Download PSoc Creator 4.0 for Windows

Go to file 🡪 new -> Project

Target Device 🡪 PSoc 5 LP (our robot controller)

Next 🡪 Empty Schematic

Location -> Desktop (or anywhere you like),

Name your project

Finish

Select Tab: Top Design

On the right pane, Cypress 🡪 Digital 🡪 Functions 🡪 PWM (Pulse Width Modulation)

Drag the PWM object to your Grid design space, increase size to 150% or more

PWM has 5 interfaces: 2 left (clock + Reset), and 3 right (Tc, PWM1, and PWM2)

Start by wiring a clock to it’s Clock interface: Go to Cypress 🡪 Components 🡪 System 🡪 Clock

Drag a Clock and “**Align**” it with the clock terminal on your PWM object. Make sure they are both visually connected.

Wire the Reset interface: Go to Digital 🡪 Logic 🡪 Logic Low

Drag and connect this component to your PWM Reset interface

Next go to Ports& Pins 🡪 Digital Output Pin

Drag and connect two “Digital Output Pin” objects and wire them to the PWM1 & PWM2 interfaces of your PWM object

Rename them: Double-click on Pin 1 and rename it to “Right\_Eyeball\_Pan”

Double-click on Pin 2 and rename it to “Right\_Eyeball\_Tilt”

Double-click on your PWM object and rename it to “Right-Eyeball”

In its properties, change the 8-bit to 16-bit

You should have [Period 255 and 21 mSec]

Change the values to [Perior = 60 000 and 5 mSec]

Adjust CMP values:

CMP1: 0, CMP2: 0

Click OK

Go to Clock, change frequency from 12 MHerz to 3 MHerz

Go back to Period, and you should fint the time reading 20 mSec

Next go to CWDR tab (drag it from right pane if you have to)

You will see two objects:

Right\_Eyeball\_Pan & Right\_Eyeball\_Tilt on the port list (right pane)

P0 [0] to p15 [7]

Pick P0[0] and Po[1]which corresponds to wiring p0.0 and p0.1 pins on your controller to the Right\_Eyeball\_Pan and Right\_Eyeball\_Tilt PWM

Next Go to main () and do the code below:

#include "project.h"

int main(void)

{

Right\_Eyeball\_Start();

for(;;)

{

Right\_Eyeball\_WriteCompare1(1500);

Right\_Eyeball\_WriteCompare2(1500);

CyDelay(1000);

Right\_Eyeball\_WriteCompare1(6500);

Right\_Eyeball\_WriteCompare2(6500);

}

}

The code should build and run smoothly

Next, connect your Controller to your Computer (Via USB) and auto-install the driver

On your screen, click on the “program” icon, you’ll get an error. You will need to select the right device as follows:

Go to Projects -> Device Selector,

Select CY8C5888LTI-LP097

Rebuild your code, then start connecting your Servo motors

Remember: VDD is power (Red)

GND is Ground, Brown