Lesson 1-1 - The WICED Studio SDK

Welcome back to Cypress Academy, WICED WiFi 101. Before you get started with this video you should download and install WICED Studio from the Cypress WiFi website. WICED Studio is our Eclipse-based IDE for developing WiFi and Bluetooth products. We support running it on PCs, Macs, as well as Linux.

In this lesson, I will walk you through WICED Studio. and show you all the pieces of the WICED Software Development Kit (SDK).

When you first run the IDE, you will get the choice to select WiFi or Bluetooth. For the purposes of these videos you should choose 43xxx_Wi-Fi. This is not a permanent choice so don't worry… when the times come you will be able to switch back and forth with the SDK filter at the top of the screen

After picking the WiFi SDK, you will see a screen that looks like this – a fairly normal Eclipse view of a Software Development Kit.

On the left, you can see the project explorer. This is where all of the files in the SDK reside along with your project. I will show you this in detail in a just a minute.

In the middle of the screen you will see README.txt. This file is delivered with every version of WICED Studio and is packed with information about your specific release. We have been releasing WICED Studio multiple times per year, and there is always good new stuff to find out about in the README.txt. In general, the lessons that I am showing you will work with the most current release, and in fact, I will keep up the textbook and the projects to make sure they stay in sync with our software.

In the upper right hand part of the screen you will see the Make Targets window. WICED Studio is based on Make, so in order to build and program your project you will need to create a "make target" which I will talk about in detail in the next video.

In the lower right hand part of the screen you will see the WICED Studio IDE help screen which gives you information about how to use the tool itself to build your projects.

Finally, at the bottom of the screen you will find the Eclipse console where you will find all of the information, warning, and error messages that are created by compiling and programming your project.

Now let's dig in with the project explorer. When you click on the little expand button you will see nine directories

- Apps
- Build
- Doc

- Include
- Libraries
- Platforms
- Resources
- Tools
- WICED

In addition, you will see about a dozen other files required to run WICED. Two of the interesting ones are "README.txt", which I already showed you, and shows up in the middle of the screen when you start WICED. The other one is called "version.txt" and this tells you which version of the SDK you are using.

Now let's look at the Apps folder. This is where all of the source code for the demo projects, example projects, and, most importantly, YOUR project, will reside. In the next videos I will go into detail about how to create new projects, but for now, know that you will need to make a folder in the apps folder containing your source code. You can spend a little bit of time looking at the demo apps, and in the next video I'll show you how to build and program them.

The next directory is called "build". It contains the intermediate files used to build your project. For instance, each of your dot c files will end up in dot o files and will reside in this directory before being turned into a hex file by the linker. You can delete this directory any time you want, and it will be recreated by the make process. In fact, that's exactly what "make clean" does.

The doc directory contains all of the WICED SDK documentation. The most important of these files is called "API.html" which is an HTML browsable document that's generated by Doxygen. You can double click API.html, and it will open up in a window inside of Eclipse, or you can right click "open with system editor", and it will open up inside of your web browser.

The include directory contains all of the c-header files for the WICED SDK.

The libraries directory contains important utilities which you can use as part of your project including HTTP, DNS, DHCP, MQTT, etc. I will talk in more detail about these in the upcoming videos

The platforms directory contains all of the board support packages for each of the development kits… sometimes called development platforms. These files include the schematics for the board, the definitions of the pins, the radio firmware, and all the other things required to make the underlying fabric work. There will an entire video dedicated to discussing these directories.

The resources directory is used to hold things that are required for your project, but are not C source files. For instance, webpages for a webserver, or security keys to attach to amazon.com

The tools directory contains the compiler and all of the rest of the toolchain required to build and program your projects.

Finally, the WICED directory holds the actual SDK files.

In the next video I will show you how to build and program your first project.

You can post your comments and questions in our WiFi developer community on cypress.com or, as always, you are welcome to email me at alan_hawse@cypress.com or tweet me at @askiotexpert with your comments, suggestions, criticisms and questions.