

# 标注工具LabelRobomaster环境配置和使用教程

LabelRomaster工具由上海交通大学开发，包含自动标注功能，可以大大简化标注流程，提高效率。

<https://github.com/xinyang-go/LabelRoboMaster> 打开LabelRomaster Github 地址，查看有关 **标注类别ID** 和标注方法的介绍。

LabelRomaster由QT开发，本文档使用 **ubuntu20.04 + OpenCV 4.5.4 + QT 5.12.11** 配置和使用该工具。

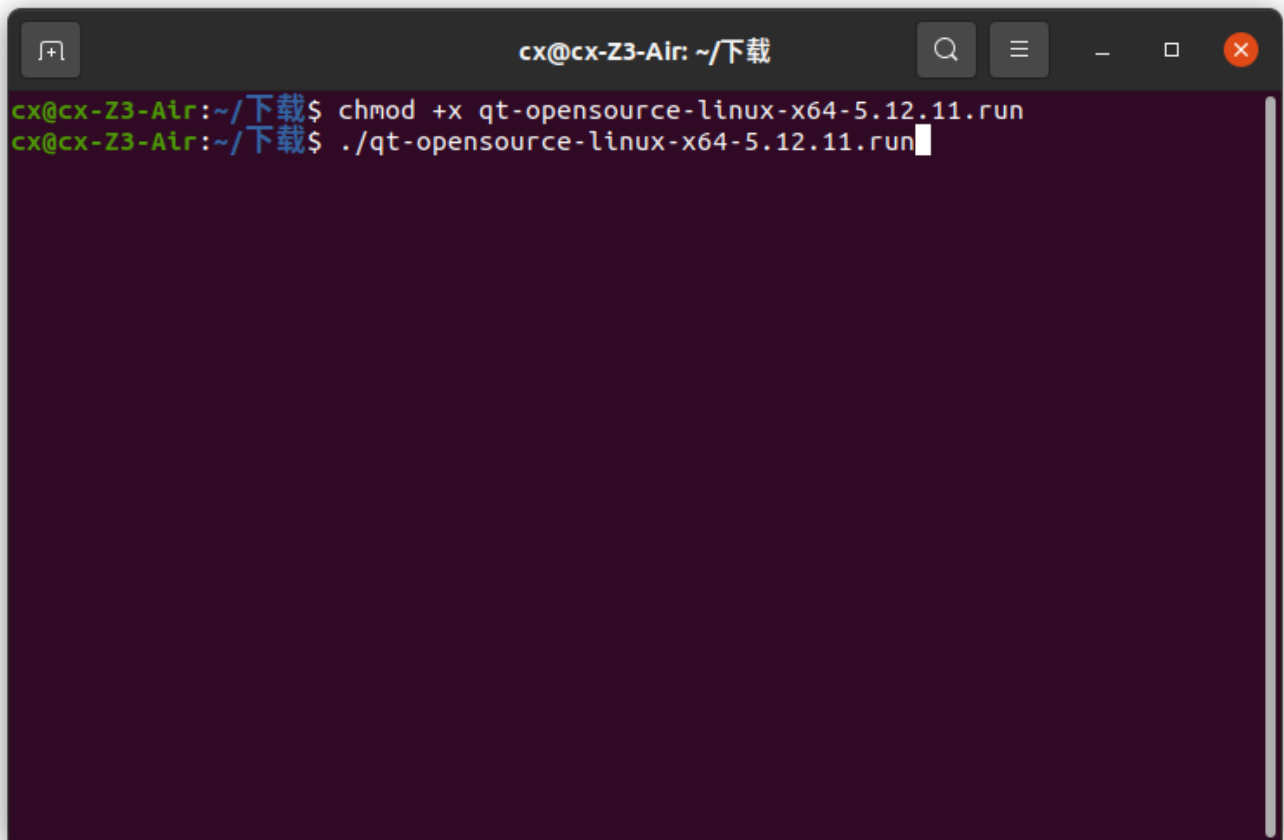
## 一、QT依赖安装

前往清华软件源下载QT 5.12.11的离线安装包，链接:

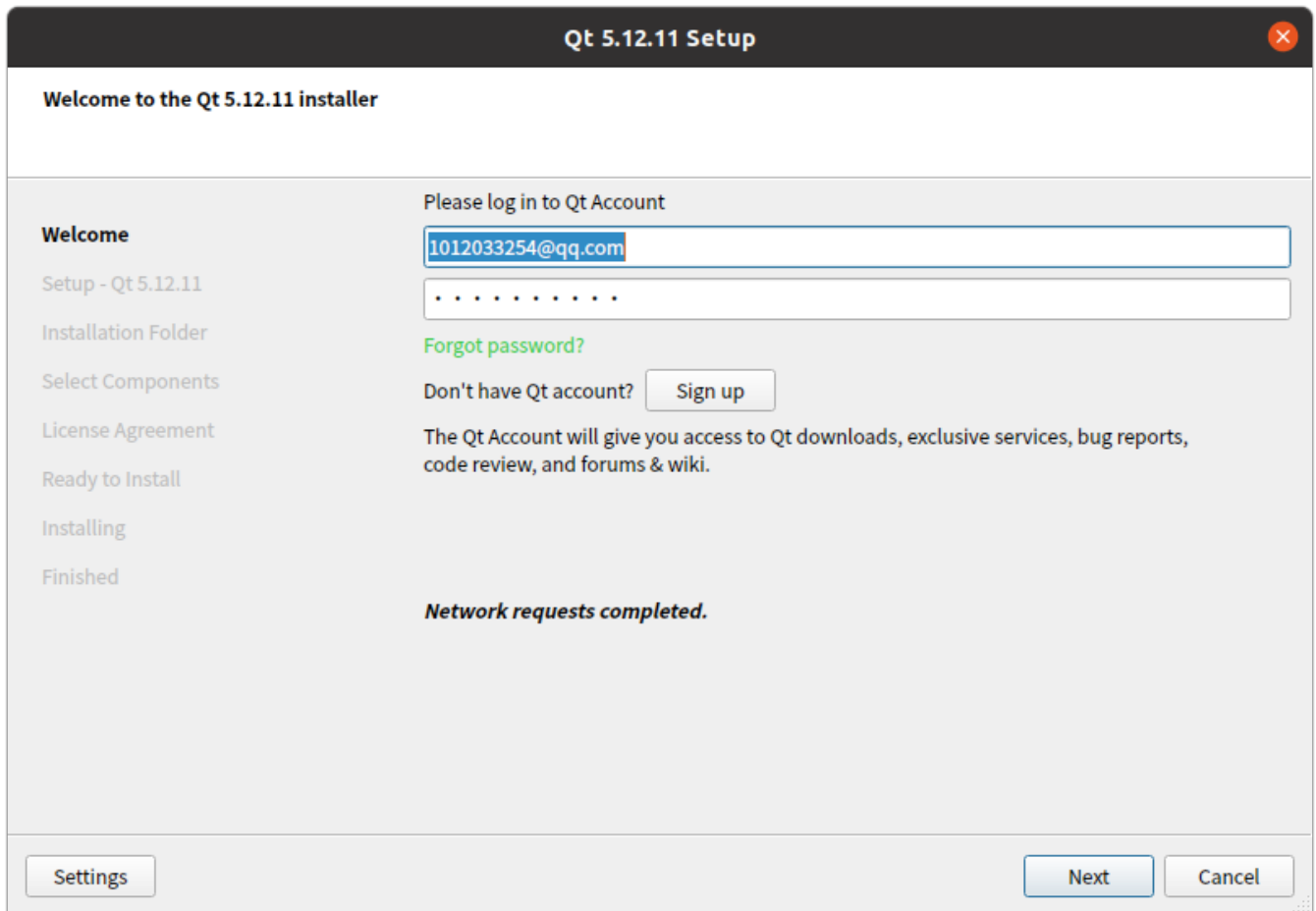
<https://mirrors.tuna.tsinghua.edu.cn/qt/archive/qt/5.12/5.12.11/qt-opensource-linux-x64-5.12.11.run>

如图所示，在下载目录下打开终端，隔行依次键入:

```
chmod +x qt-opensource-linux-x64-5.12.11.run
./qt-opensource-linux-x64-5.12.11.run
```



在打开的安装窗口中一路按照提示安装 QT 5.12.11



## 二、OpenCV依赖安装

编译安装OpenCV 4.5.3/4.5.4，参见OpenCV编译教程

## 三、其它系统依赖安装

QT的编译依赖OpenGL库，需手动安装，打开终端，键入：

```
sudo apt install libgl1-mesa-dev
sudo apt install libglu1-mesa-dev freeglut3-dev
```

同时，编译需要git cmake build-essential等库，打开终端，键入：

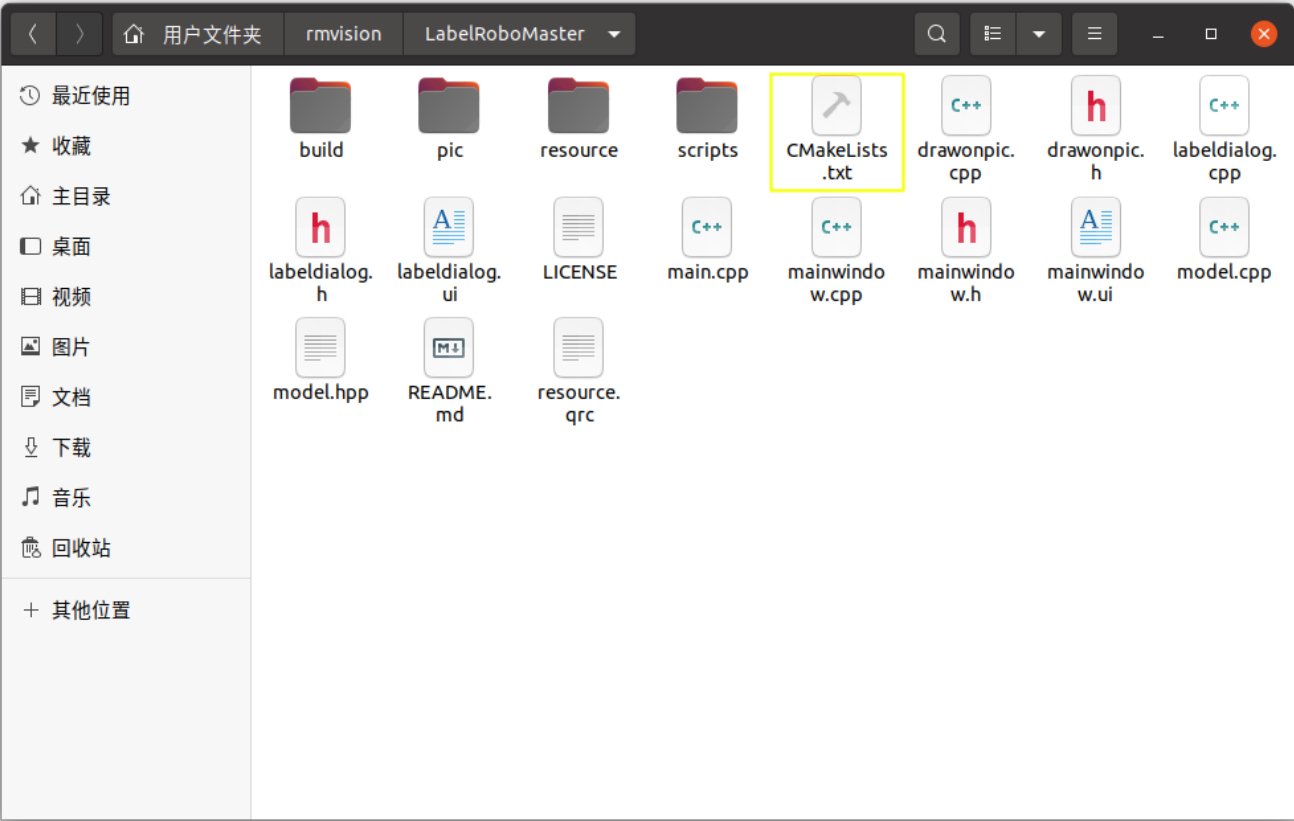
```
sudo apt install git vim cmake-qt-gui build-essential
```

## 四、获取源码并编译运行

在合适的安装目录下(比如~\rmvision)下打开终端，键入：

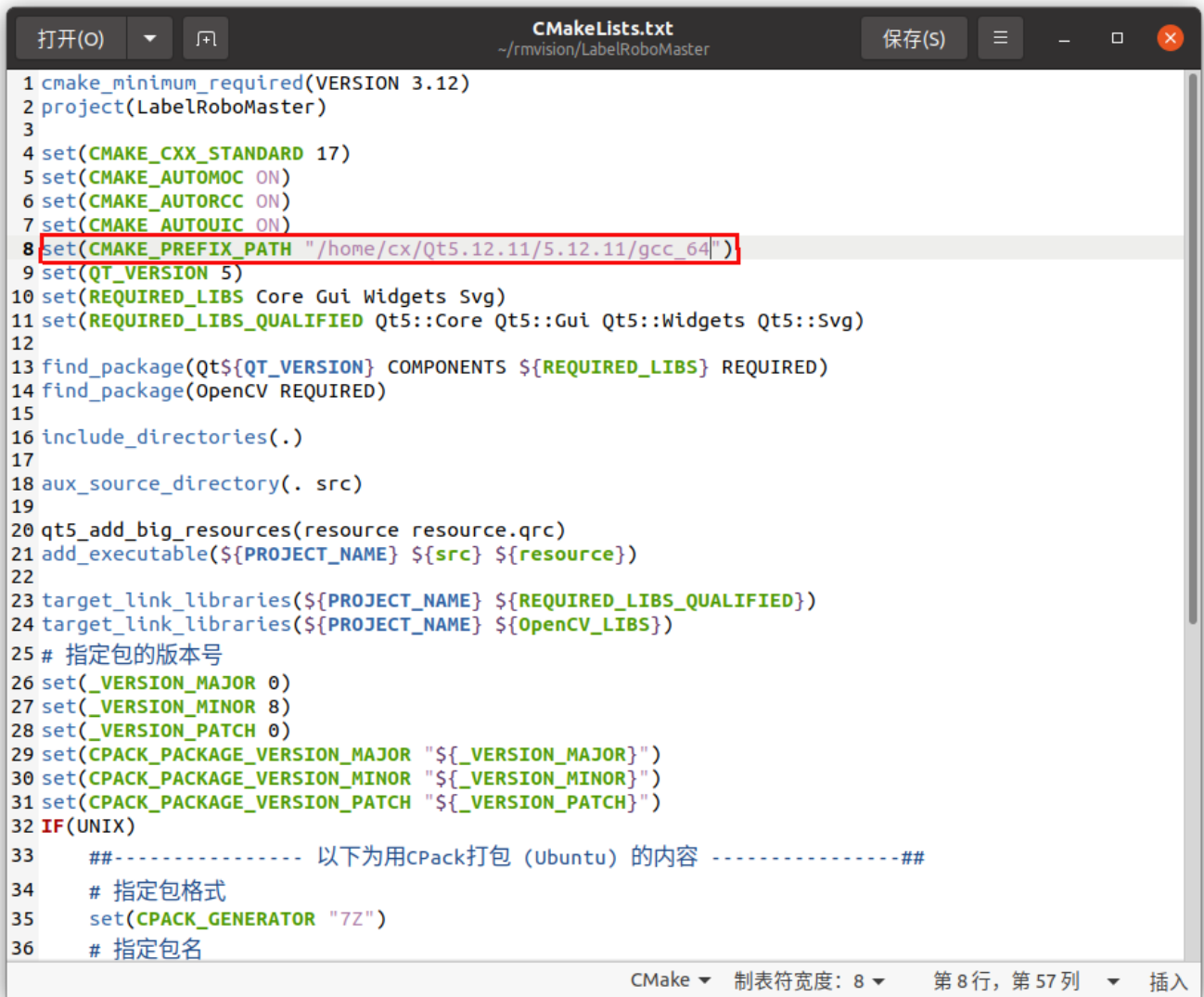
```
git clone https://github.com/xinyang-go/LabelRoboMaster.git
```

等待下载完成后，在文件管理器中打开该目录，如图所示：



打开CMakeLists.txt，按照图中模仿添加一行 Cmake 设置：

set(CMAKE\_PREFIX\_PATH "你的QT安装目录/5.12.11/gcc\_64")



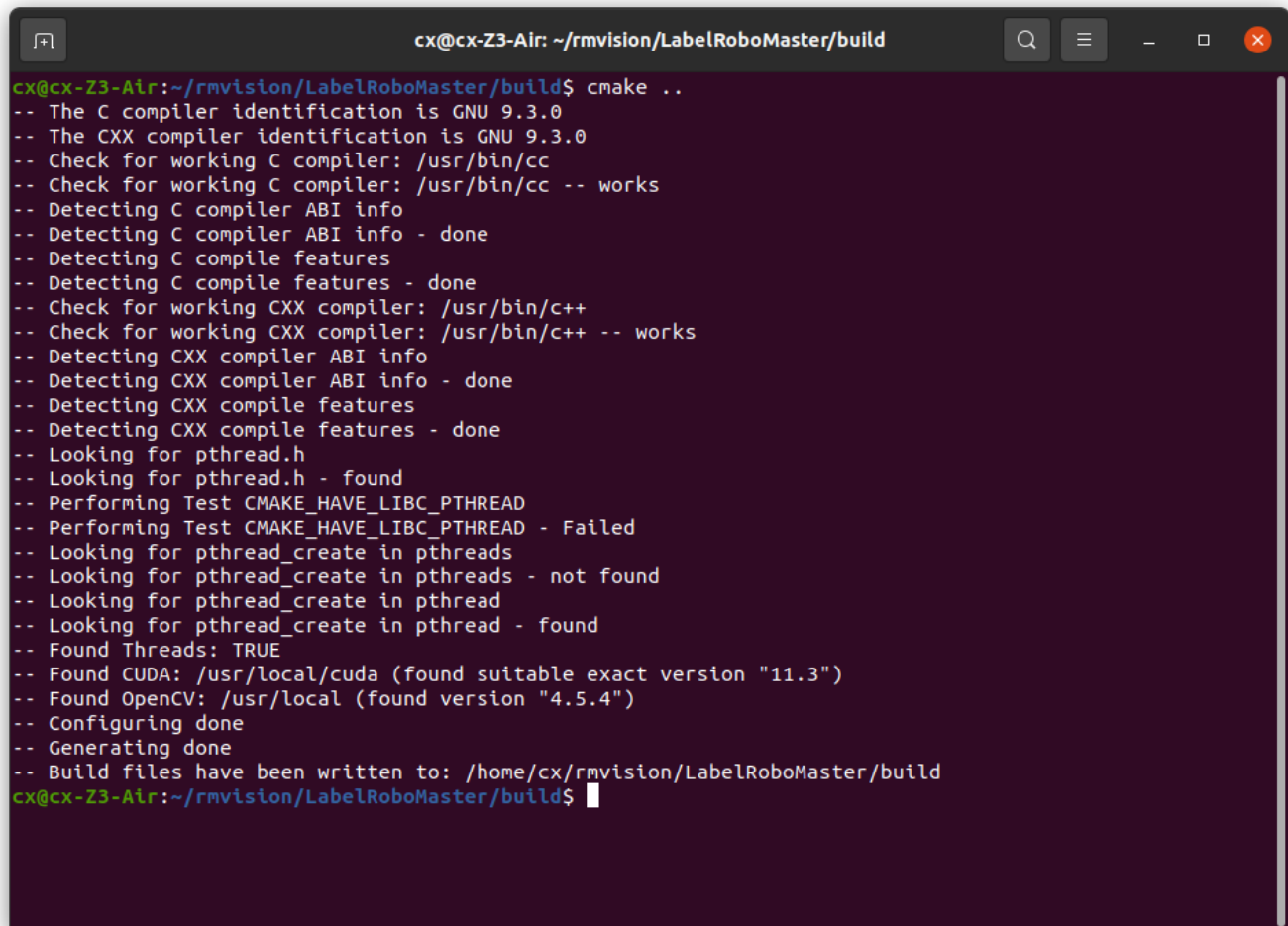
```
1 cmake_minimum_required(VERSION 3.12)
2 project(LabelRoboMaster)
3
4 set(CMAKE_CXX_STANDARD 17)
5 set(CMAKE_AUTOMOC ON)
6 set(CMAKE_AUTORCC ON)
7 set(CMAKE_AUTOUIC ON)
8 set(CMAKE_PREFIX_PATH "/home/cx/Qt5.12.11/5.12.11/gcc_64")
9 set(QT_VERSION 5)
10 set(REQUIRED_LIBS Core Gui Widgets Svg)
11 set(REQUIRED_LIBS_QUALIFIED Qt5::Core Qt5::Gui Qt5::Widgets Qt5::Svg)
12
13 find_package(Qt${QT_VERSION} COMPONENTS ${REQUIRED_LIBS} REQUIRED)
14 find_package(OpenCV REQUIRED)
15
16 include_directories(.)
17
18 aux_source_directory(. src)
19
20 qt5_add_big_resources(resource resource.qrc)
21 add_executable(${PROJECT_NAME} ${src} ${resource})
22
23 target_link_libraries(${PROJECT_NAME} ${REQUIRED_LIBS_QUALIFIED})
24 target_link_libraries(${PROJECT_NAME} ${OpenCV_LIBS})
25 # 指定包的版本号
26 set(_VERSION_MAJOR 0)
27 set(_VERSION_MINOR 8)
28 set(_VERSION_PATCH 0)
29 set(CPACK_PACKAGE_VERSION_MAJOR "${_VERSION_MAJOR}")
30 set(CPACK_PACKAGE_VERSION_MINOR "${_VERSION_MINOR}")
31 set(CPACK_PACKAGE_VERSION_PATCH "${_VERSION_PATCH}")
32 IF(UNIX)
33     ##----- 以下为用CPack打包 (Ubuntu) 的内容 -----##
34     # 指定包格式
35     set(CPACK_GENERATOR "7Z")
36     # 指定包名
```

保存并关闭

接下来在当前目录下打开终端，键入：

```
mkdir build
cd build
cmake ..
```

出现如下提示说明配置成功



```
cx@cx-Z3-Air: ~/rmvision/LabelRoboMaster/build
cx@cx-Z3-Air:~/rmvision/LabelRoboMaster/build$ cmake ..
-- The C compiler identification is GNU 9.3.0
-- The CXX compiler identification is GNU 9.3.0
-- Check for working C compiler: /usr/bin/cc
-- Check for working C compiler: /usr/bin/cc -- works
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Detecting C compile features
-- Detecting C compile features - done
-- Check for working CXX compiler: /usr/bin/c++
-- Check for working CXX compiler: /usr/bin/c++ -- works
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- Looking for pthread.h
-- Looking for pthread.h - found
-- Performing Test CMAKE_HAVE_LIBC_PTHREAD
-- Performing Test CMAKE_HAVE_LIBC_PTHREAD - Failed
-- Looking for pthread_create in pthreads
-- Looking for pthread_create in pthreads - not found
-- Looking for pthread_create in pthread
-- Looking for pthread_create in pthread - found
-- Found Threads: TRUE
-- Found CUDA: /usr/local/cuda (found suitable exact version "11.3")
-- Found OpenCV: /usr/local (found version "4.5.4")
-- Configuring done
-- Generating done
-- Build files have been written to: /home/cx/rmvision/LabelRoboMaster/build
cx@cx-Z3-Air:~/rmvision/LabelRoboMaster/build$
```

编译，键入：

make

出现如下提示说明编译成功

```
cx@cx-Z3-Air: ~/rmvision/LabelRoboMaster/build
-- Build files have been written to: /home/cx/rmvision/LabelRoboMaster/build
cx@cx-Z3-Air:~/rmvision/LabelRoboMaster/build$ make
Scanning dependencies of target LabelRoboMaster_autogen
[ 8%] Automatic MOC and UIC for target LabelRoboMaster
[ 8%] Built target LabelRoboMaster_autogen
Scanning dependencies of target big_resources_resource
[ 16%] Generating qrc_resourcetmp.cpp
[ 16%] Built target big_resources_resource
Scanning dependencies of target rcc_object_resource
[ 25%] Building CXX object CMakeFiles/rcc_object_resource.dir/qrc_resourcetmp.cpp.o
[ 33%] Built target rcc_object_resource
[ 41%] Generating qrc_resource.o
Scanning dependencies of target LabelRoboMaster
[ 50%] Building CXX object CMakeFiles/LabelRoboMaster.dir/LabelRoboMaster_autogen/mocs_compilation.cpp.o
[ 58%] Building CXX object CMakeFiles/LabelRoboMaster.dir/drawonpic.cpp.o
[ 66%] Building CXX object CMakeFiles/LabelRoboMaster.dir/labeldialog.cpp.o
[ 75%] Building CXX object CMakeFiles/LabelRoboMaster.dir/main.cpp.o
[ 83%] Building CXX object CMakeFiles/LabelRoboMaster.dir/mainwindow.cpp.o
[ 91%] Building CXX object CMakeFiles/LabelRoboMaster.dir/model.cpp.o
[100%] Linking CXX executable LabelRoboMaster
[100%] Built target LabelRoboMaster
cx@cx-Z3-Air:~/rmvision/LabelRoboMaster/build$
```

运行，键入：

```
./LabelRoboMaster
```

