

Course1 : Introduction to Qt

Outline

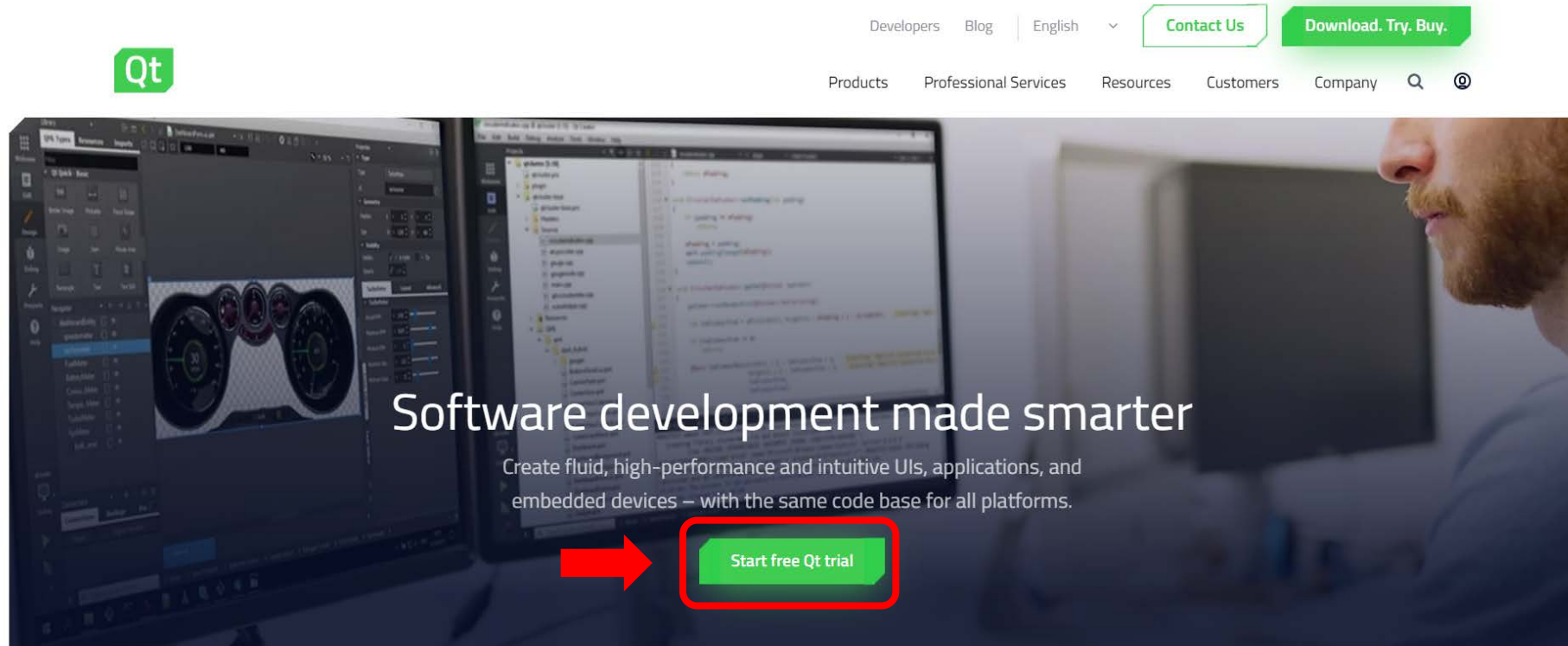
- Introduction
- How to install Qt
- How to create a project
- Introduction to Qt Creator
- Some useful widgets
- Introduction to signal and slot

Introduction

- Qt Creator is an IDE for developers.
- We use MinGW as our compiler in this class.

How to Install Qt

- Go to Qt website: <https://www.qt.io/>
- Select “Start free Qt trial”.



How to Install Qt

- Select “Go open source”.

✓ Embedded tooling & solutions

Qt has ready-made solutions that speed up your device creation with enterprise-quality features for a truly professional development experience.

✓ Official Qt Support Helpdesk

The Qt Company's expert support team helps you solve your development challenges.

✓ Close strategic relationship with The Qt Company

Free trial with commercial licensing.
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✗ Embedded tooling & solutions

Qt has ready-made solutions that speed up your device creation with enterprise-quality features for a truly professional development experience.

✗ Official Qt Support Helpdesk

The Qt Company's expert support team helps you solve your development challenges.

✗ Close strategic relationship with The Qt Company


When developing with Qt Open Source, we stress that you should be aware of the terms of the (L)GPL and your legal obligations.

Go open source

How to Install Qt

- Make sure that your operating system is correct or not.
- Select “Download”.

Your download

We detected your operating system as: **Windows** 
Recommended download: [Qt Online Installer for Windows](#)

Not the installer you need? [View other options.](#)

The installer will ask you to optionally sign in using your Qt account credentials. This will ensure you get the right access to the right components, such as those under a commercial license.

Please note:

If you requested a 30-day commercial trial extension or an additional license for embedded components, we will contact you shortly. In the meantime, please get started with Qt.

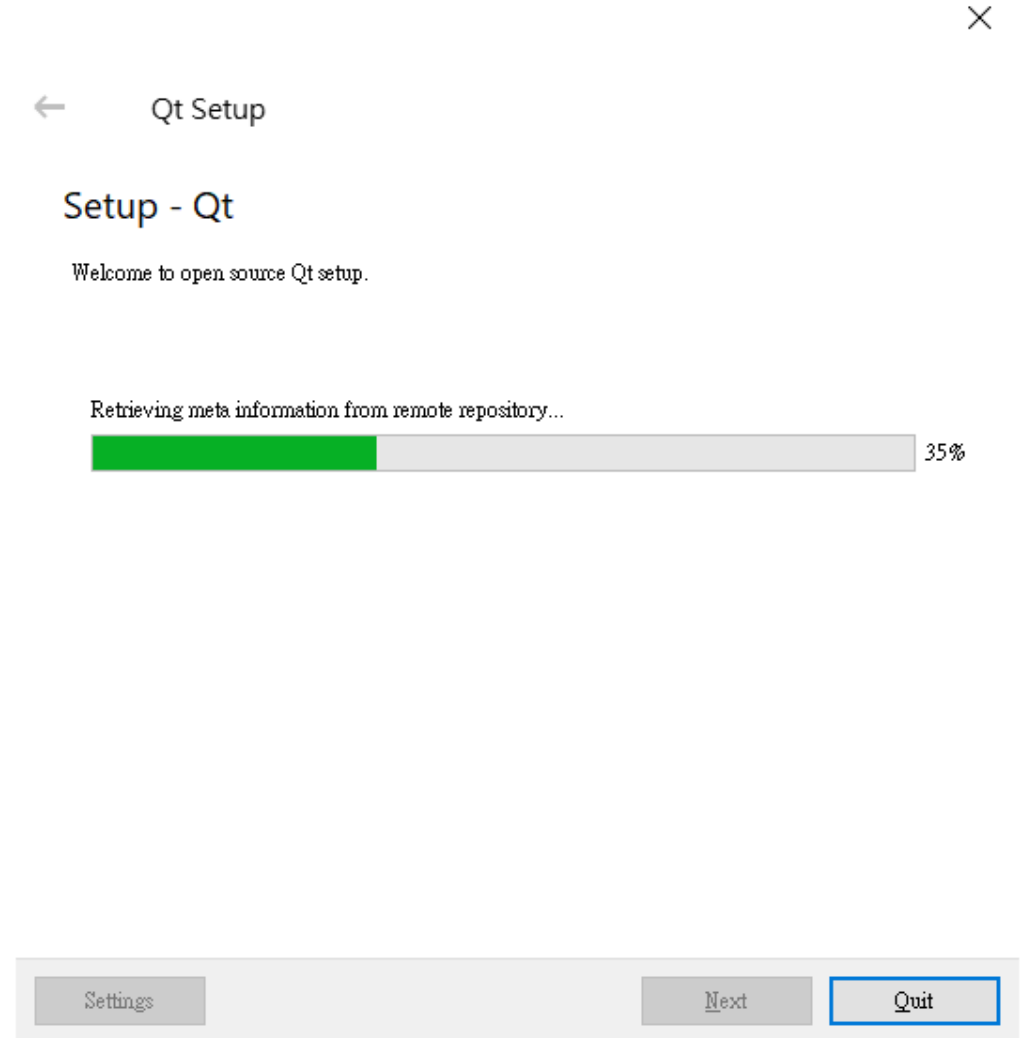
If you are installing under a **Qt open source license**, please **be sure you are in full compliance** with the legal [obligations of the \(L\)GPL v2/3](#) before installation. For a brief overview visit the [main download page](#) or for more details see the [FAQ](#).



Download

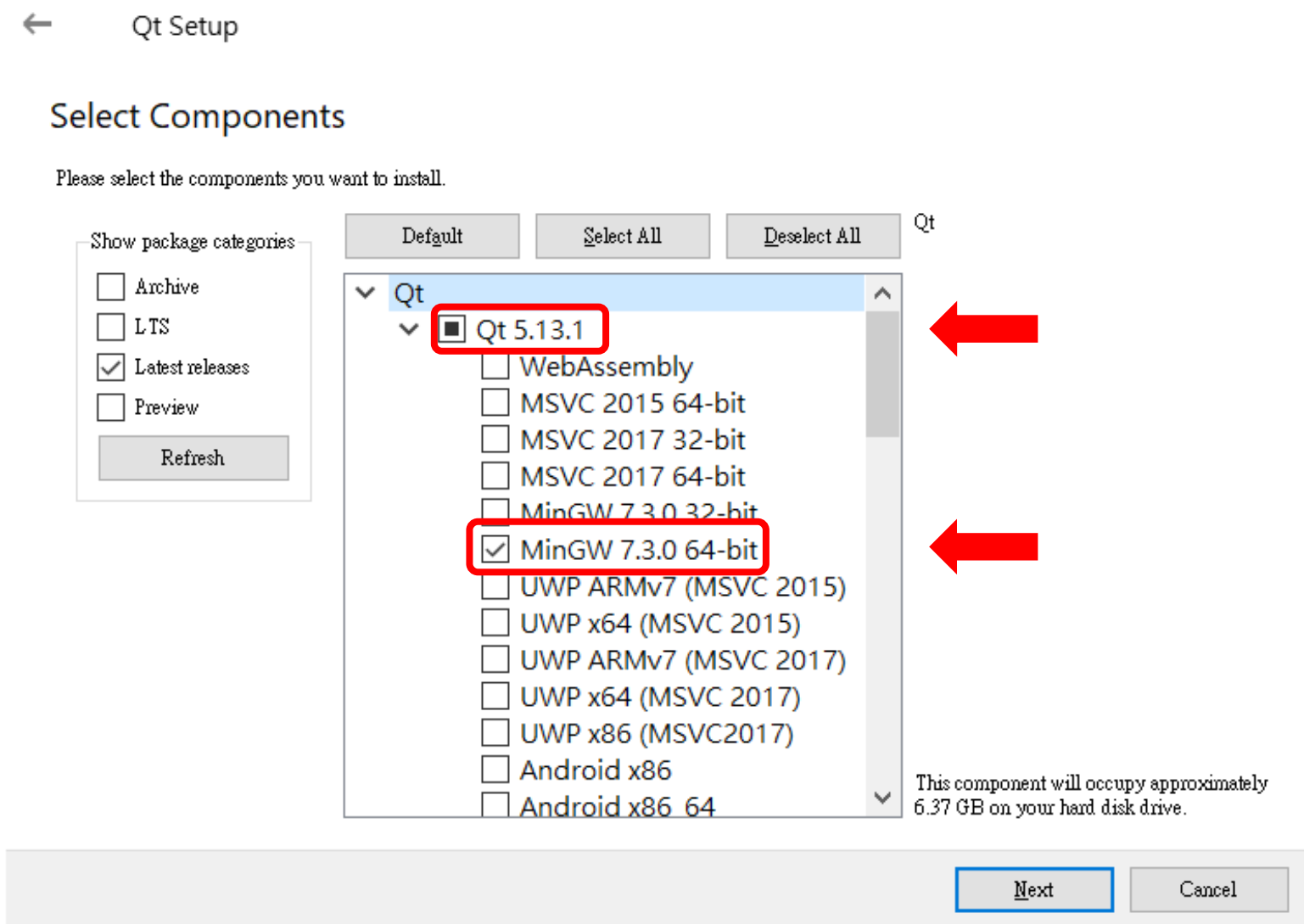
How to Install Qt

- Run the execution file.
(qt-unified-windows-x86-3.1.1-online.exe)
- Sign up an Email to log in or just skip.



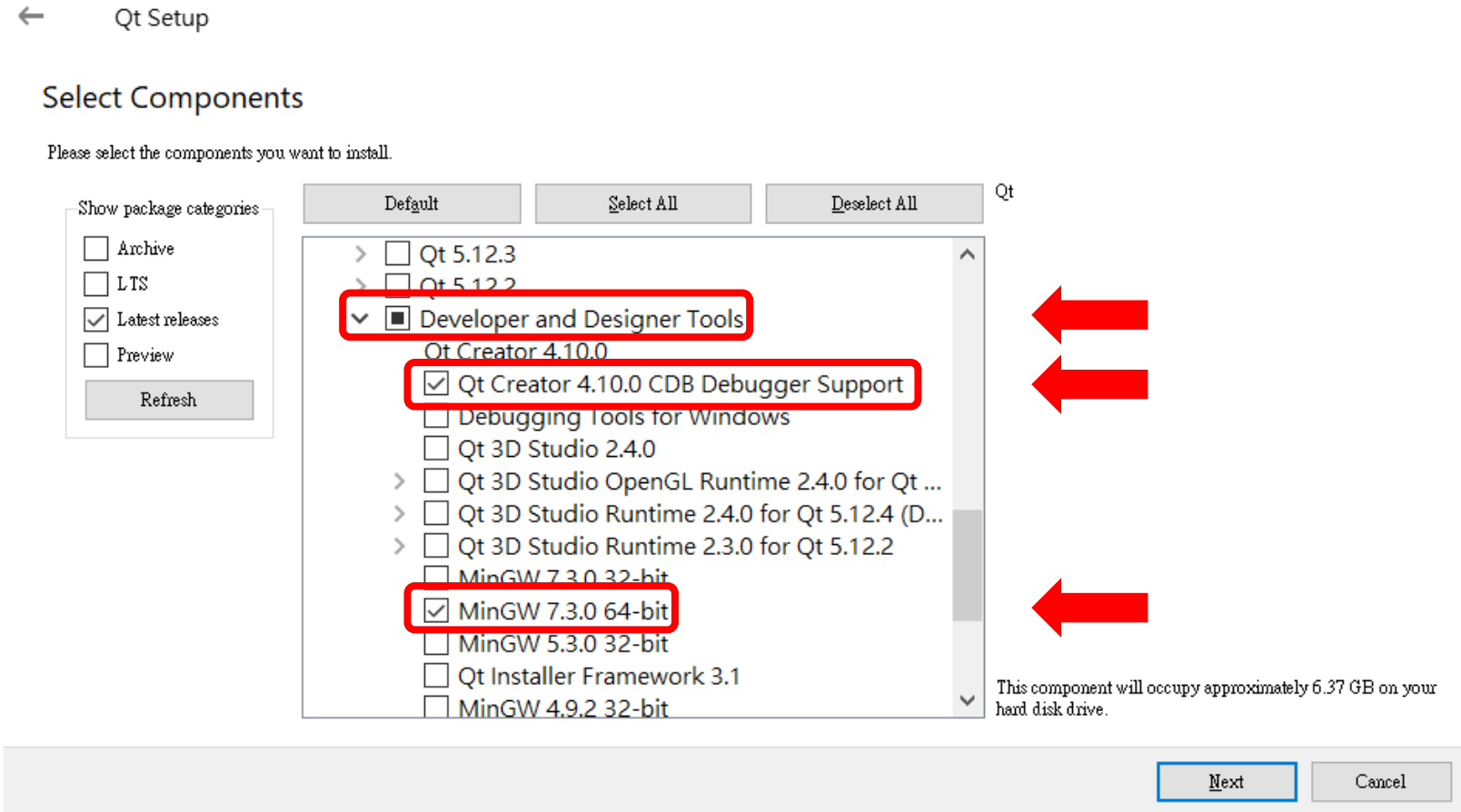
How to Install Qt

- Select “MinGW 7.3.3 64-bit”.

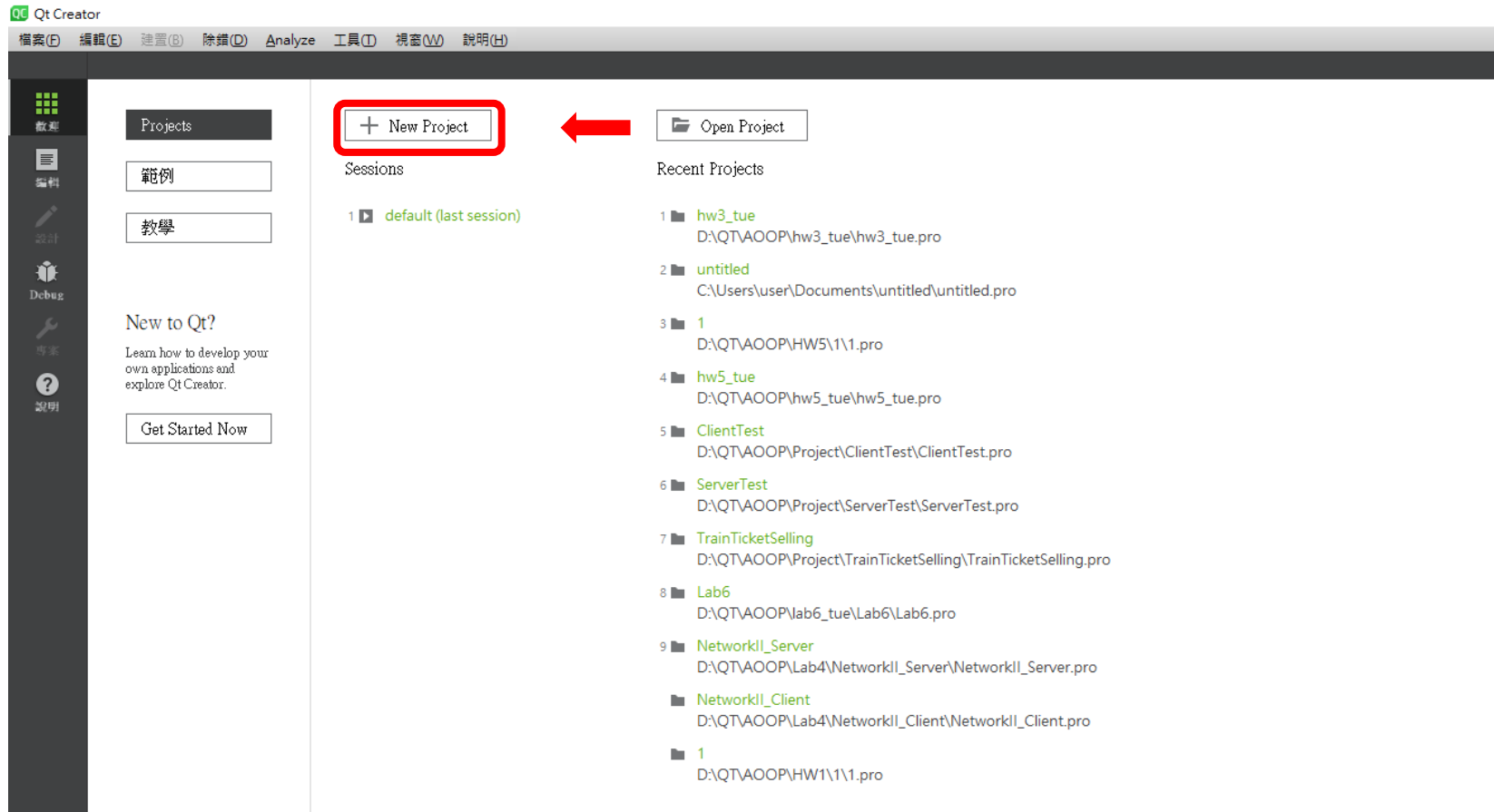


How to Install Qt

- Select “Qt Creator 4.10.0 CDB Debugger Support”.
- Select “MinGW 7.3.3 64-bit”.
- Finish the installation.

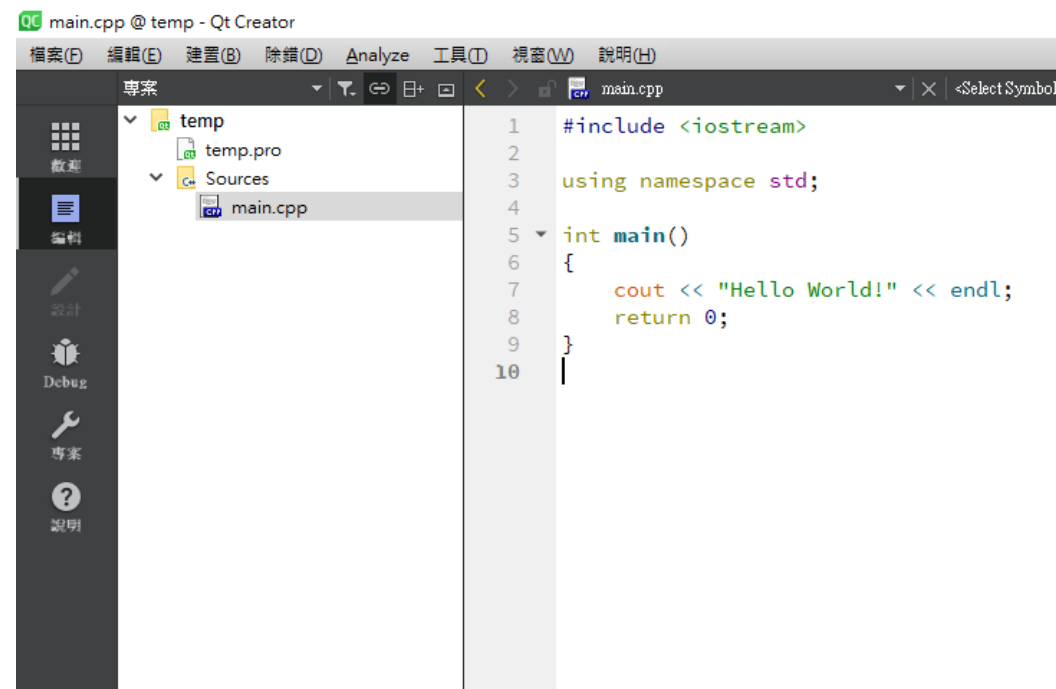
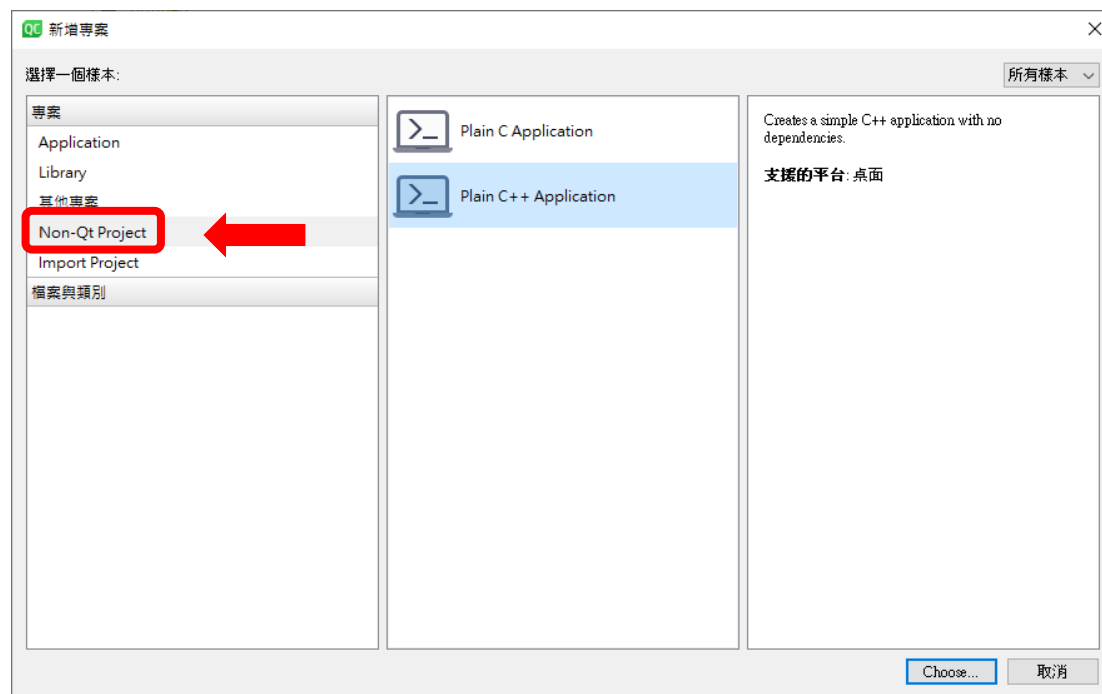


How to Create a Project



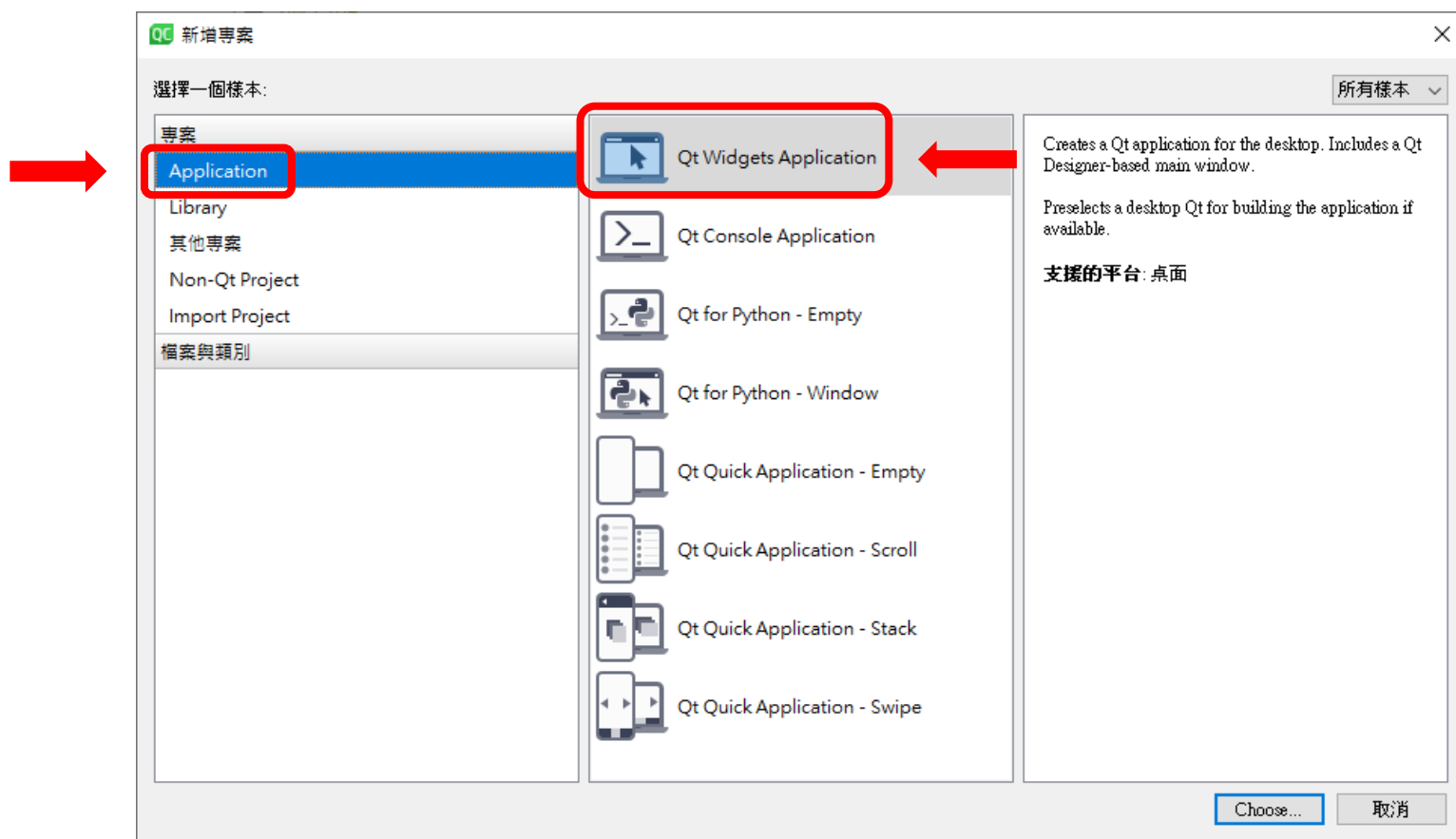
How to Create a Project

- C or C++ application



How to Create a Project

- Qt Widgets Application



How to Create a Project

✕

Qt Widgets Application

➡ Location

Build System

Details

Kits

Summary

Project Location

This wizard generates a Qt Widgets Application project. The application derives by default from QApplication and includes an empty widget.

名稱：

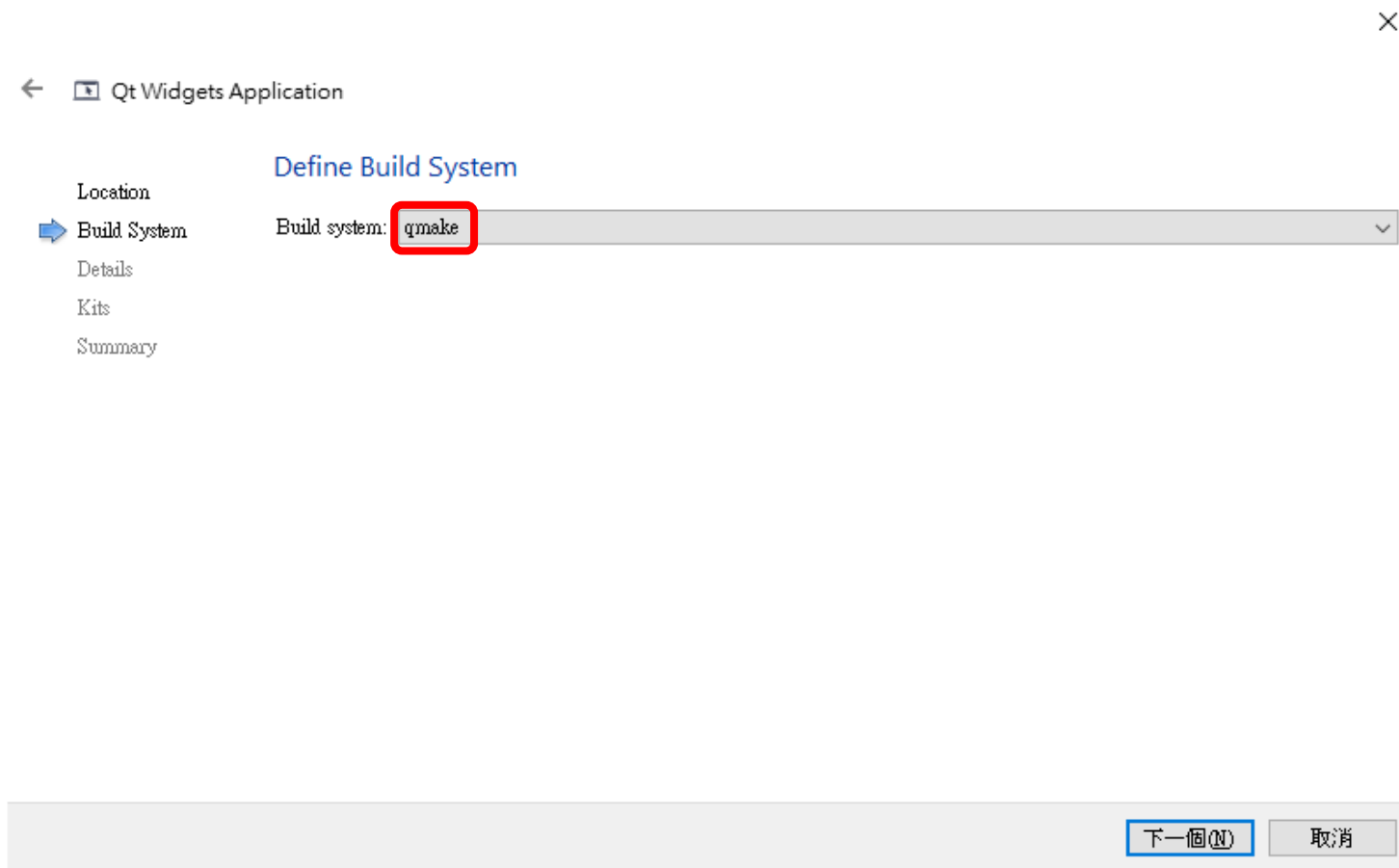
建立於：

☐ 做為預設的專案位置

下一個(N)

取消

How to Create a Project



How to Create a Project

×

[←](#) [Qt Widgets Application](#)

Class Information

Location

Build System

[Details](#)

Kits

Summary

Specify basic information about the classes for which you want to generate skeleton source code files.

Class name:

Base class:

Header file:

Source file:

☒ Generate form

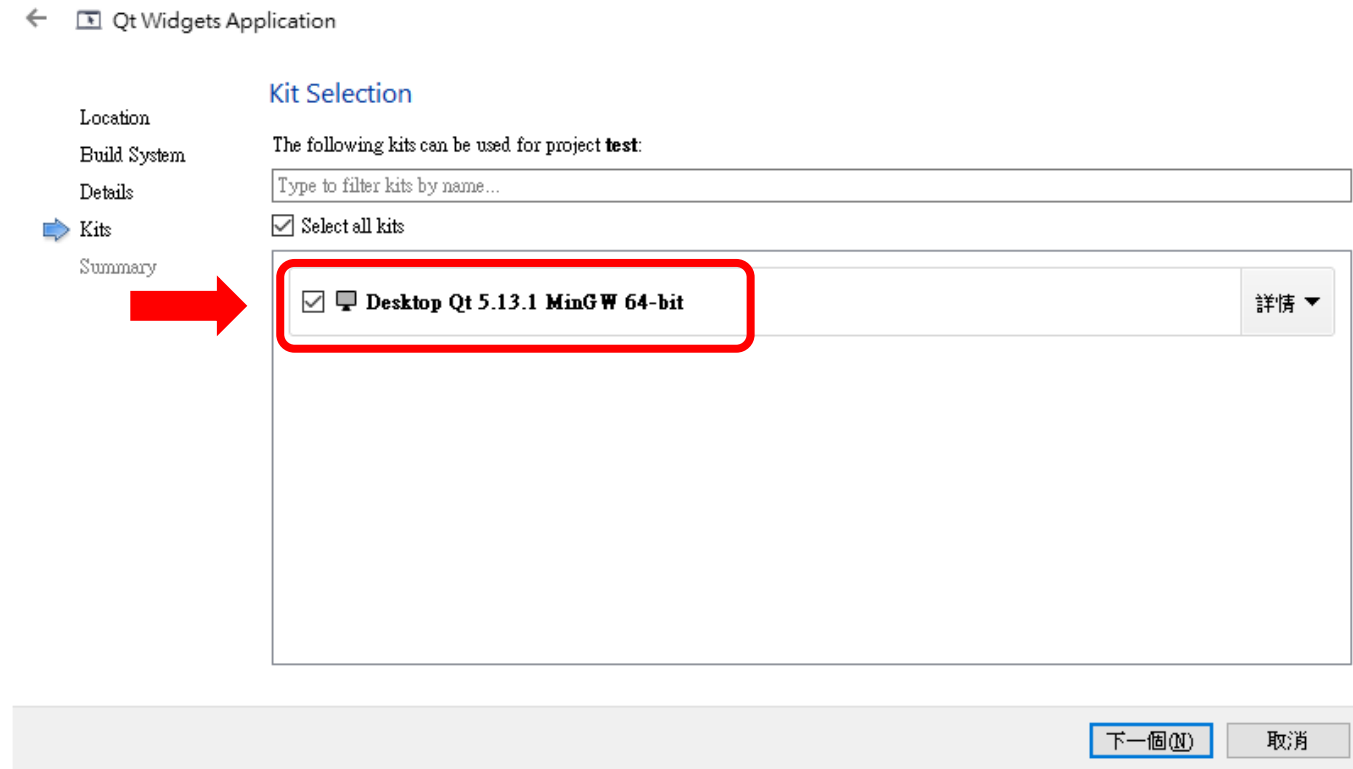
Form file:

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[取消](#)



How to Create a Project

- If you don't have this, please re-install Qt.



How to Create a Project




  Qt Widgets Application

Location

Build System

Details

Kits

 Summary

Project Management

新增到專案中做為子專案：

<None>

新增到版本控制系統(V)：

<None>

Configure...

要新增到此處的檔案

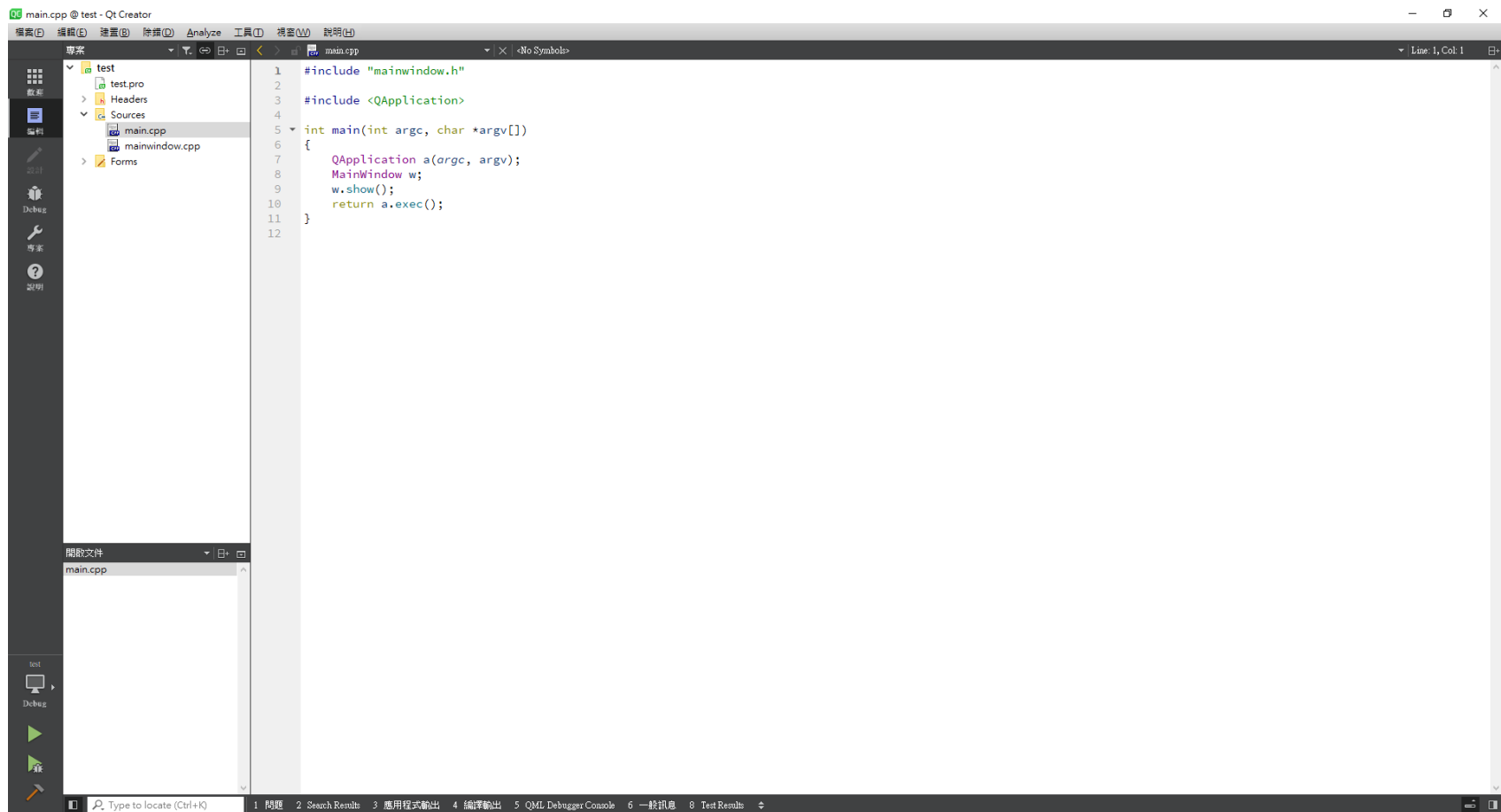
C:\Qt\code\test:

```
main.cpp
mainwindow.cpp
mainwindow.h
mainwindow.ui
test.pro
```

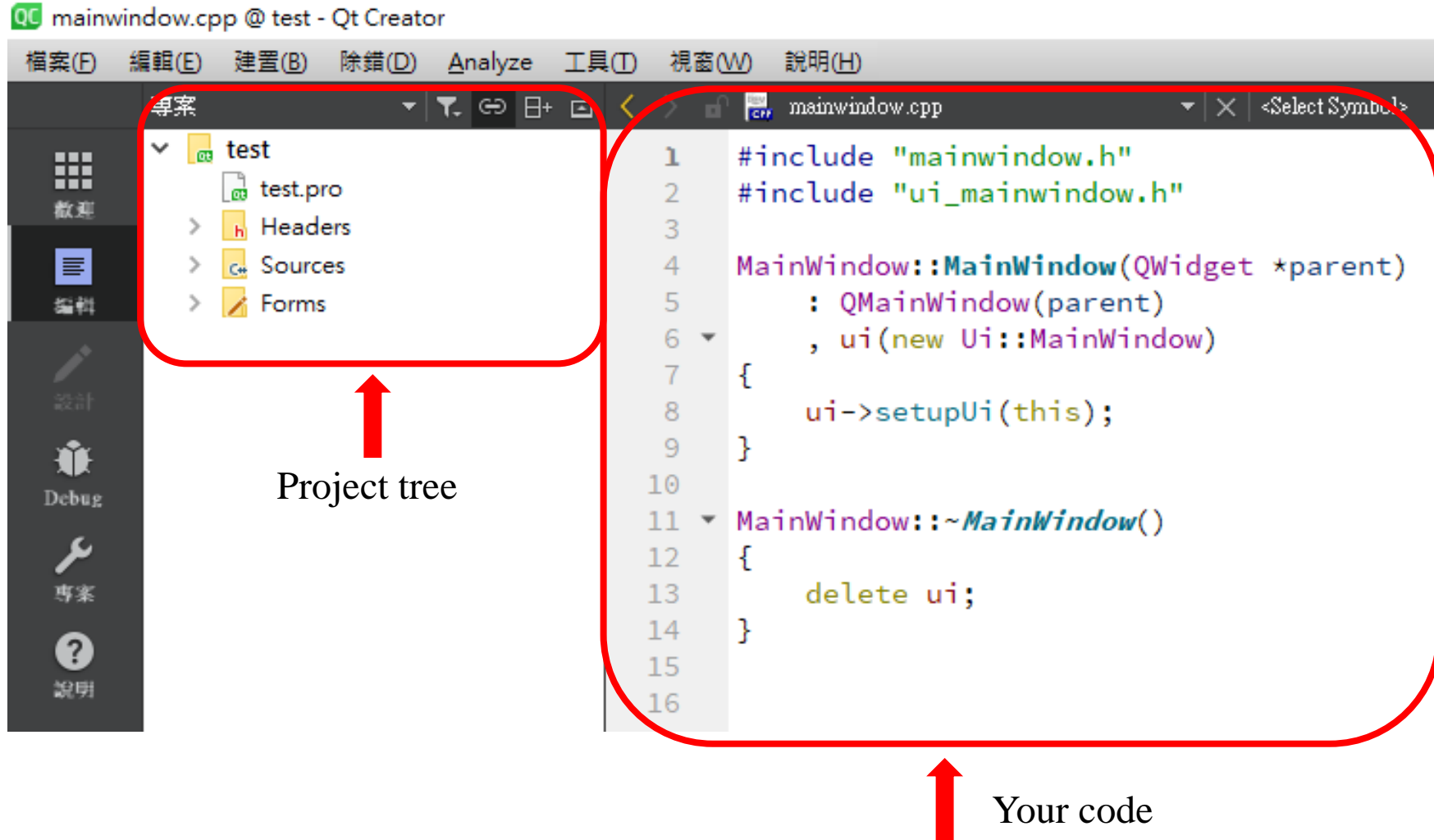
完成(F)

取消

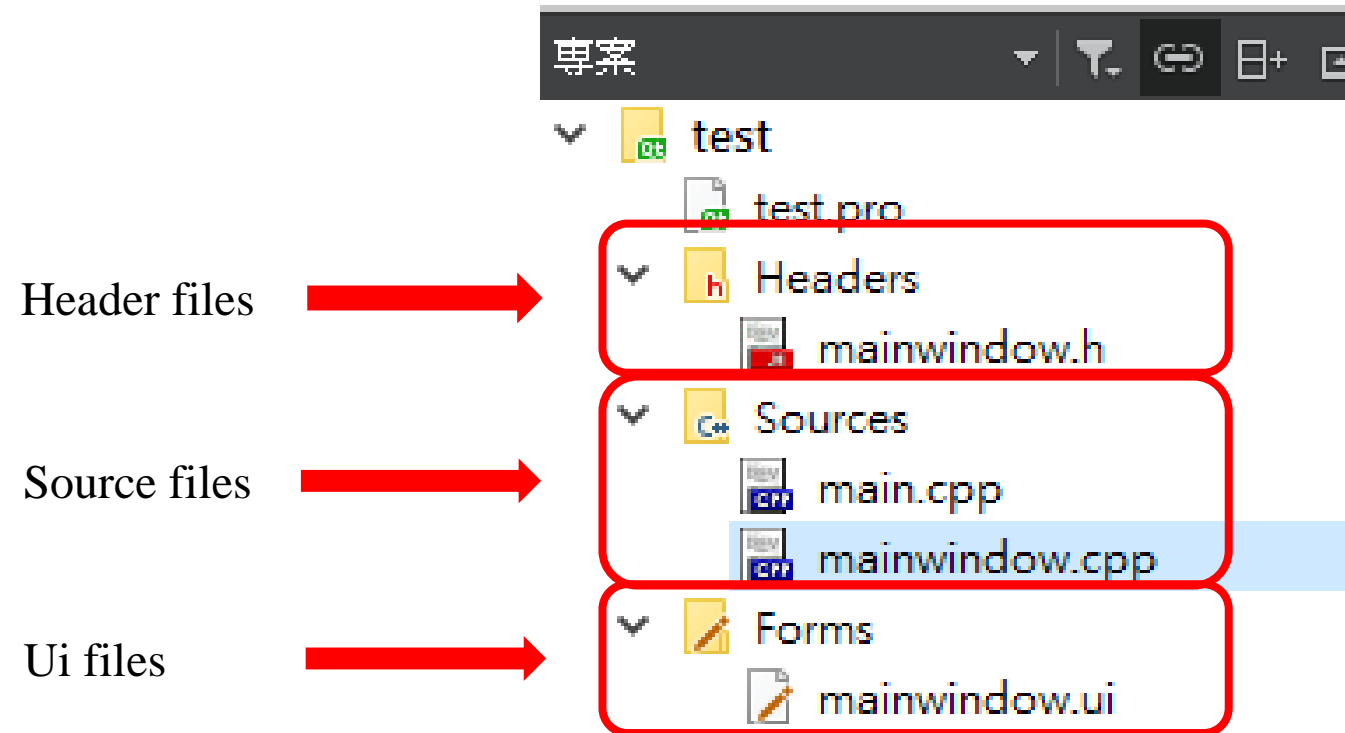
How to Create a Project



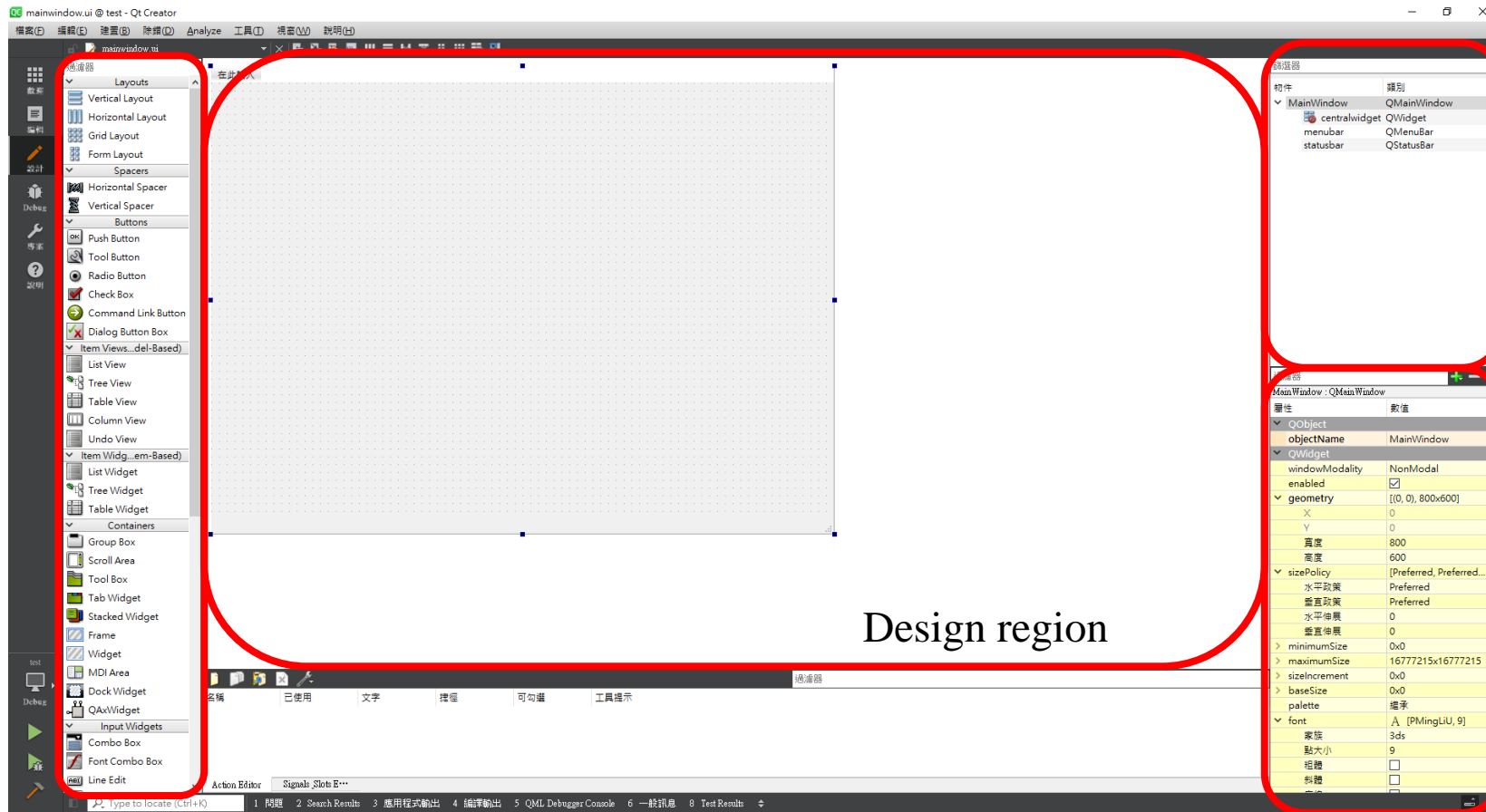
Introduction to Qt Creator



Introduction to Qt Creator



Introduction to Qt Creator



Some widgets you can use

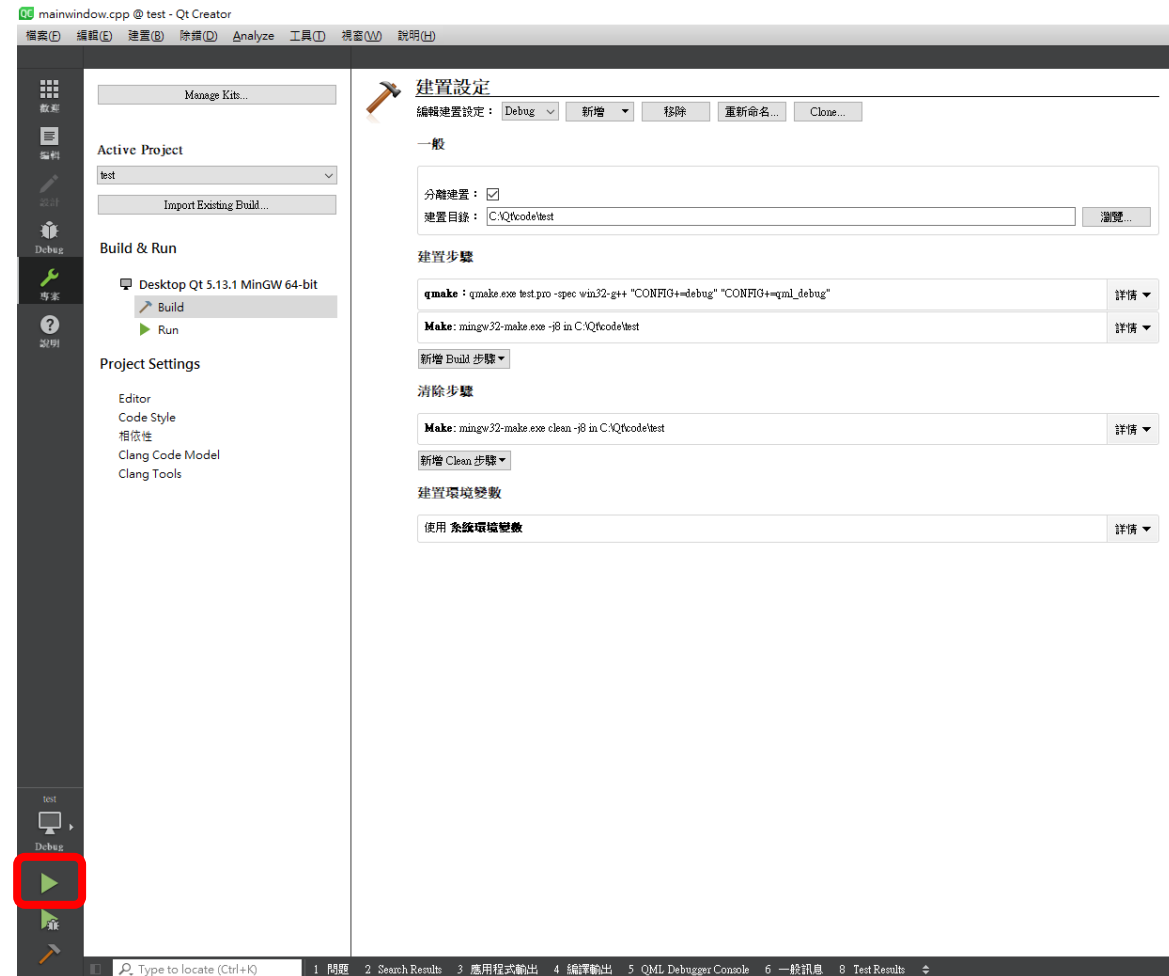
Introduction to Qt Creator

- Make sure the path is correct!!



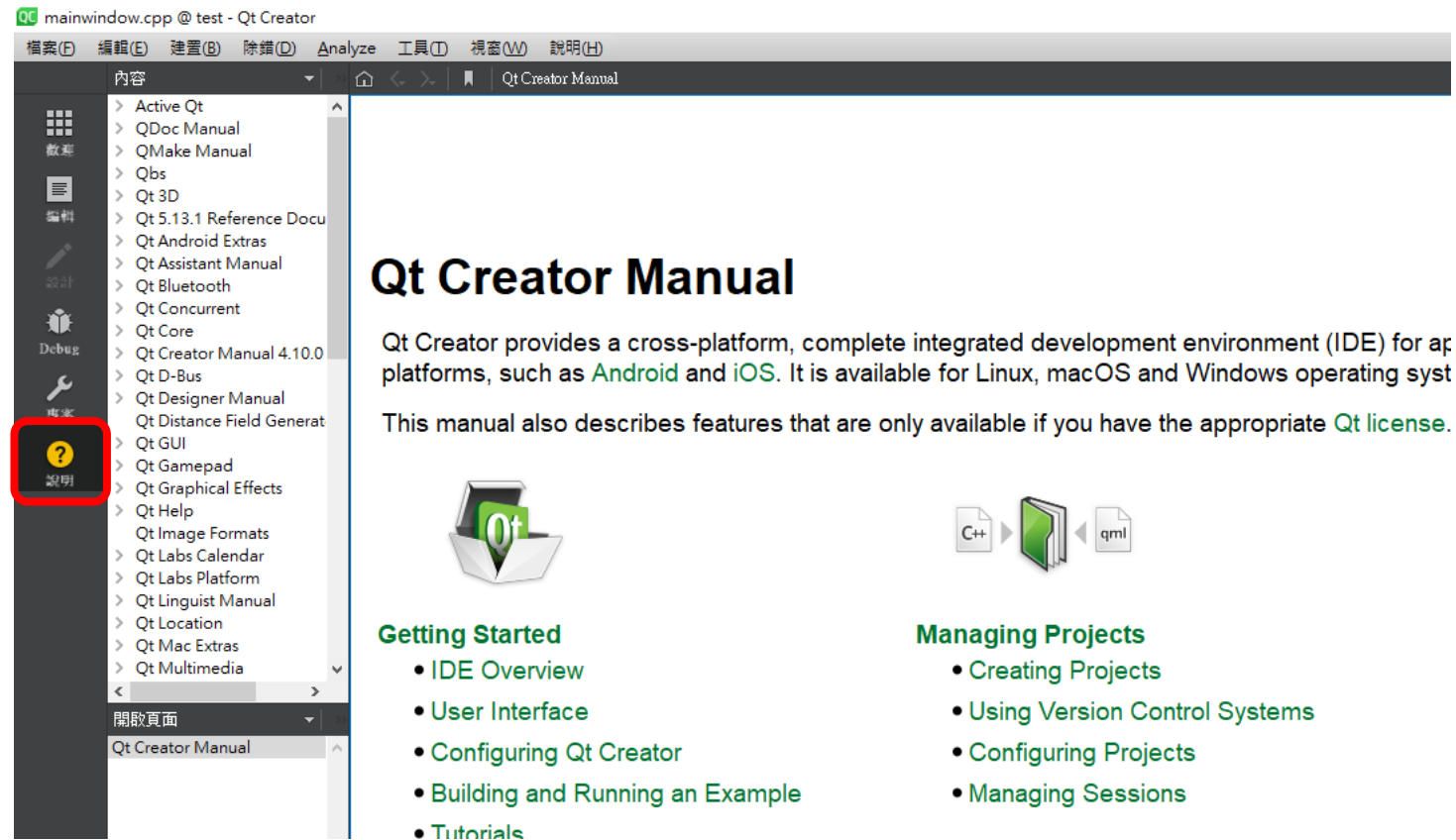
Introduction to Qt Creator

- Run the project.



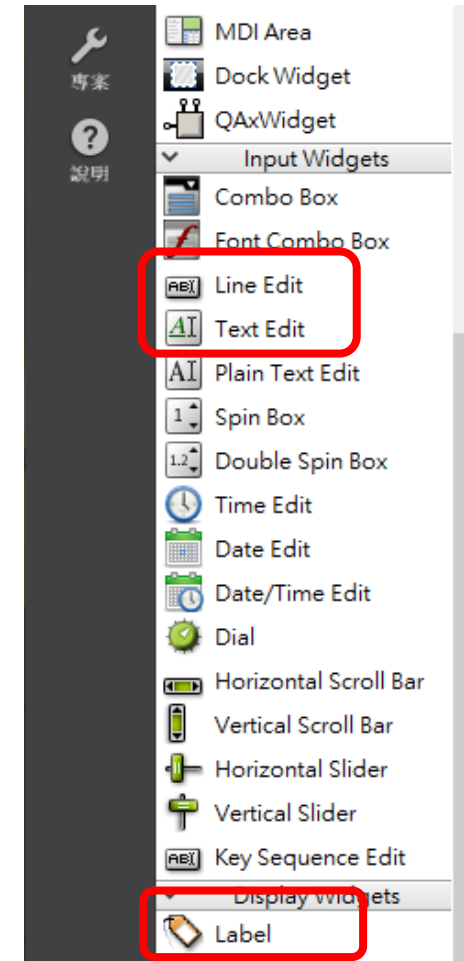
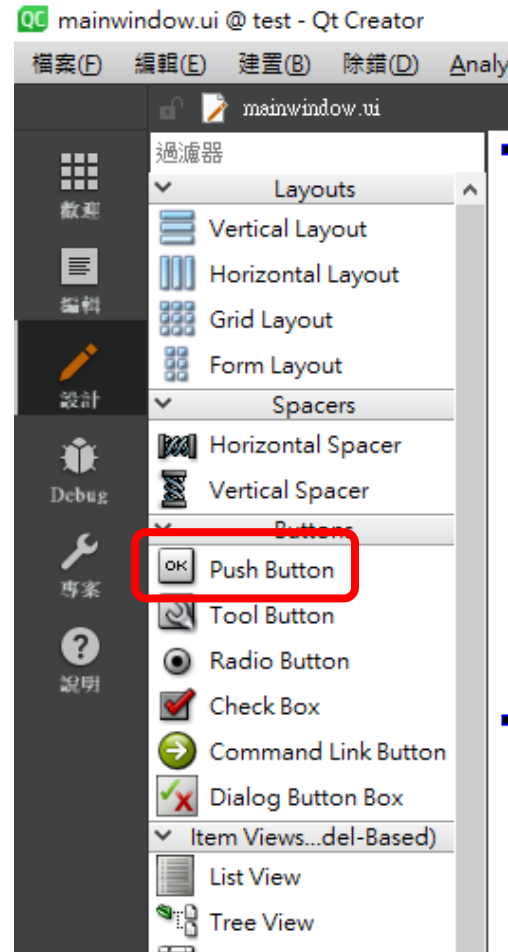
Introduction to Qt Creator

- You can search for the API in the information.



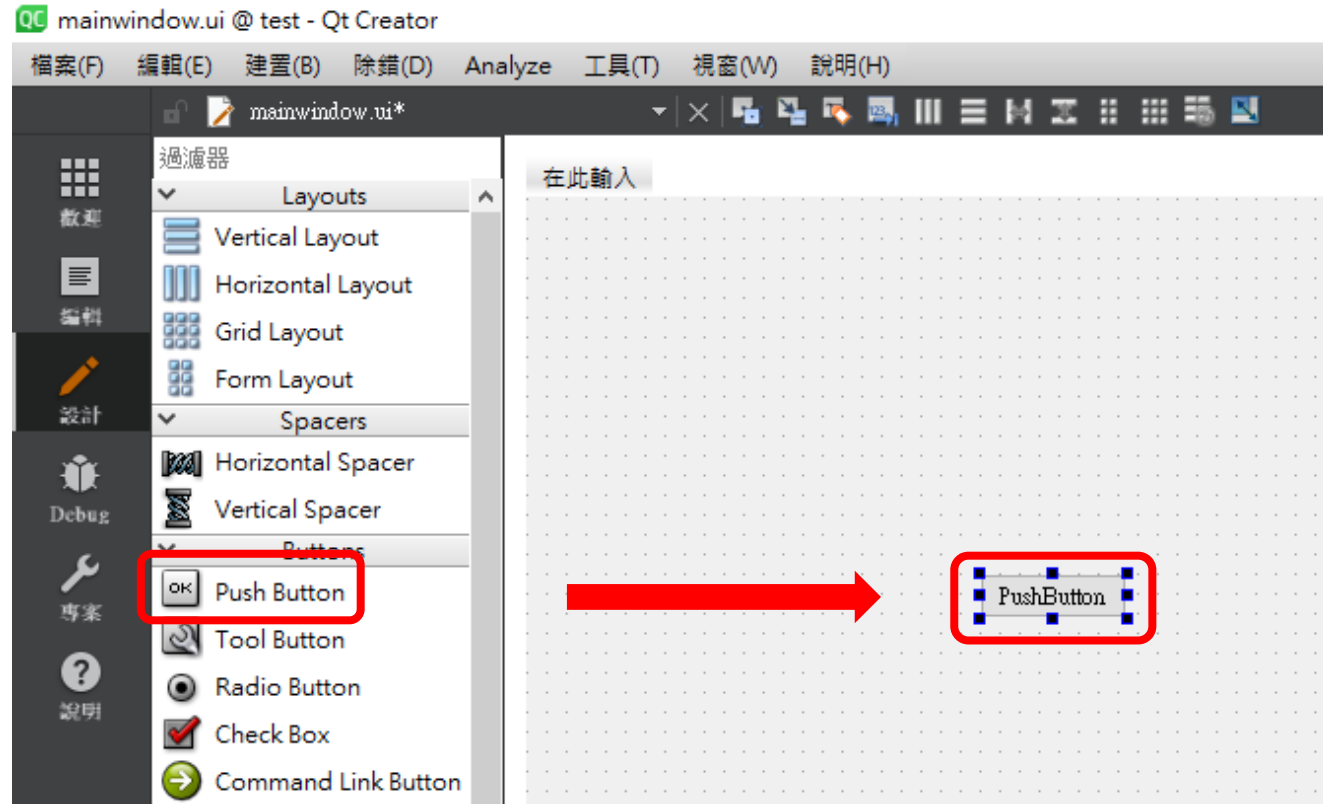
Some Useful Widgets

- Push Button
- Line Edit
- Text Edit
- Label



Some Useful Widgets

- Drag the “Push Button” into the design area.

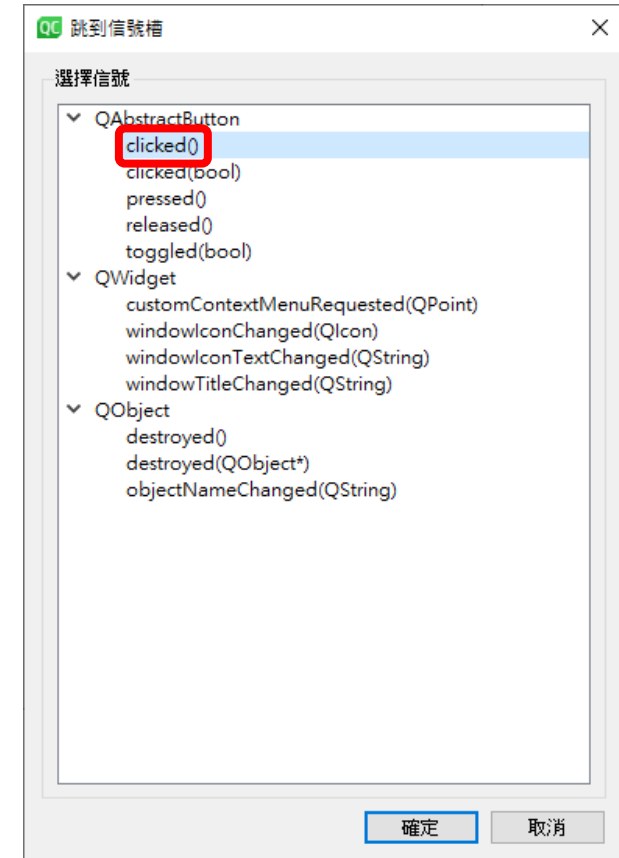


Some Useful Widgets

- Click the right button and go to slot.

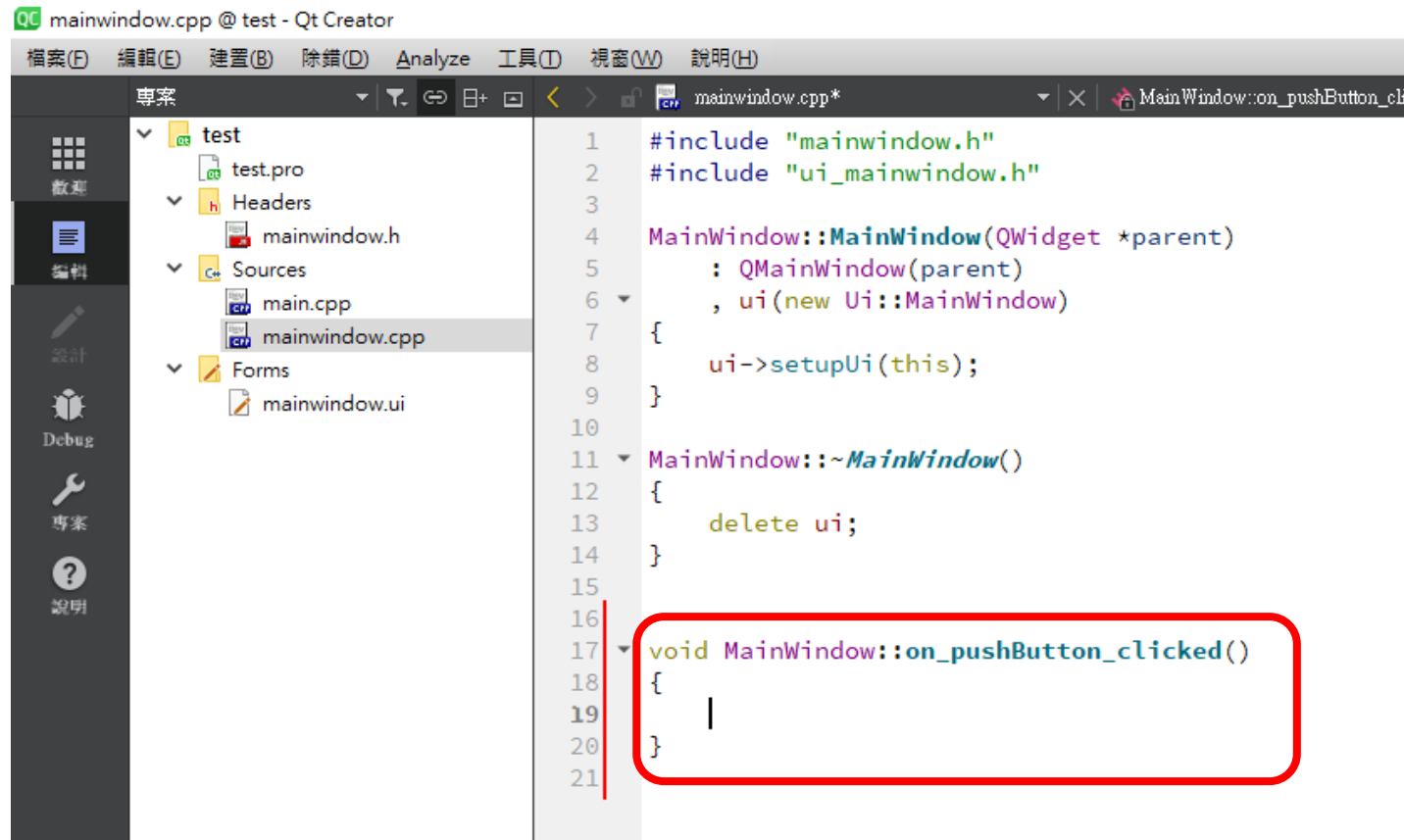


- Select the signal.



Some Useful Widgets

- Write your code here.

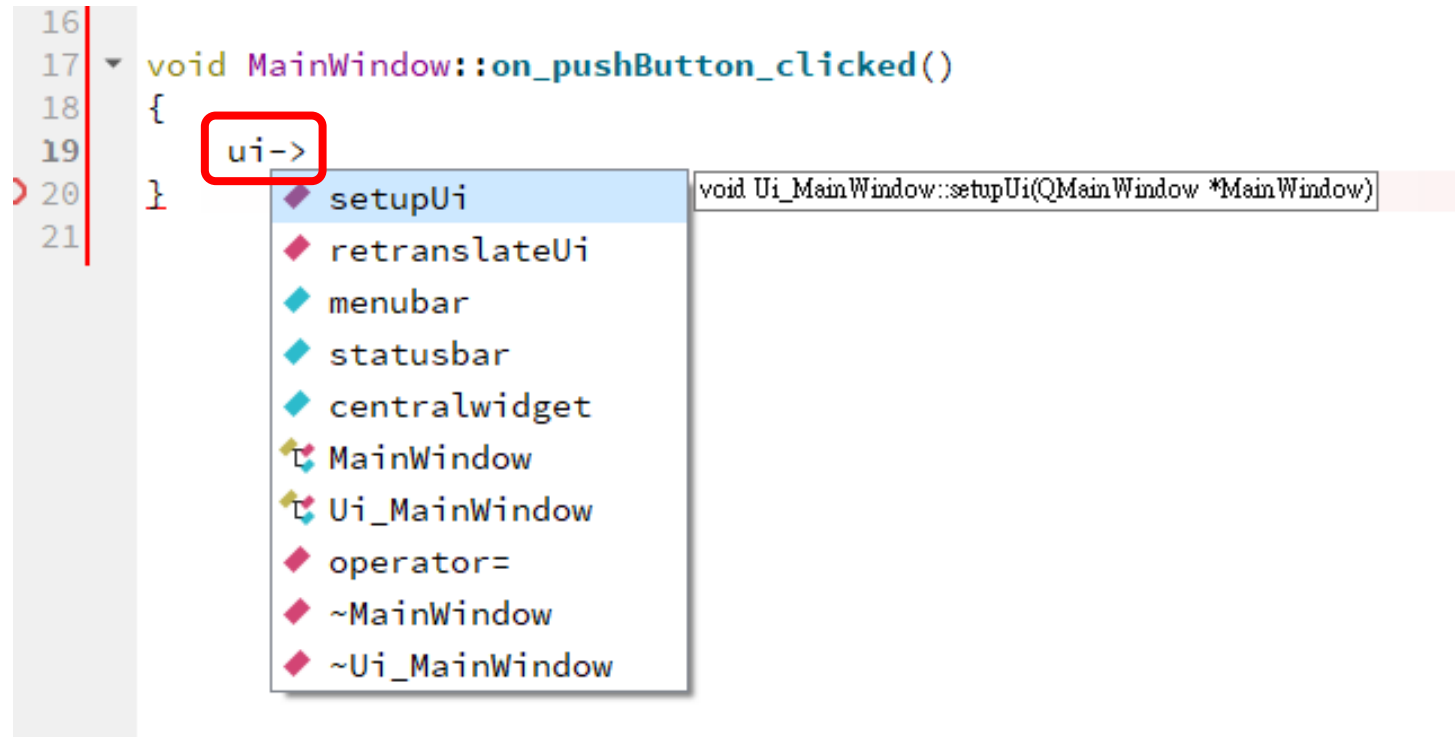


The screenshot shows the Qt Creator IDE with the file `mainwindow.cpp` open. The left sidebar displays the project structure for a test project, including `test.pro`, `mainwindow.h`, `mainwindow.cpp`, and `mainwindow.ui`. The main editor area shows the C++ code for `MainWindow`. The function `on_pushButton_clicked()` is highlighted with a red box, indicating where the user should write their code.

```
1 #include "mainwindow.h"
2 #include "ui_mainwindow.h"
3
4 MainWindow::MainWindow(QWidget *parent)
5     : QMainWindow(parent)
6     , ui(new Ui::MainWindow)
7 {
8     ui->setupUi(this);
9 }
10
11 MainWindow::~MainWindow()
12 {
13     delete ui;
14 }
15
16
17 void MainWindow::on_pushButton_clicked()
18 {
19     |
20 }
21
```

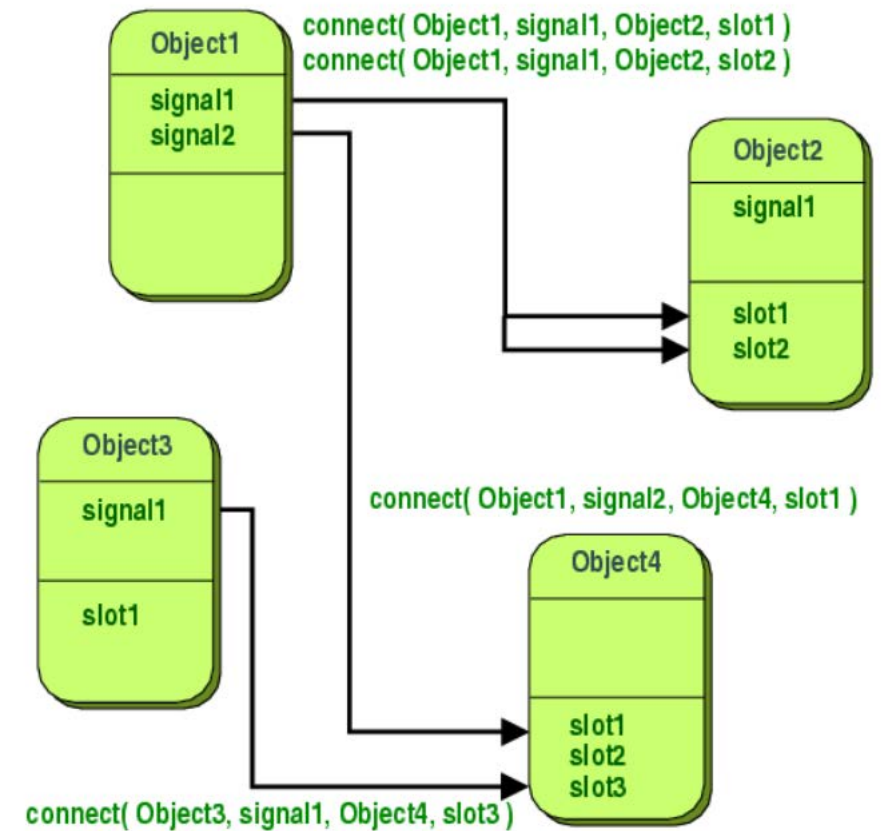
Some Useful Widgets

- You can find your widgets under **ui** namespace.



Introduction to Signal and Slot

- Signals and slots are used for communication between objects.
- When we change one widget, we often want another widget to be notified.
- For example, if a user clicks a “**Close**” button, we probably want the window’s “**close()**” function to be called.
- All classes that inherit from QObject or one of its subclasses (e.g., QWidget) can contain signals and slots.



Reference

- Qt Documentation
<https://doc.qt.io/>
- Qt Signal and Slot
<https://doc.qt.io/qt-5/signalsandslots.html>