

Introduction to PSoC 5

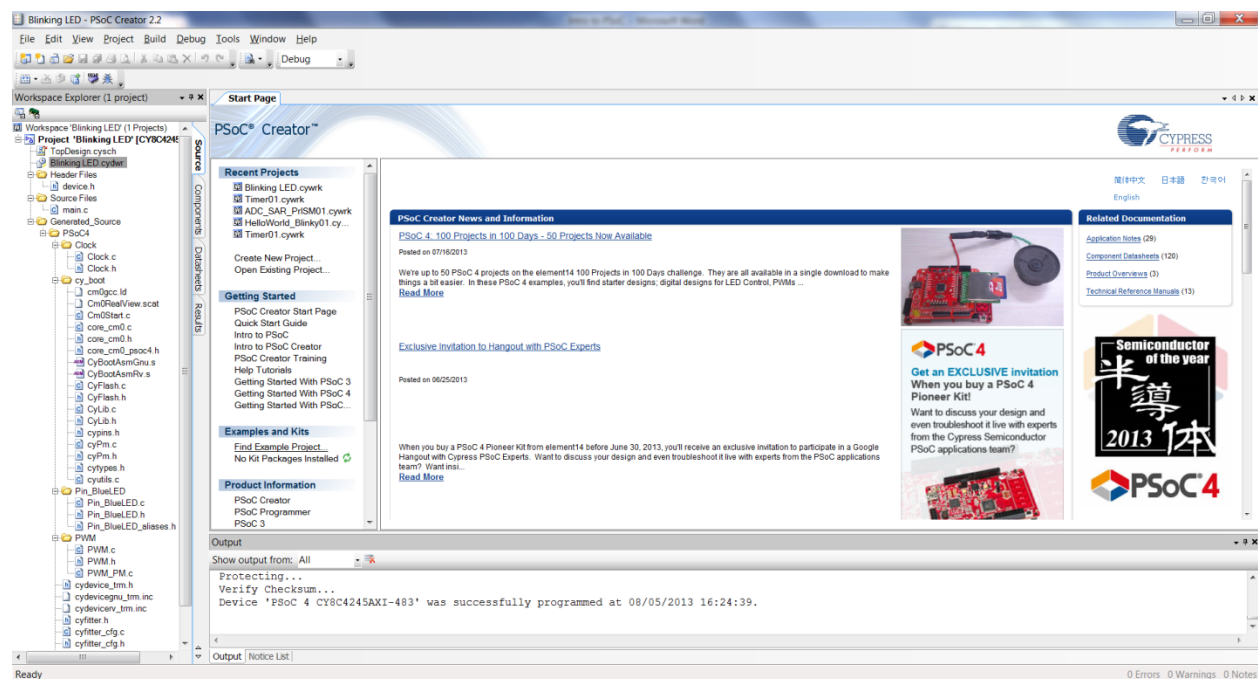
Purpose

This lab will introduce you to the PSoC board and tools. You will use the PSoC 5LP Development Kit to experiment with a blinking LED.

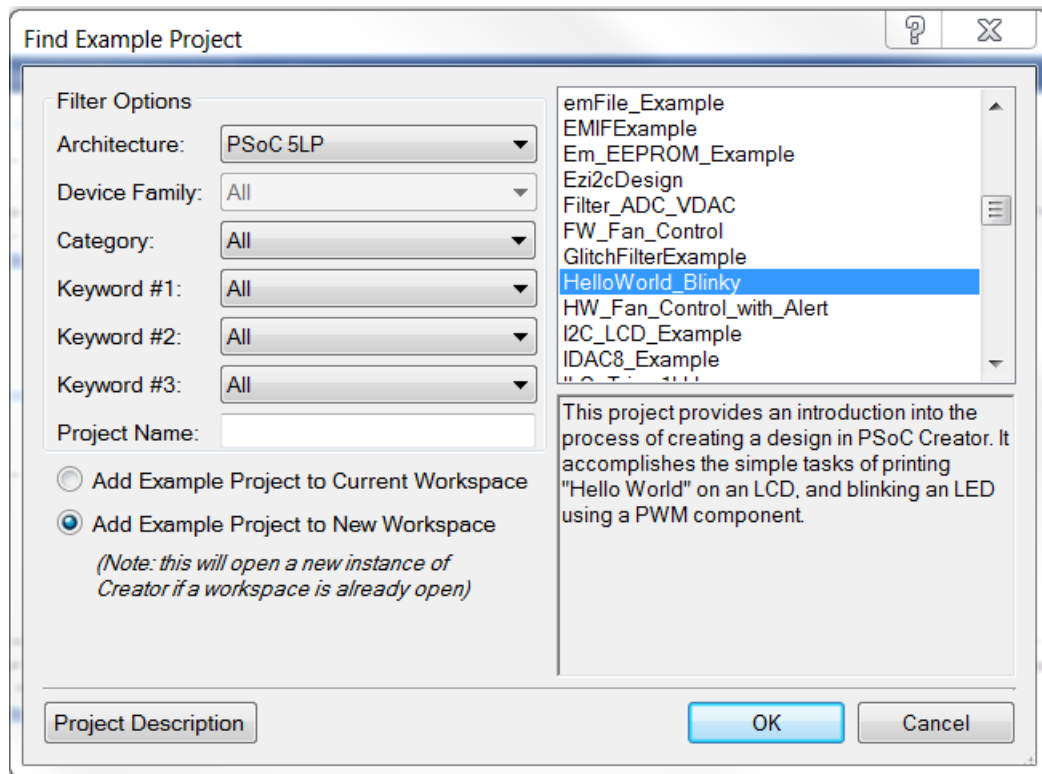
Setup

Start PSoC Creator.

Select Find Example Project from the Start Page:

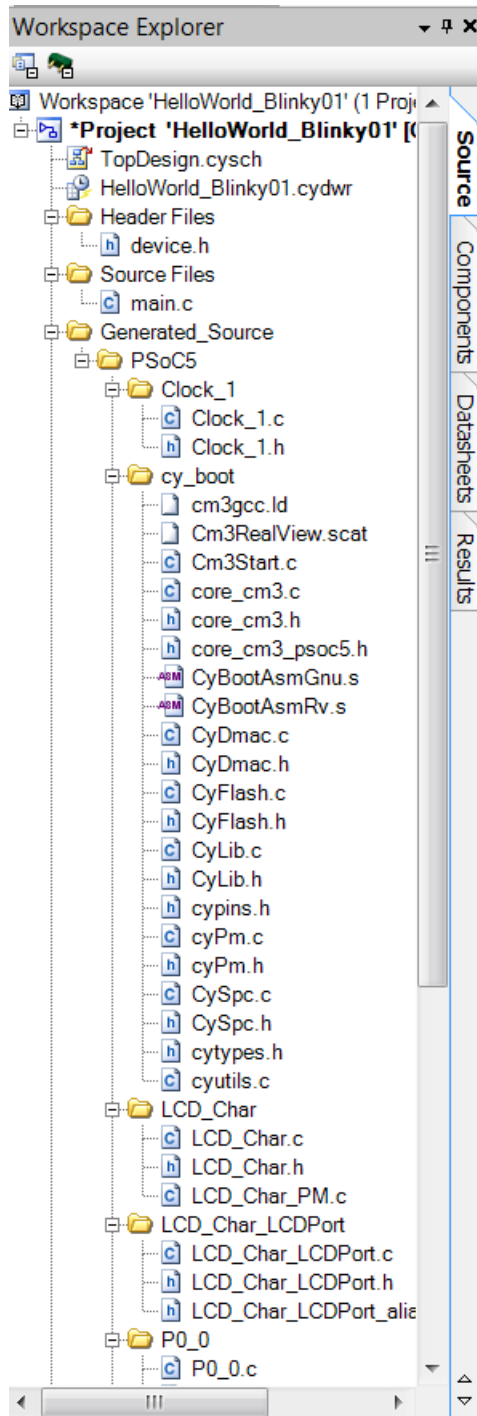


Use the Find Example Project menu to first select architecture PSoC 5LP, then HelloWorld_Blinky:



Procedure

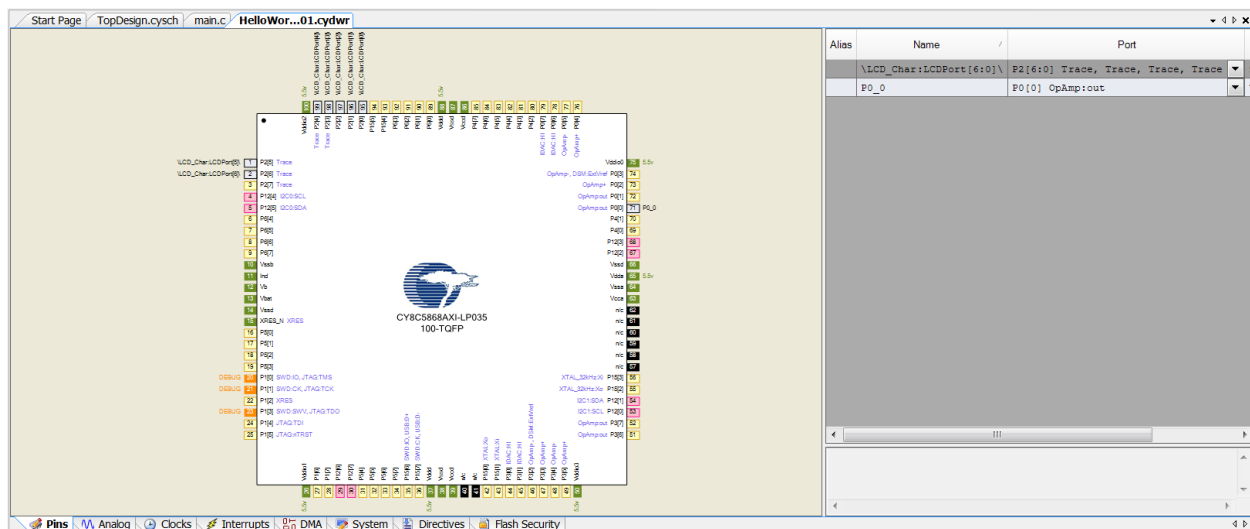
The Workspace Explorer tile on the left-hand side of the screen gives all the source files. Other tabs give you access to the components and datasheets:



Use the Workspace Explorer pane to open the main.c file.

Q1: What routines does main() call?

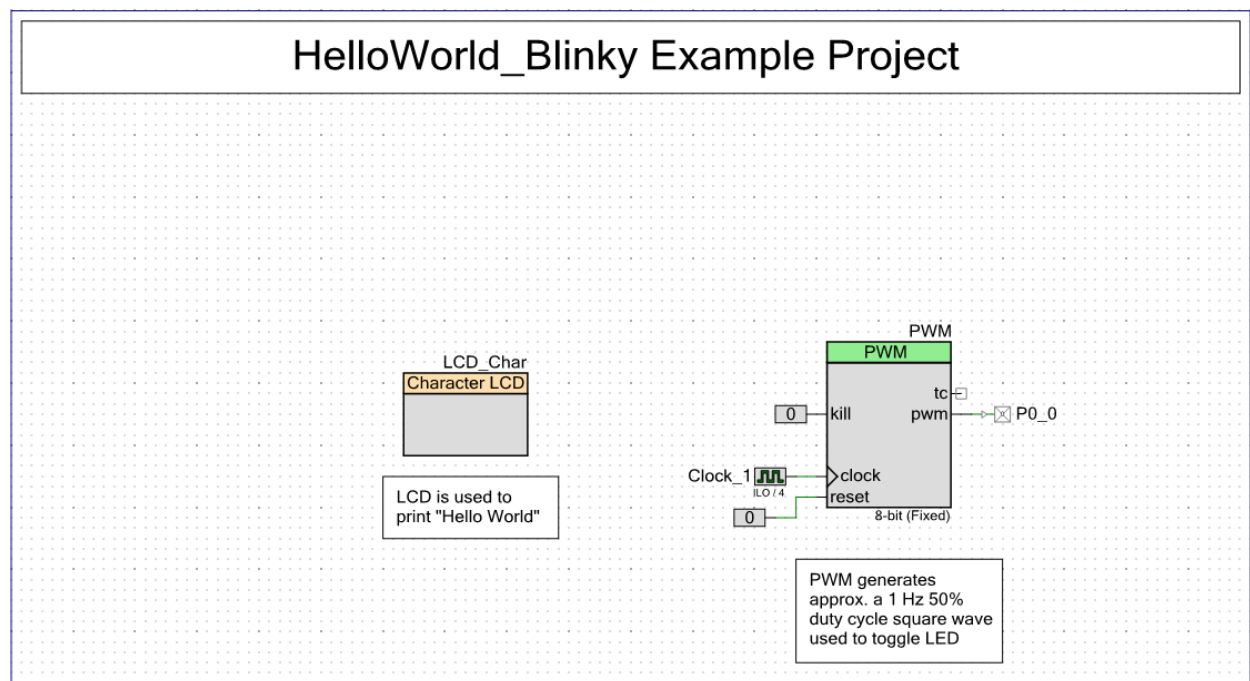
Double-click on HelloWorld_Blinky01.cydwr in the Workspace Explorer to open the pinout diagram:



This diagram shows how the chip's internal signals are assigned to its pins. Note that tabs at the top of the main window can be used to switch between the different open files in the project.

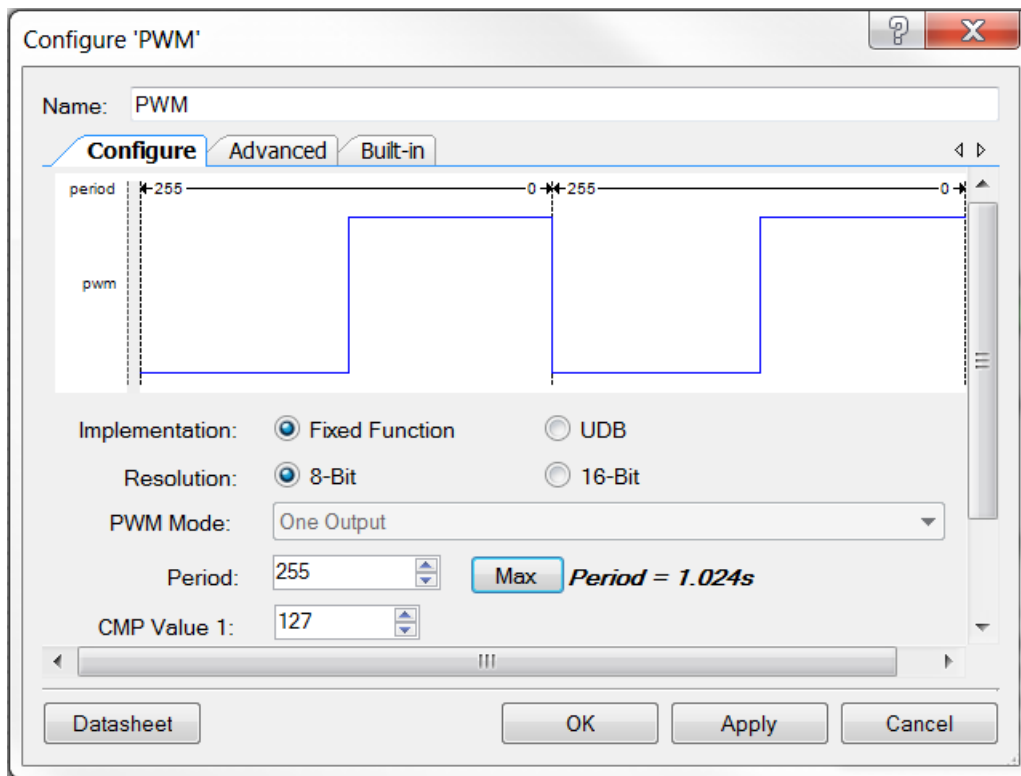
Q2: To what pin is P0_0 assigned?

Go back to the Workspace Explorer tile and open the TopDesign.cysch file. It will appear in the main tile:



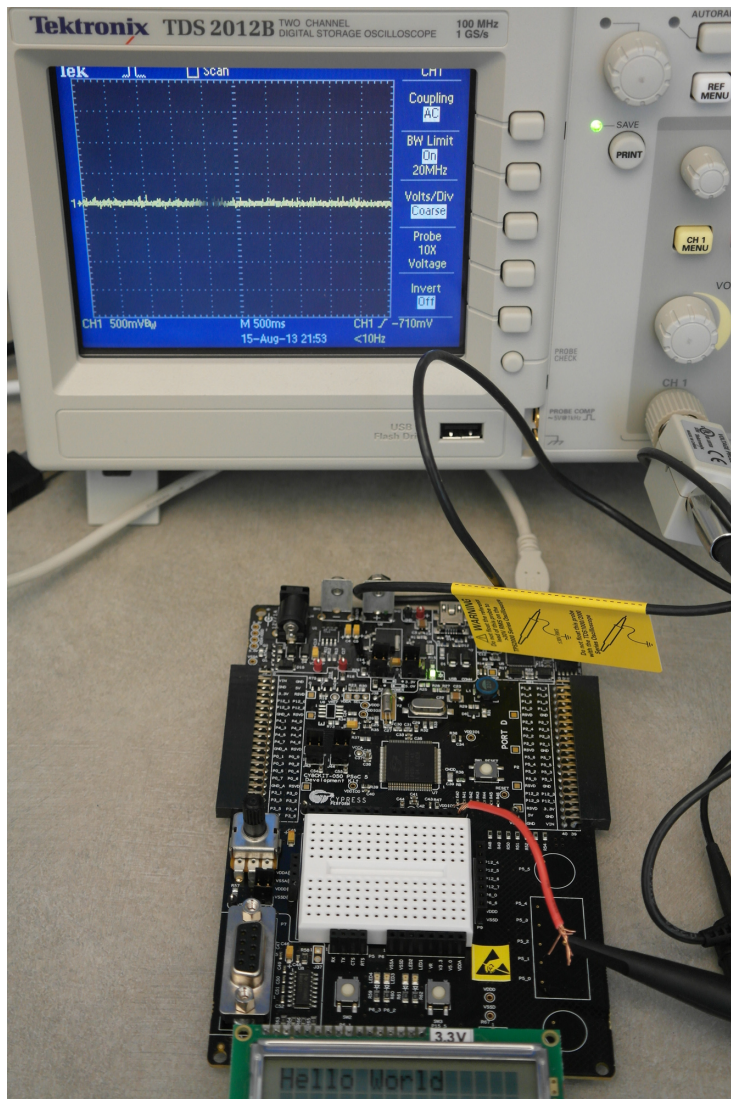
This is the hardware schematic for the design. The schematic includes components both inside and outside the PSoC 5LP chip.

The output pin is driven by a pulse-width modulator (PWM) whose frequency is determined by a clock. Double-click on the clock symbol to examine its properties:



Q3: What is the initial setting for the PWM frequency?

You can compile, link, and load the design onto the board using Debug->Program. You can observe the value of P0_0 using an oscilloscope.



Q4: What is the length of the on period of P0_0?

Go back to the schematic and set the PWM frequency to 4. Recompile and reload the design.

Q5: What is the new on period of P0_0?

You Should Turn In

1. Your main.c code.
2. Answers to the Q questions.

As always, output snapshots are cool.

Super-duper bonus points: use the potentiometer to change the value of NDELAY on-the-fly.