- So we choose `Start Without Debugging` instead of `Start Debugging`.



Using VC++

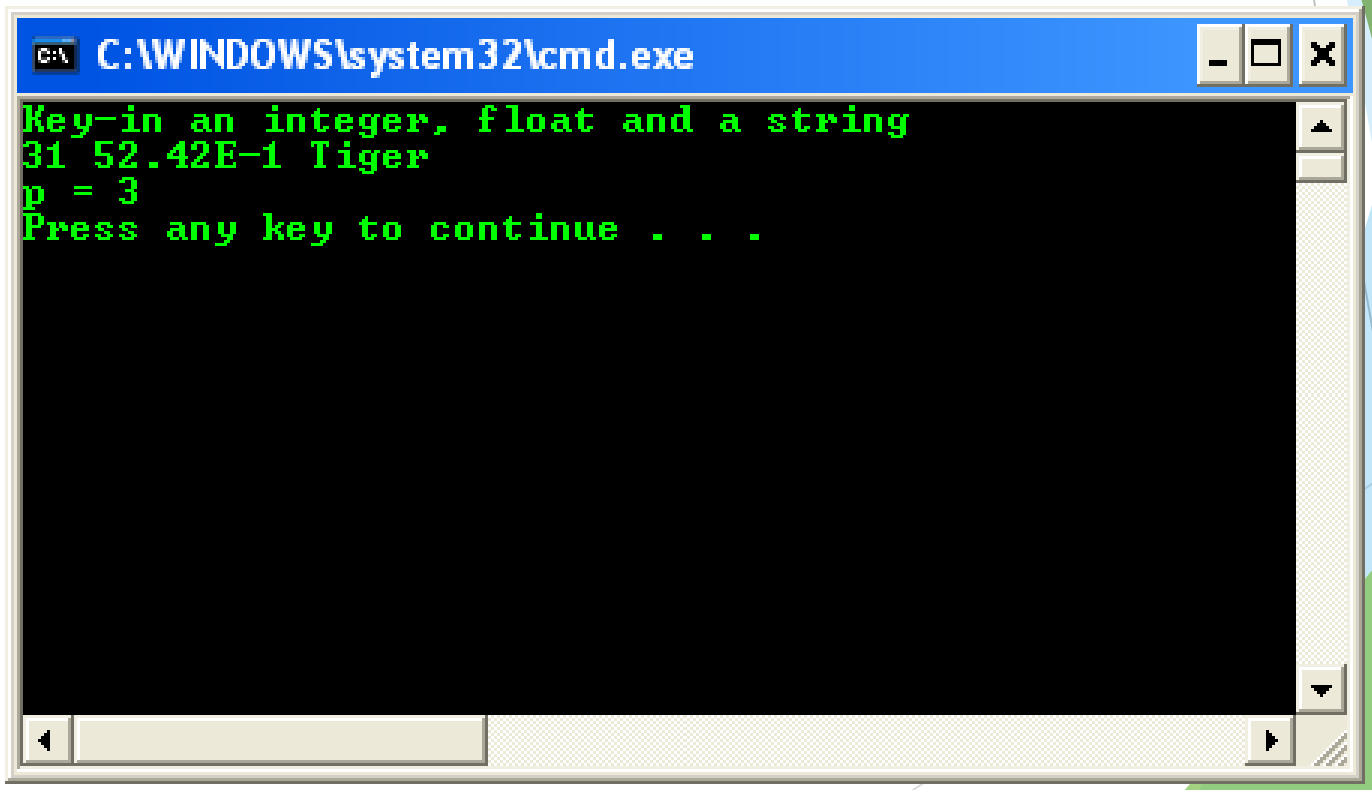
- Now the console windows launched, ready to accept our input.
- Step: For the purpose of learning, key-in "`31 52.42E-1 Tiger`" and press `Enter` key. Of course without the double quotes.
- A space (whitespace) terminate C statement and in this case terminate an input.



Using VC++

- What this program does is:

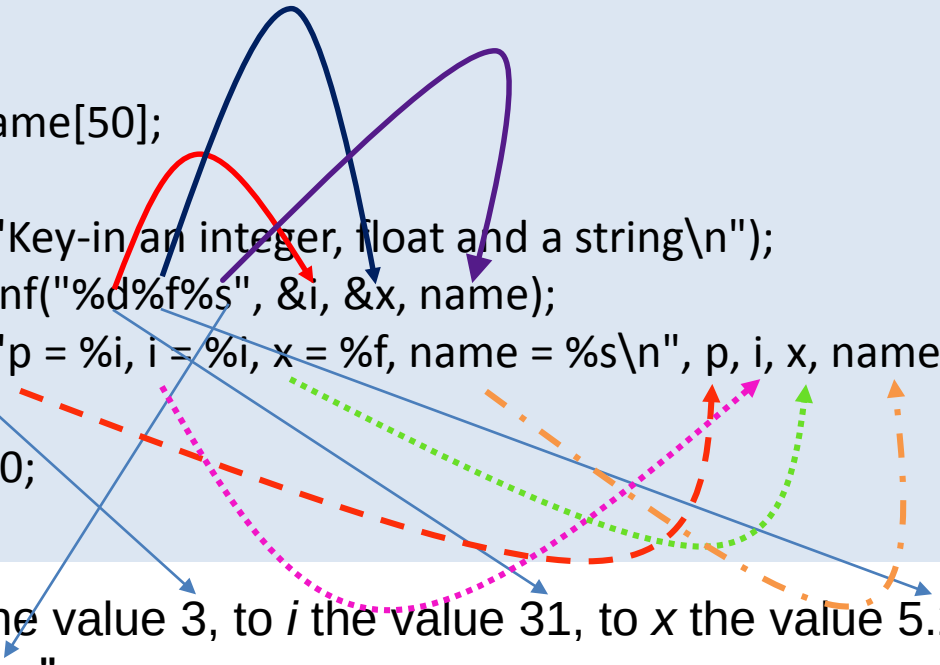
Prompt user for inputs, assigns to p the value 3, to i the value 31, to x the value 5.242, and name contains the string "Tiger" and print p's value.



Using VC++

- Step: Replace the previous C source code with the following.
- Step: re-build and re-run the project key-in `31 52.42E-1 Tiger` and press `Enter` key
- The details can be depicted as shown below.

```
#include <stdio.h>

int main(void)
{
int i, p;
float x;
char name[50];

printf("Key-in an integer, float and a string\n");
p = scanf("%d%f%s", &i, &x, name);
printf("p = %i, i = %i, x = %f, name = %s\n", p, i, x, name);

return 0;
}
```

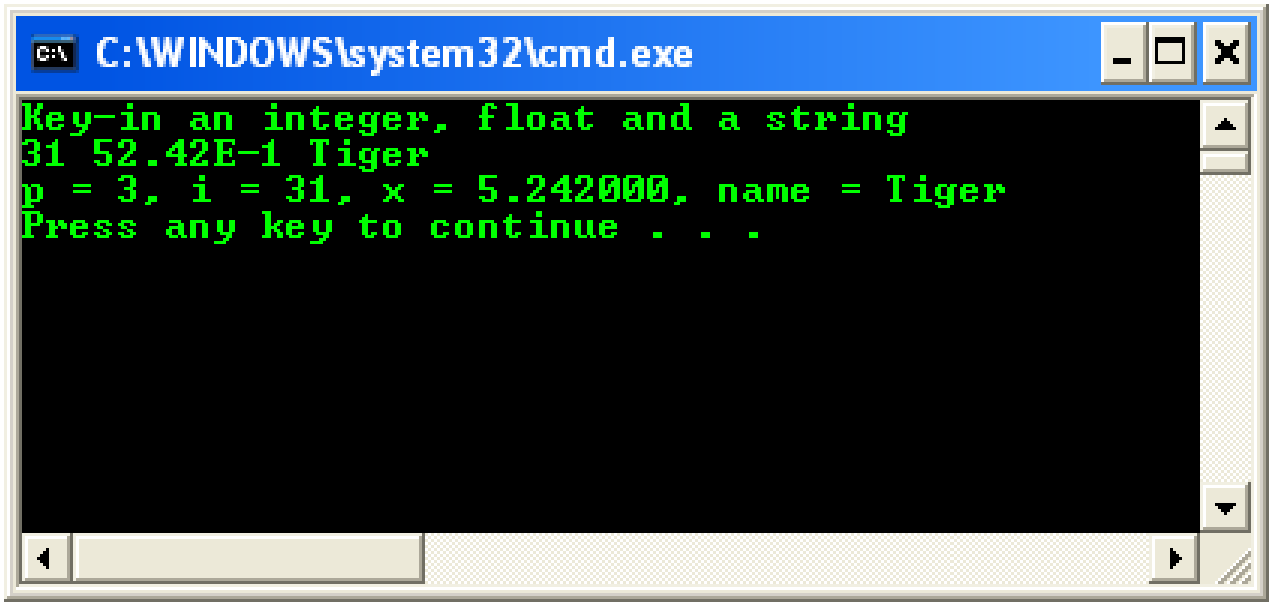


assigns to *p* the value 3, to *i* the value 31, to *x* the value 5.242, and *name* contains the string "Tiger".

Code sample in text 2

Using VC++

- The following is a sample output.



assigns to *p* the value 3, to *i* the value 31, to *x* the value 5.242, and *name* contains the string "Tiger".

Using VC++

- Step: next, try re-run the program and key-in another different inputs.

```
#include <stdio.h>

int main(void)
{
int i, p;
float x;
char name[50];

printf("Key-in an integer, float and a string\n");
p = scanf("%d%f%s", &i, &x, name);
printf("p = %i, i = %i, x = %f, name = %s\n", p, i, x, name);

scanf("%2d%f%*d %[0123456789]", &i, &x, name);
printf("i = %i, x = %f, name = %s\n", i, x, name);

return 0;
}
```

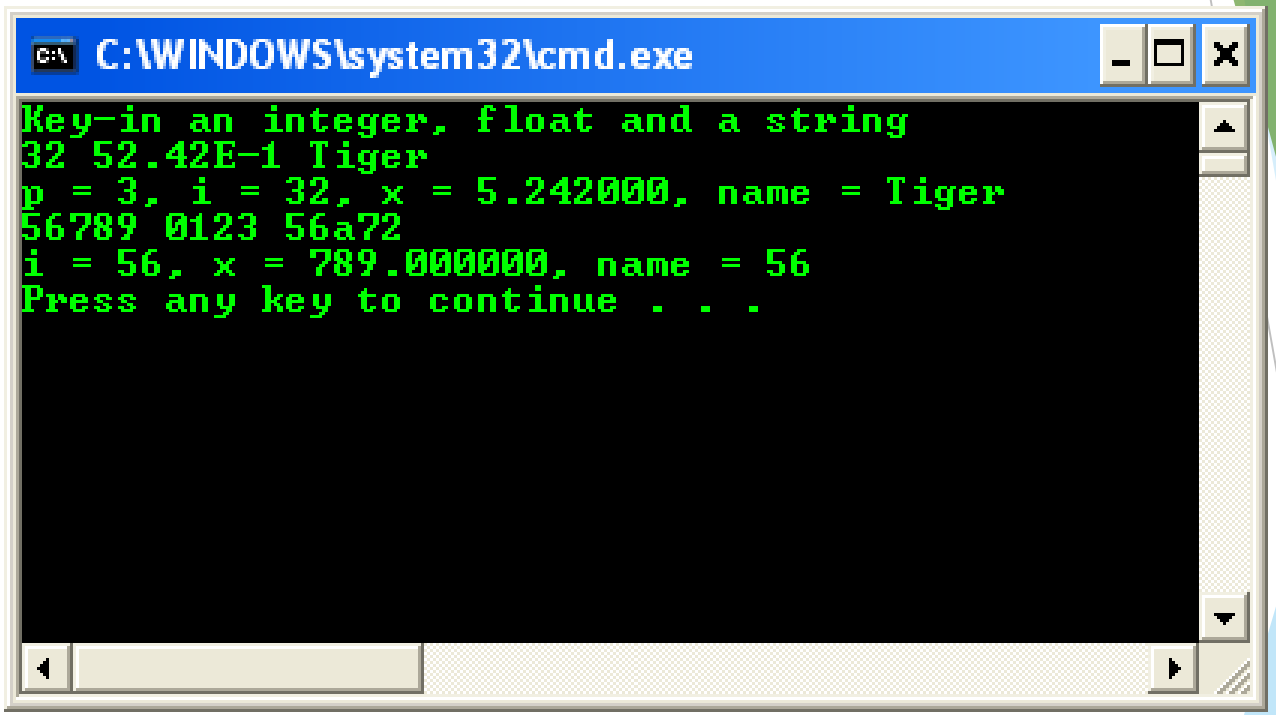
```
32 52.42E-1 Tiger

56789 0123 56a72
```

Code sample in text 3

Assigns 56 to *i*, 789.0 to *x*, skips 0123, and places the string "56\0" in *name*

Using VC++

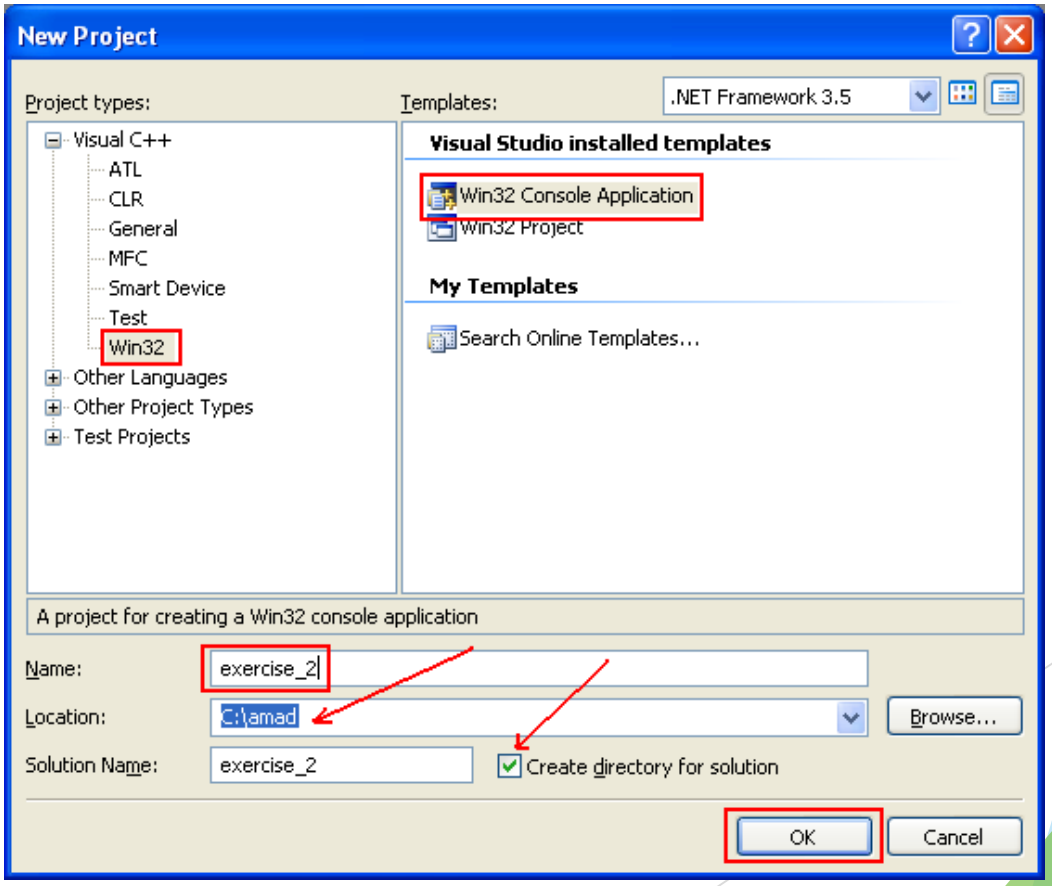
- The following is a sample output.



For the second input: Assigns 56 to *i*, 789.0 to *x*, skips 0123, and places the string "56\0" in *name*

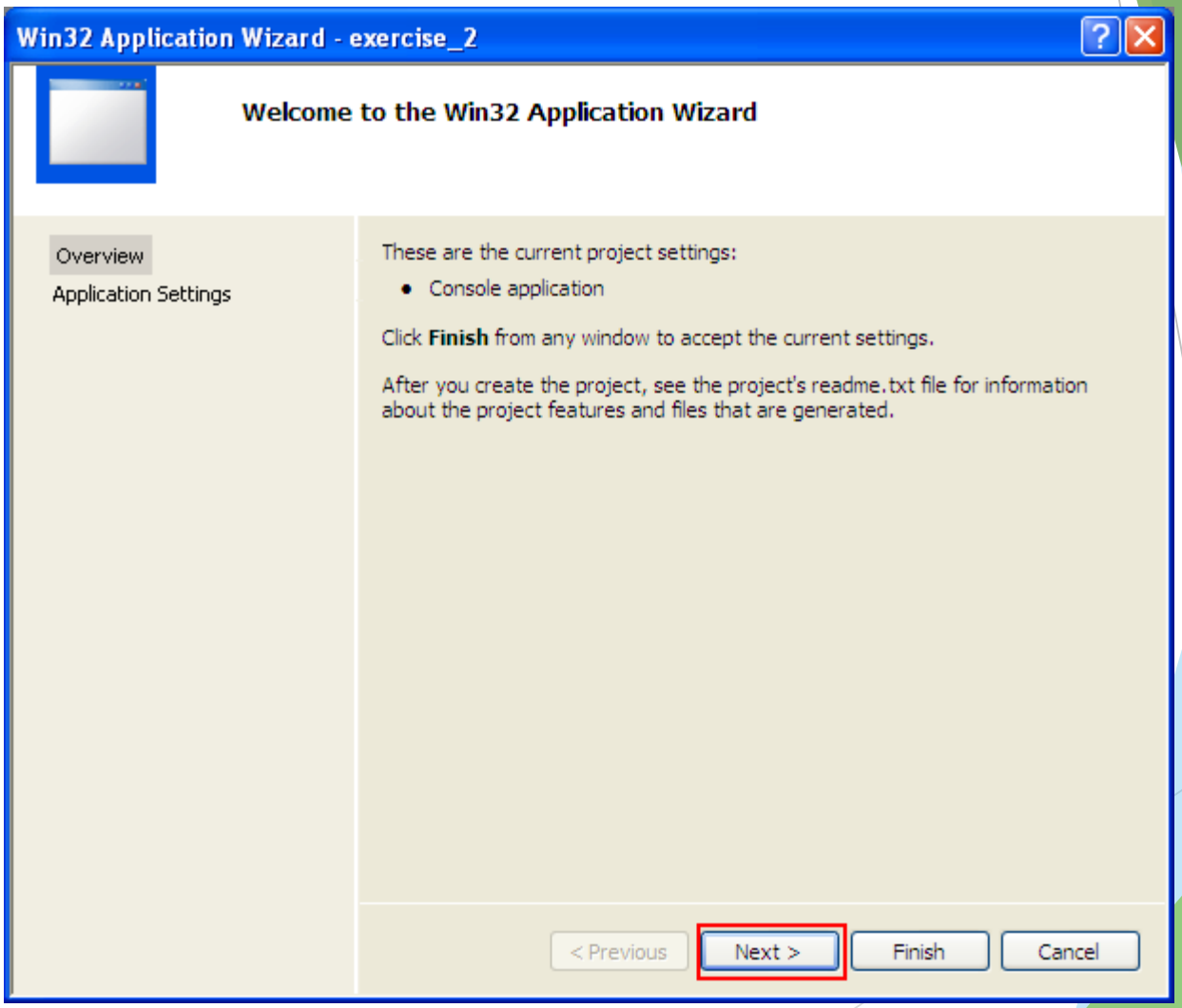
Using VC++

- In the following steps, we are going to use the default extension `.cpp` and then 'force' compiler to compile the program as C code.
- Step: Close the previous Solution: select `File` menu > select `Close Solution`.
- Step: Create new empty Win32 console mode application project as done previously.



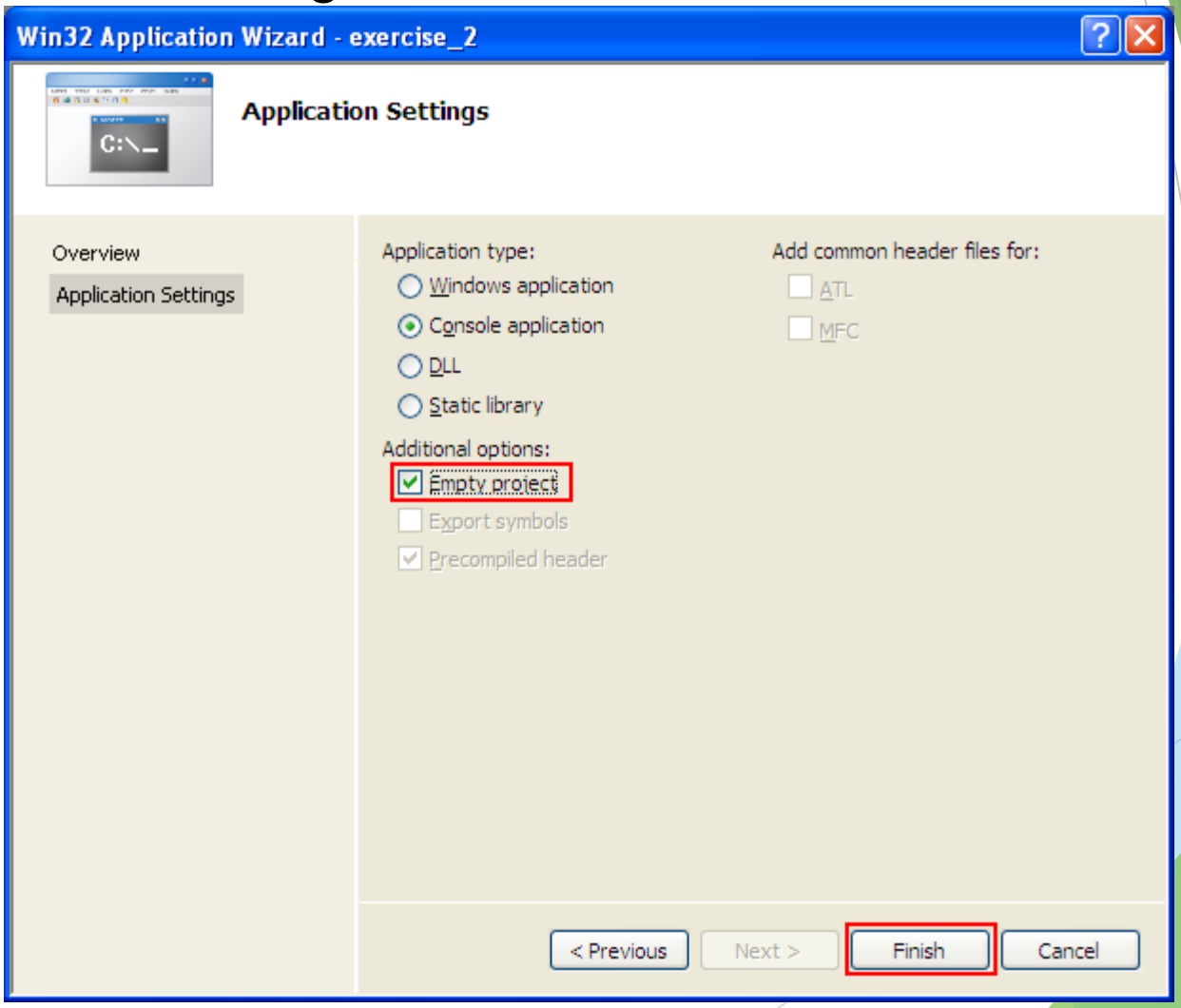
Using VC++

- Step: click `Application Settings` or click `Next >` button.



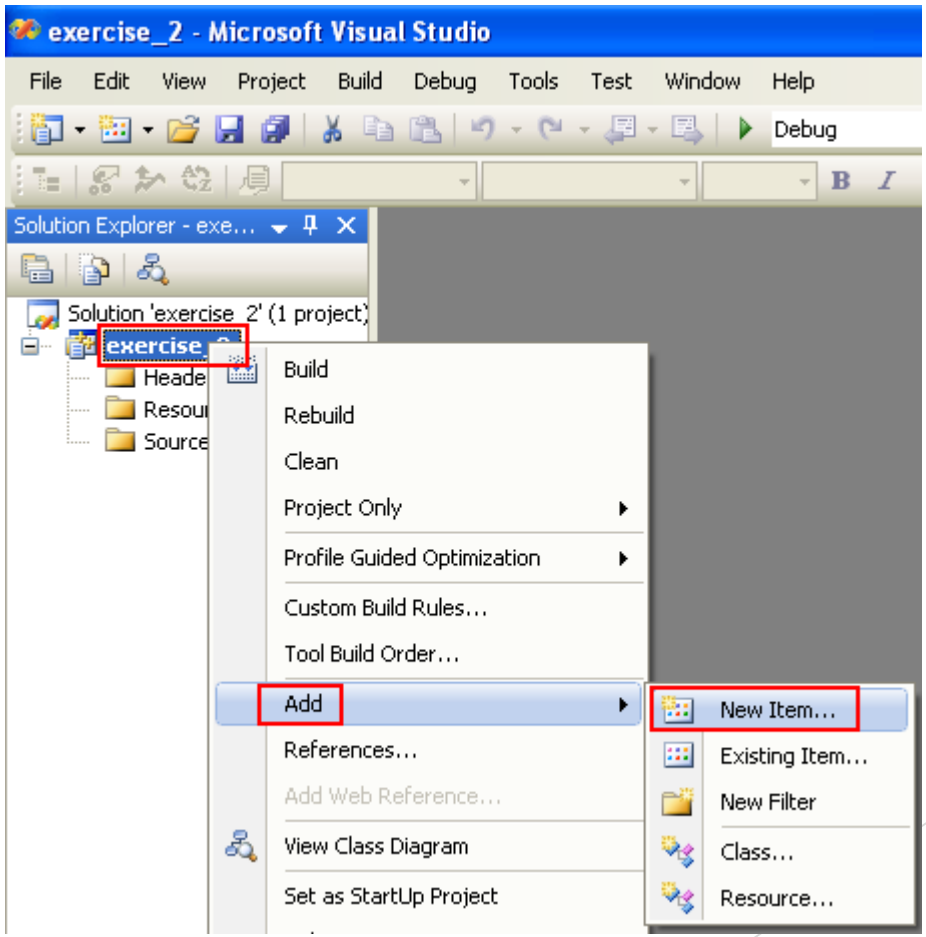
Using VC++

- Step: select `Empty project` tick box > click `Finish` button.
- Left other settings as default.



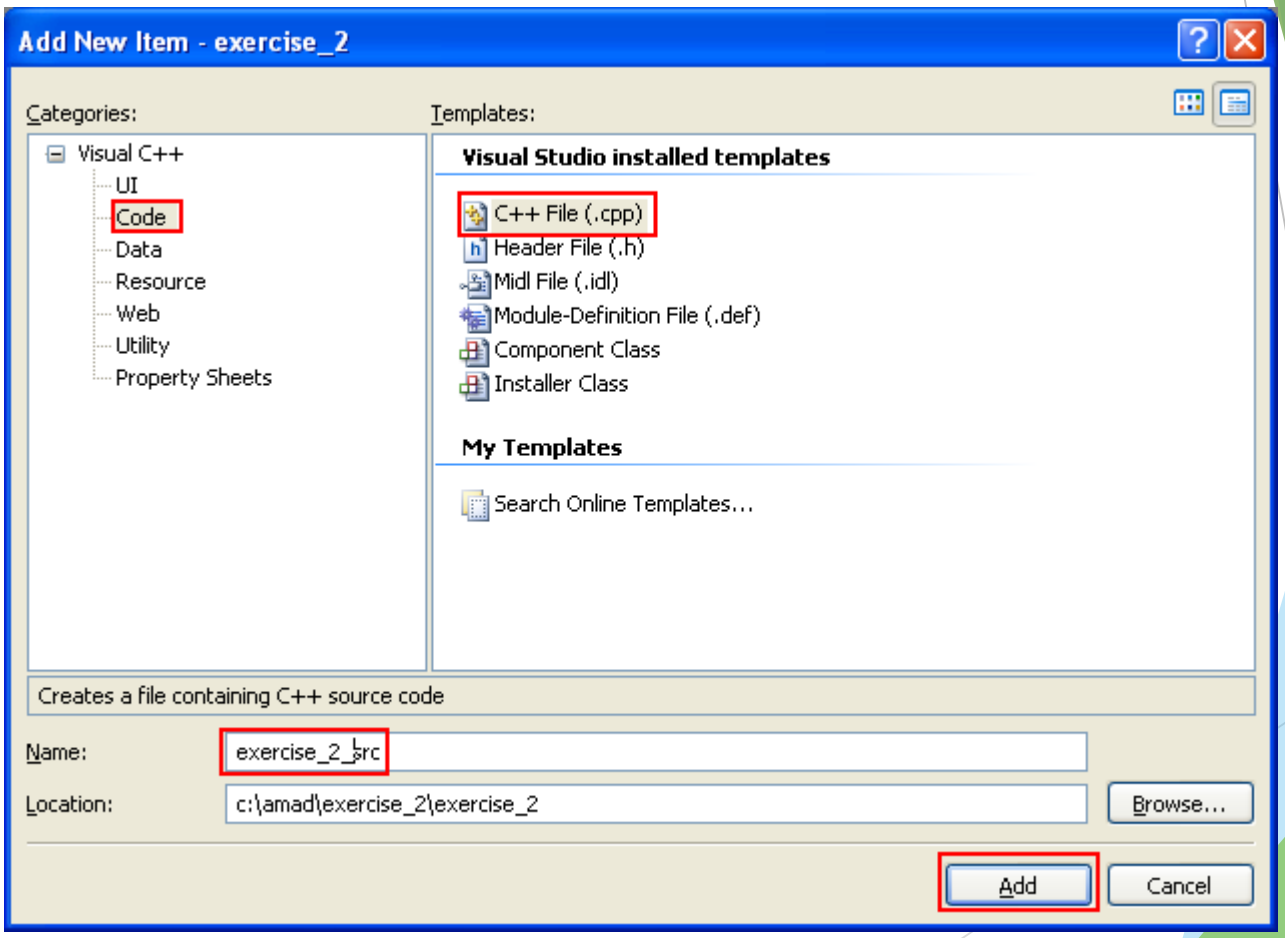
Using VC++

- Step: add the source file. Select the project root folder > right-click mouse > select `Add` sub-menu > select `New Item` sub-menu.



Using VC++

- Step: However in this step we are not adding the `.c` extension (VC++ will add `.cpp` by default)



Using VC++

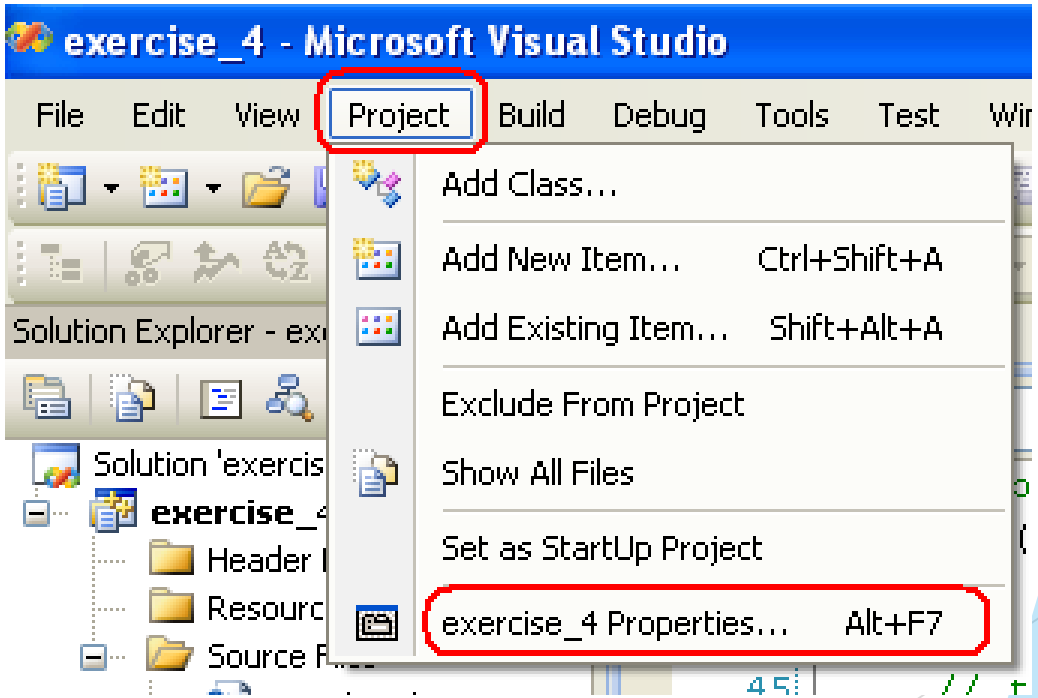
- Step: Copy and paste the following C source code.

```
#include <stdio.h>

int main(void)
{
printf("%%#x:\t%#x\n", 141);
printf("%%g:\t%g\n", 5.1234567);
printf("%%07d:\t%07d\n", 123);
printf("%%+d:\t%+d\n", 456);
printf("%%-7d:\t%-7d,%%-5d:\t%-5d,\n", 33, 44);
printf("%%7s:\t%7s\n", "123456");
printf("%%s:\t%s\n", "my name");
printf("%%4f:\t%4f\n", 41.1234);
printf("%%8.5f:\t%8.5f\n", 1323.2346);
printf("%%.3f:\t%.3f\n", 15.4321);
printf("%%hd:\t%hd\n", 7);
printf("%%ld:\t%ld\n", 9);
printf("%%Lg:\t%Lg\n", 45.23456123);

return 0;
}
```

Code sample in text 4

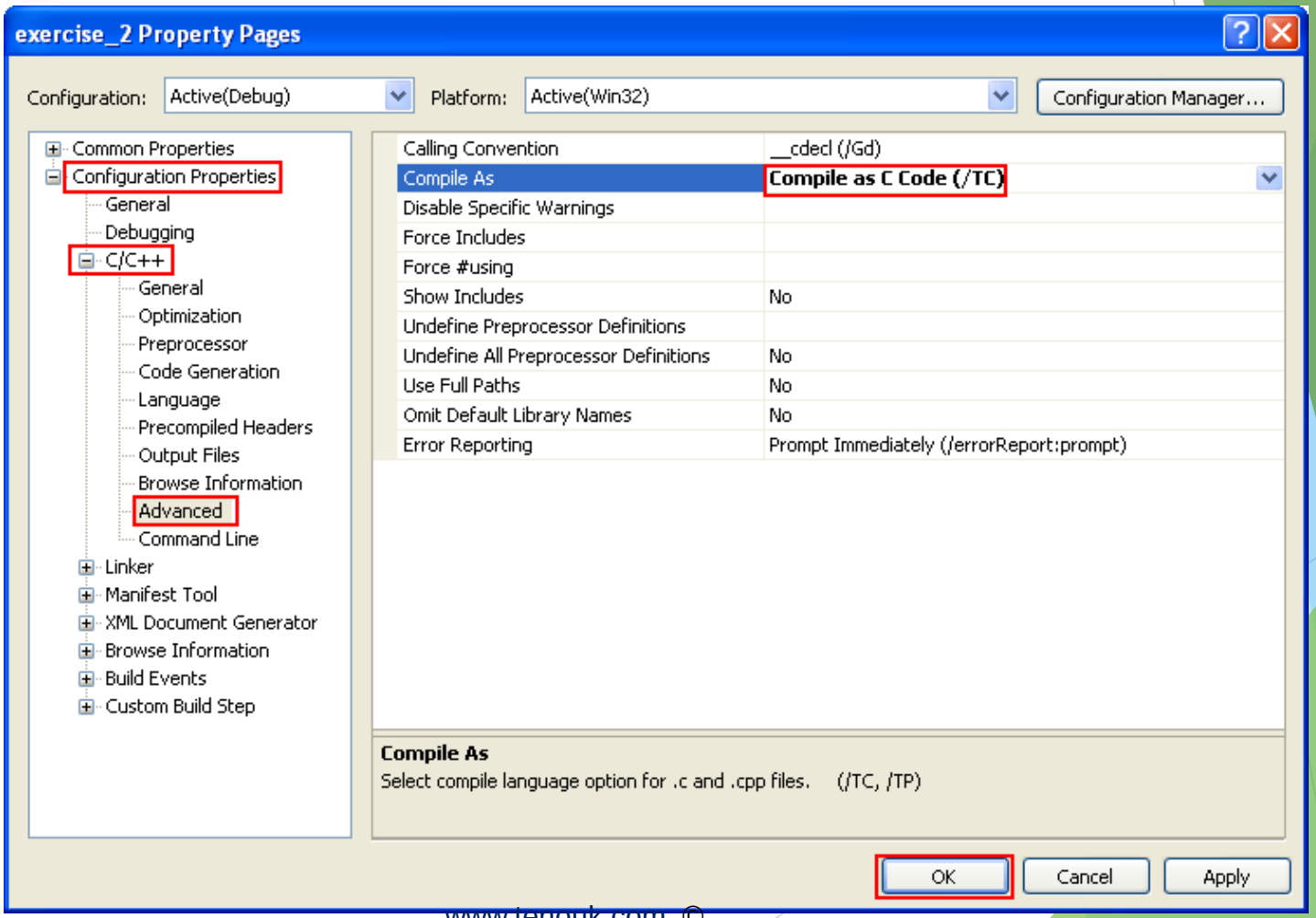
Using VC++

- In order to force this C source code built as C code we need to tell compiler to do so for this project.
- Step: select `Project` menu > select *`your_project_name`* `Properties…` sub-menu.



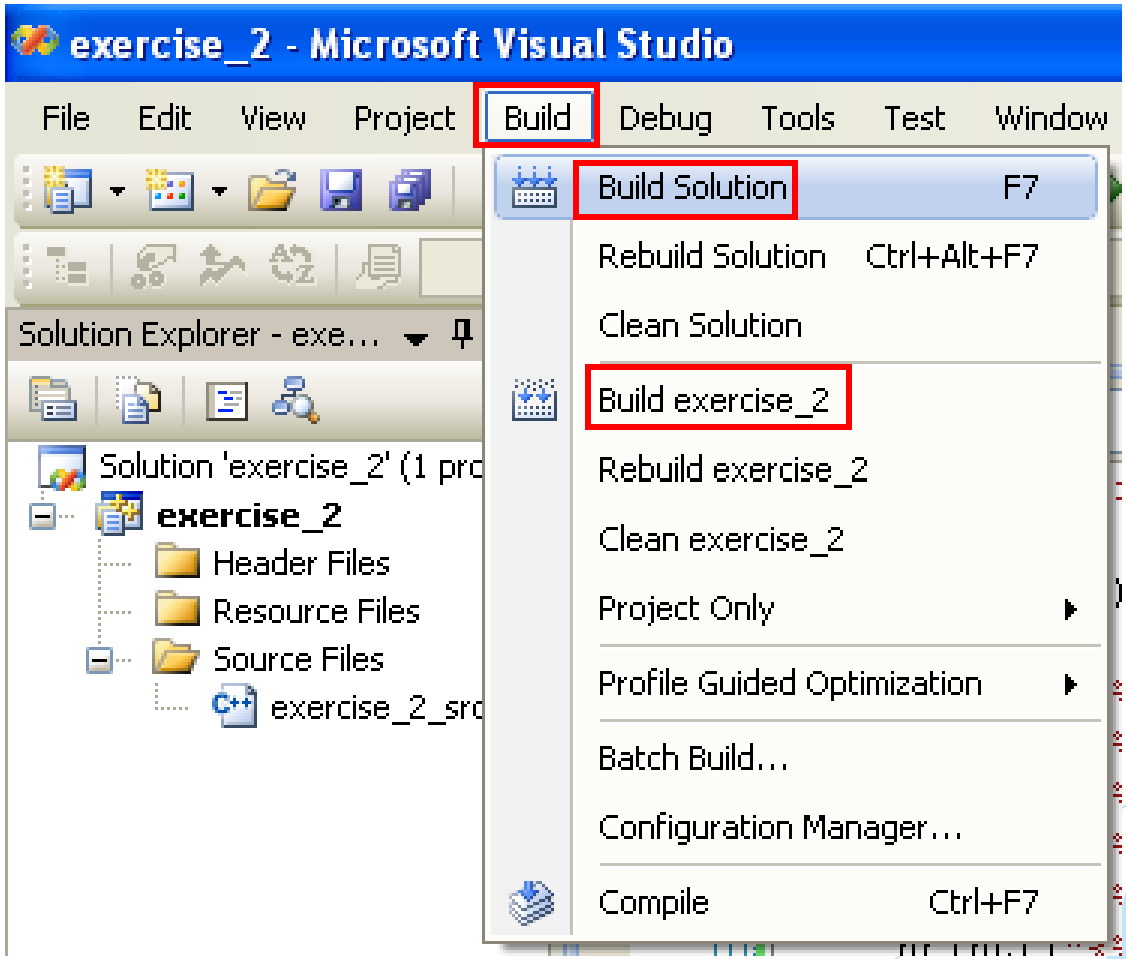
Using VC++

- Step: expand the `Configuration Properties` folder > expand the `C/C++` sub-folder > select `Advanced` link from the left pane.
- Step: on the right pane, for `Compile As` option, select `Compile as C Code (/TC)` > click `OK` button.



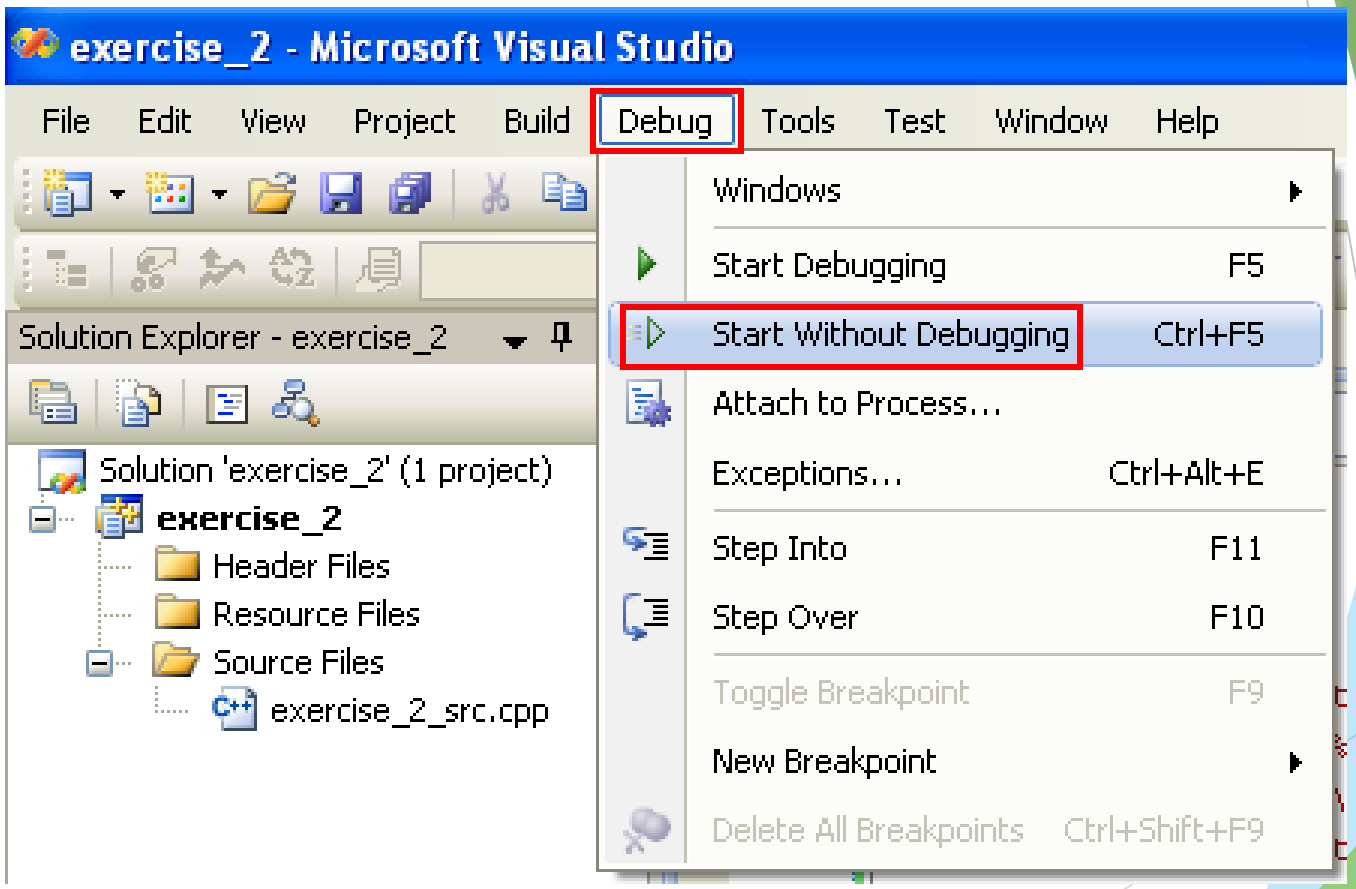
Using VC++

- Step: Build the program as done previously. Make sure there is no error.



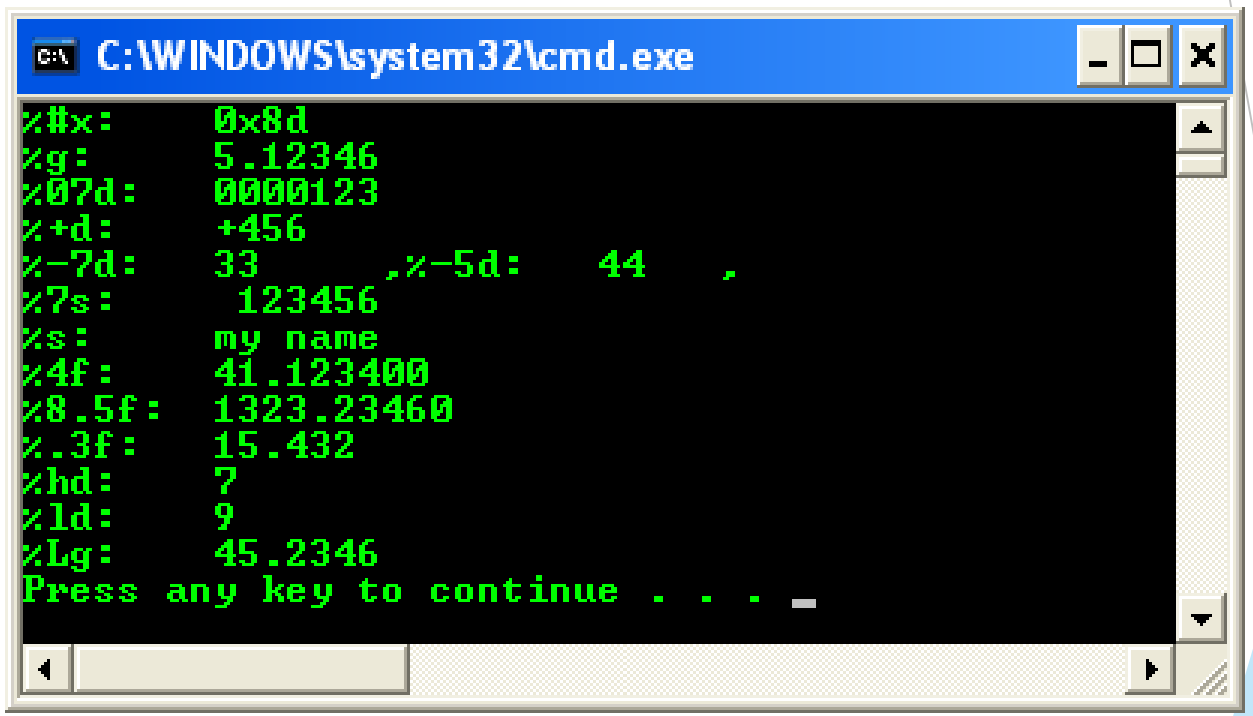
Using VC++

- Step: run the program as done previously.



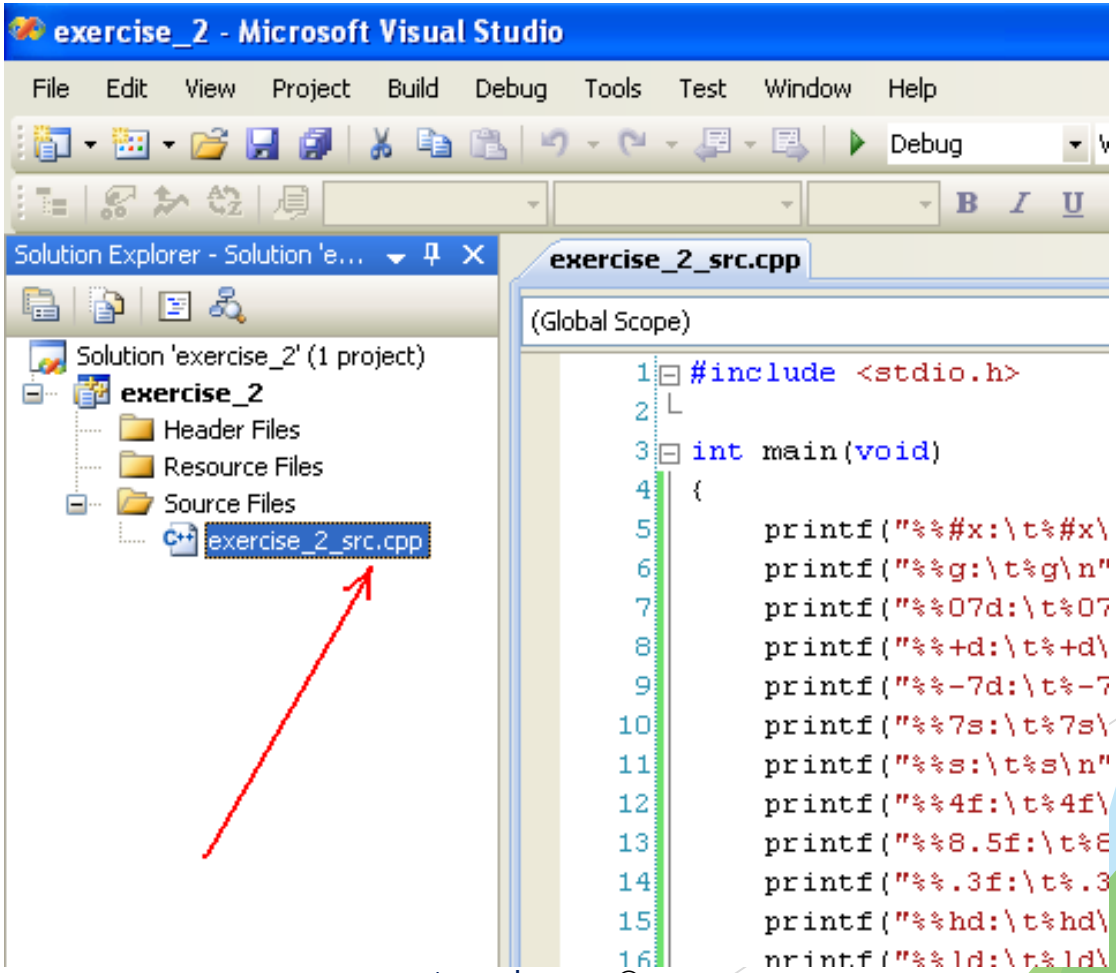
Using VC++

- The following shows a sample output.



Using VC++

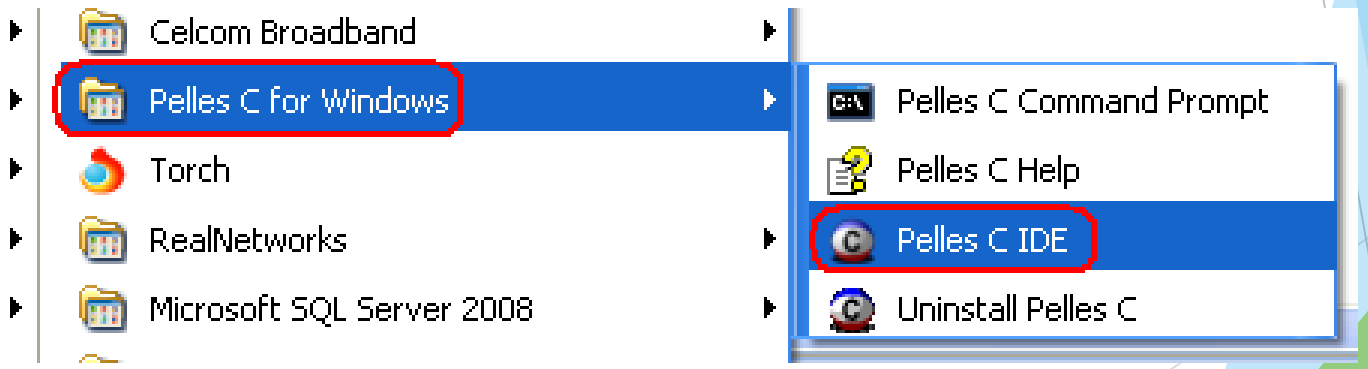
- Compared to the previous example, the source file extension is `.cpp` instead of `.c`.
- However, through the project settings we tell VC++ to build this C source code as C.



USING PELLES C

Using Pelles C

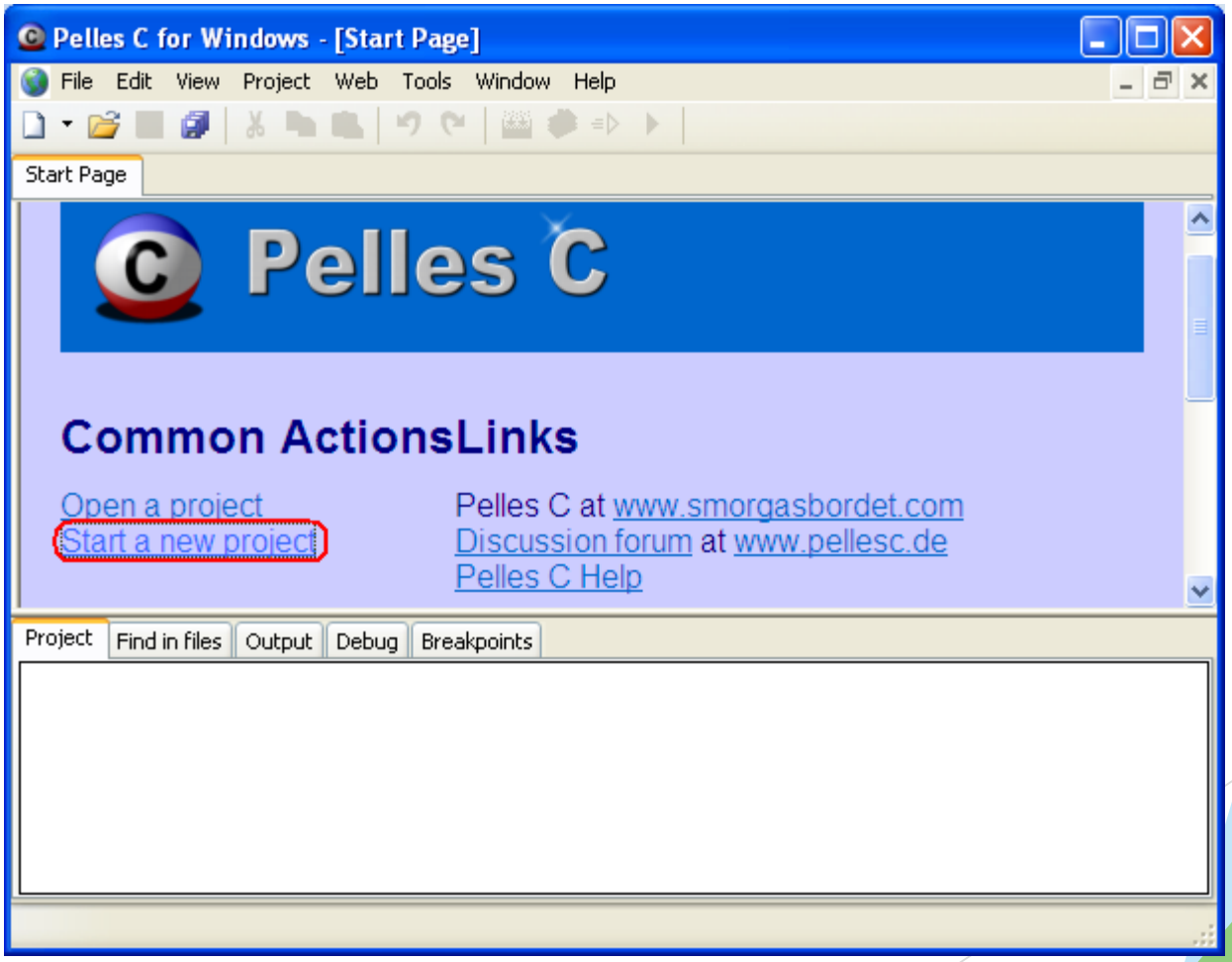
- Step: download Pelles C installation at: Pelles C
- Don't forget to select your appropriate platform.
- Double click the executable (.exe) to install Pelles C.
- Launch Pelles C IDE.



Using Pelles C

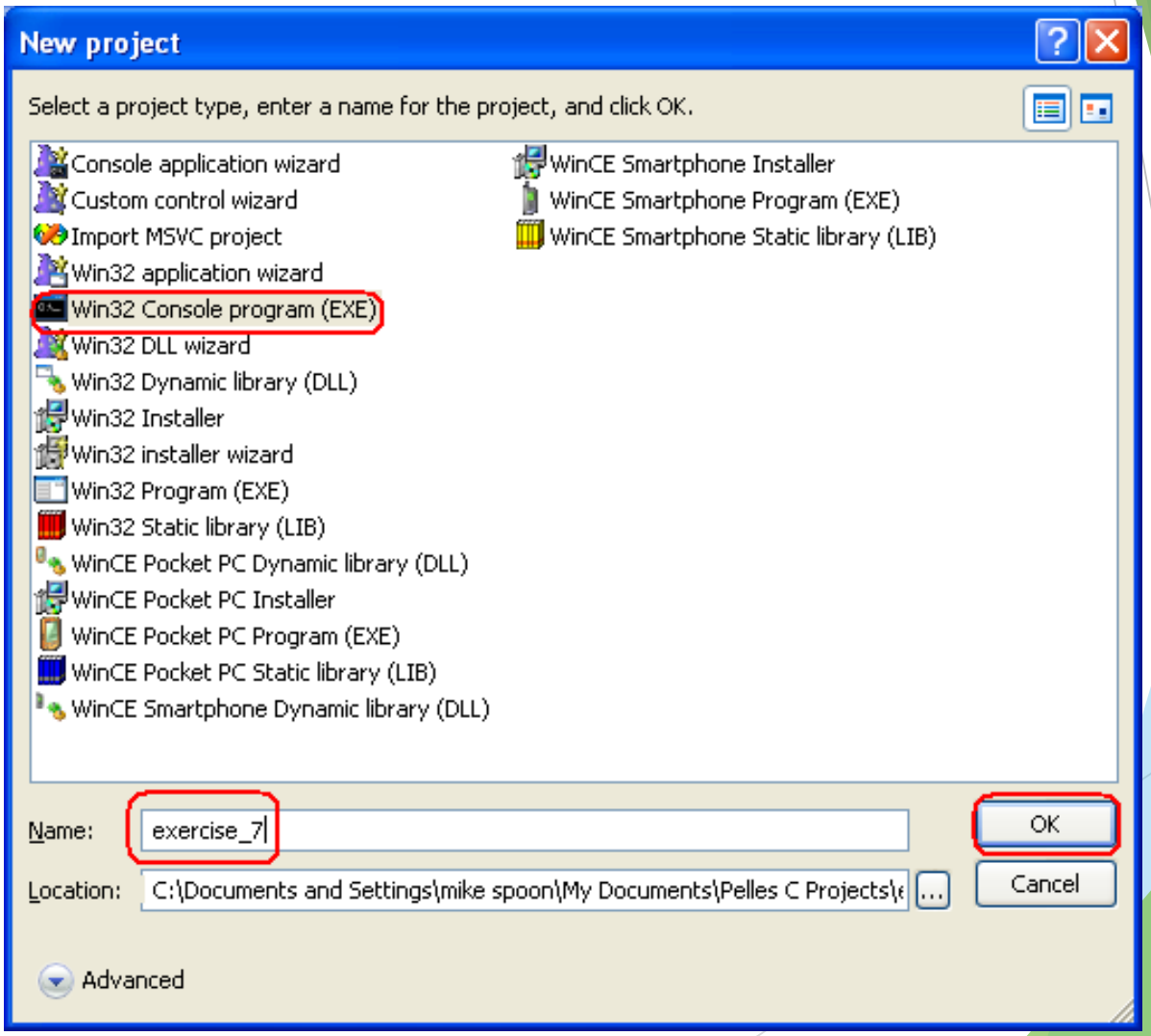
Using Pelles C

- Step: select `Start a new project` link.



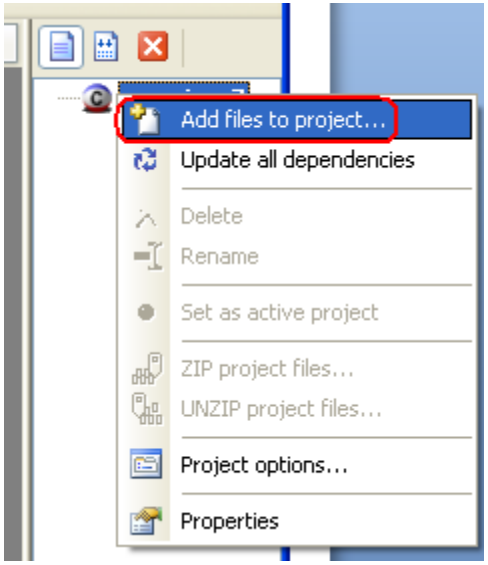
Using Pelles C

- Step: select `Win32 Console program (EXE)` project type > put the project name > click `OK` button.



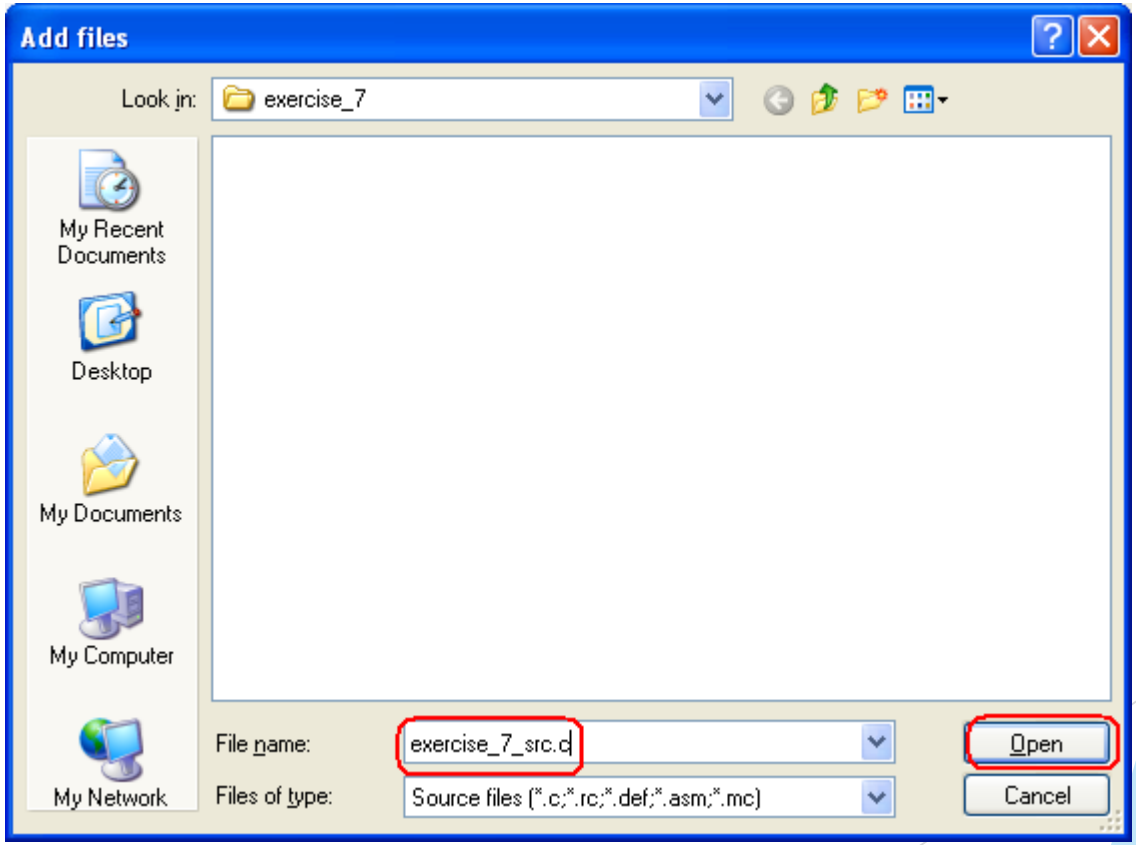
Using Pelles C

- Step: select the project root folder > right-click mouse > select `Add files to project…` menu.



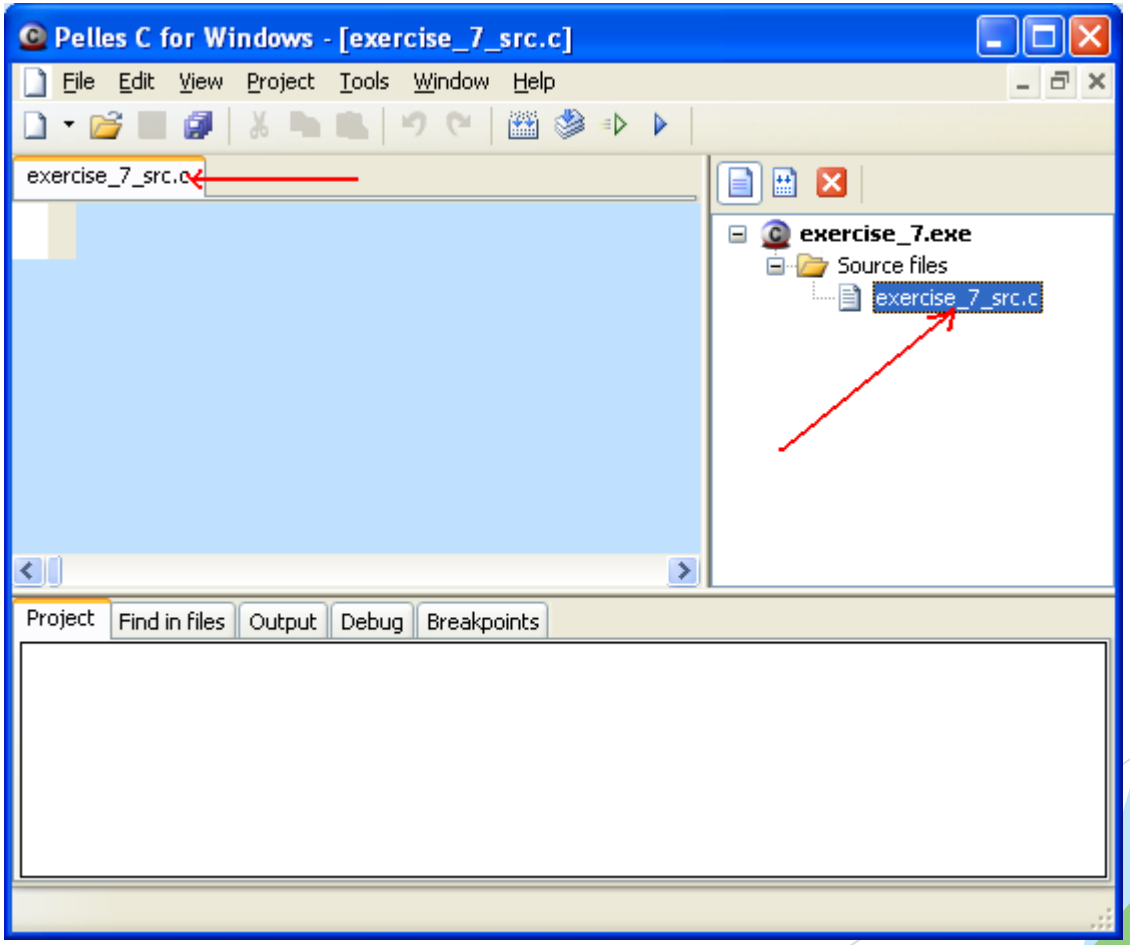
Using Pelles C

- Step: put the C source file name with `.c` extension > click `Open` button.



Using Pelles C

- Now, the source file is opened in the editor else you can double-click the source file name.



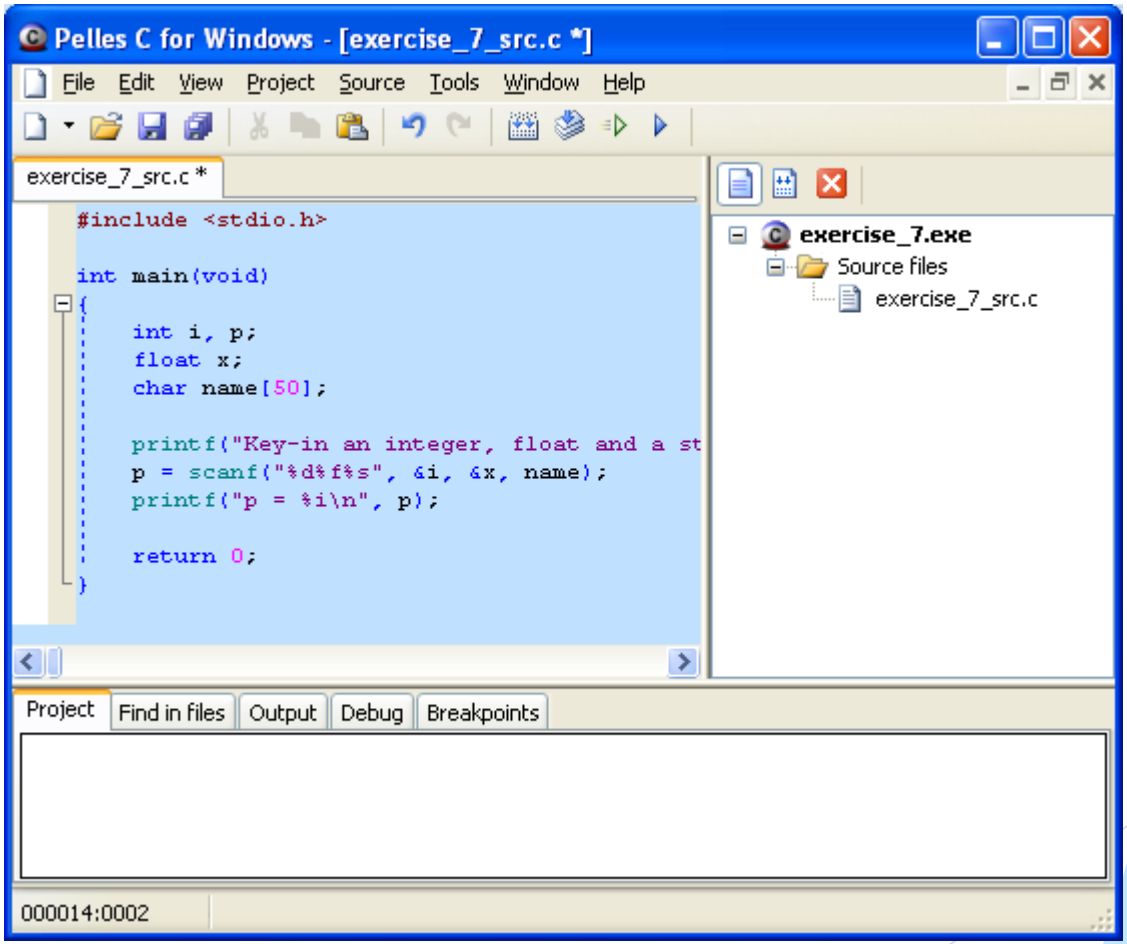
Using Pelles C

- Step: copy and paste the following C source code into the source file.

```
#include <stdio.h>

int main(void)
{
int i, p;
float x;
char name[50];

printf("Key-in an integer, float and a string\n");
p = scanf("%d%f%s", &i, &x, name);
printf("p = %i\n", p);

return 0;
}
```

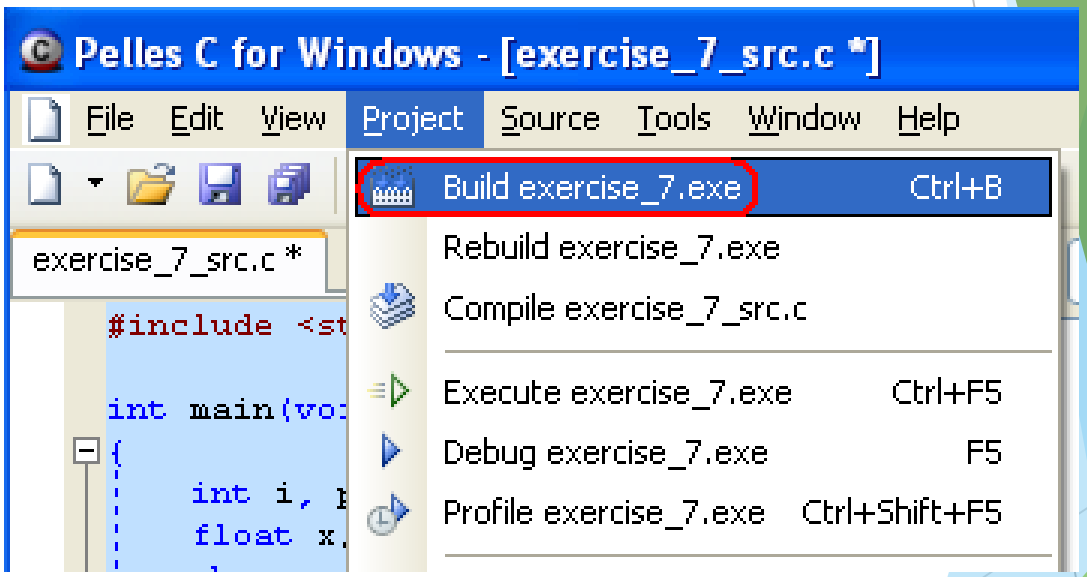
Code sample in text 5

Using Pelles C



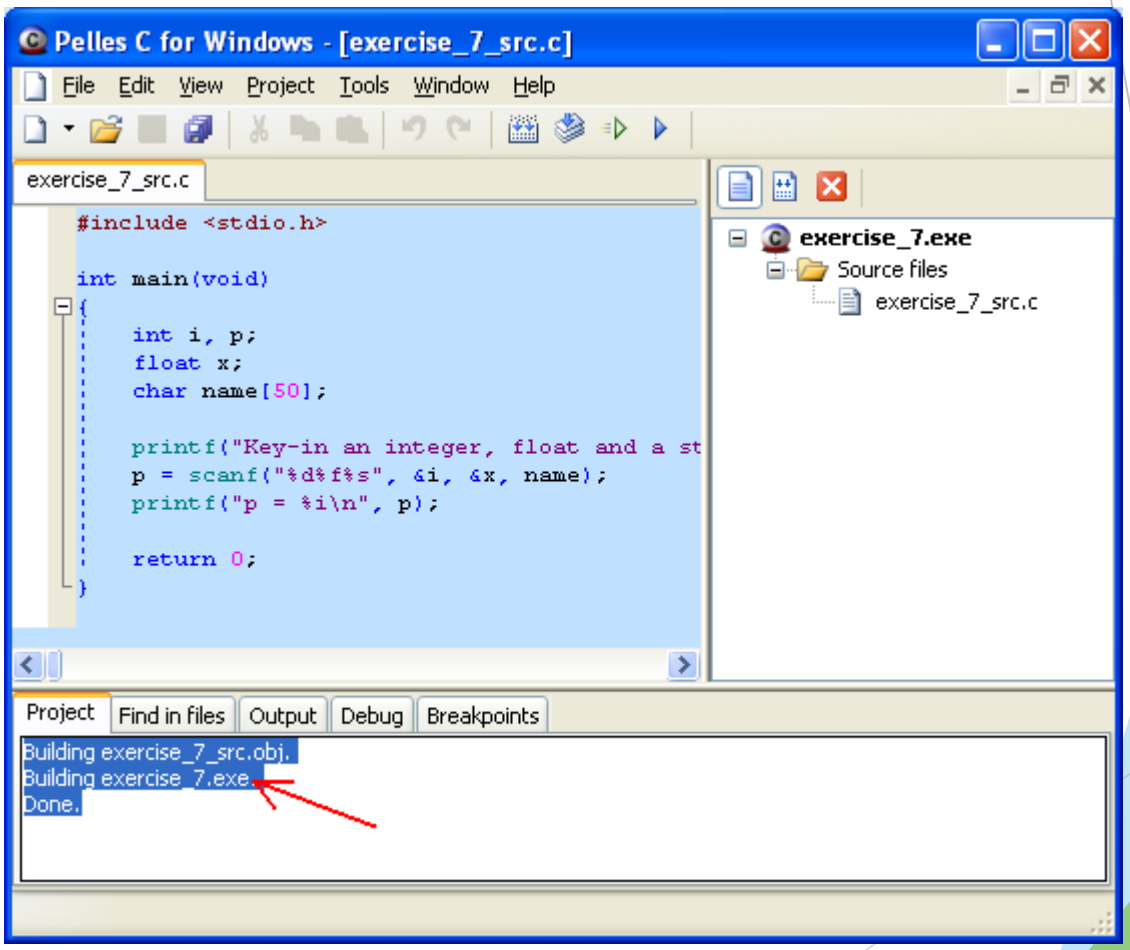
Using Pelles C

- Step: invoke `Project` menu > select `Build` *`your_project_name`*`.exe` sub-menu.
- We are going to build (compile and link) this project.



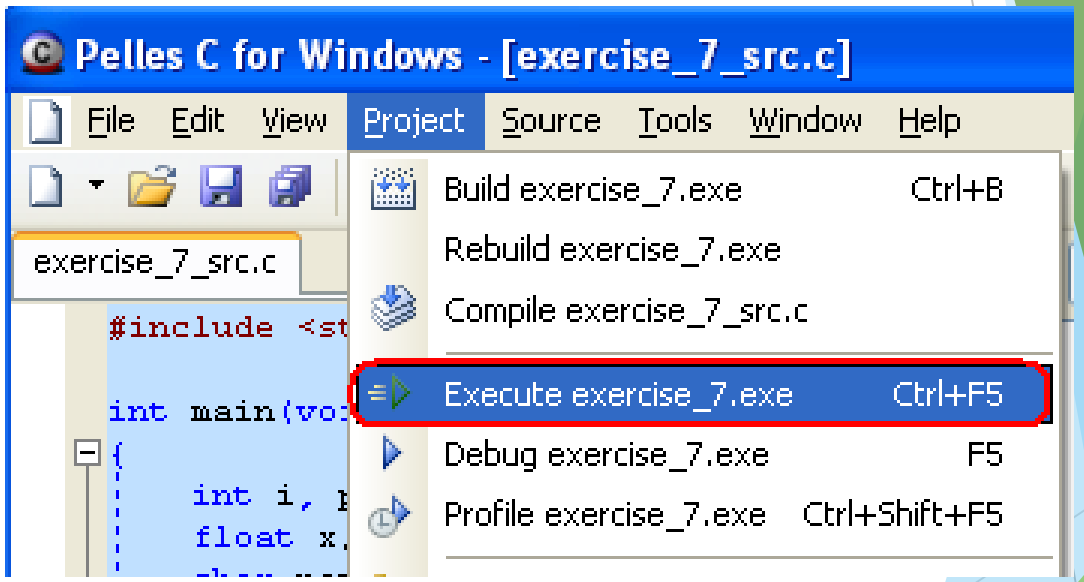
Using Pelles C

- The output can be viewed in the `Project` window.



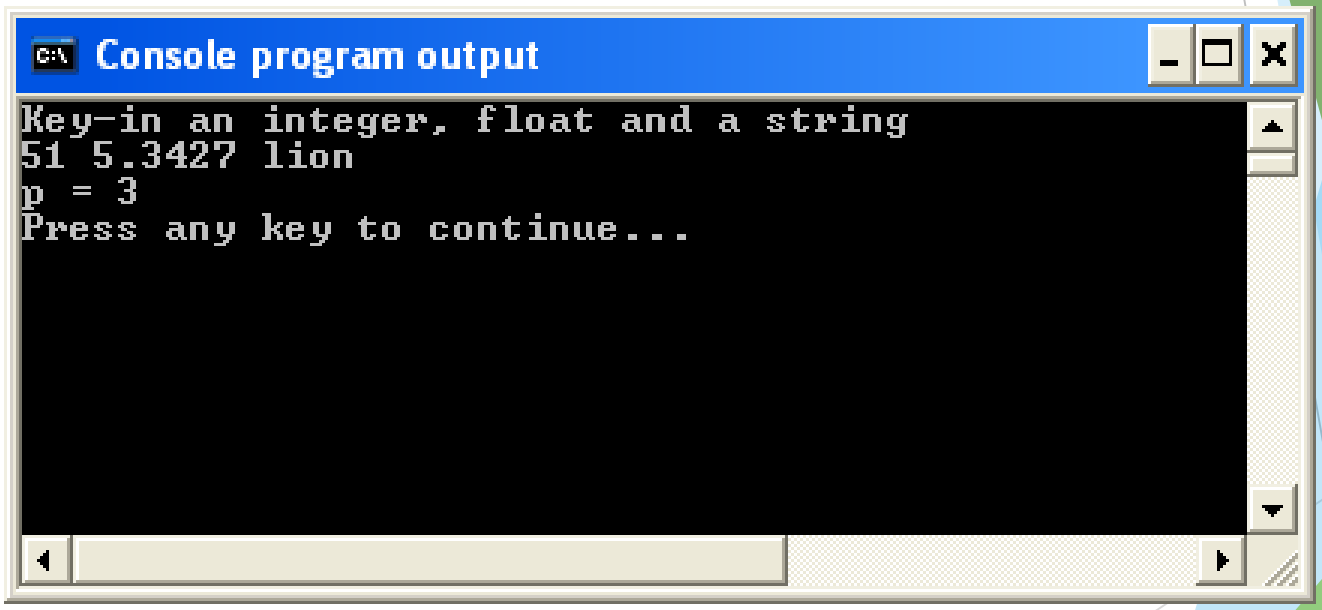
Using Pelles C

- Step: invoke the `Project` menu > select `Execute` *`your_project_name`*`.exe` sub-menu.
- We are going to run this project.



Using Pelles C

- Step: key-in a sample input: `51 5.3427 lion` and press `Enter` key.
- The following is a sample output.



End.
Thank you