

EE 480

HOMEWORK 6

Note: Homework assignments must be completed individually. Plagiarism will result in receiving no credit for the assignment. Thorough answers for each question (250 - 300 word answers) is expected. Due date for this homework can be found on the course website schedule. Use the upload form link on the course website schedule to submit this homework assignment.

Note: This homework assignment requires the following components (additional to the RPi) to complete: LEDs, resistors, jumper wires, breadboard, servo motor, and transistors.

1. Give specific details for using the RPi's GPIO as digital outputs and digital inputs.
 2. Describe the importance of pull-up and pull-down resistors as they relate to using the RPi's GPIO pins.
 3. Complete the **An Enhanced GPIO Class** section in chapter 6, pages 242 – 244. Copy the results of the test for your answer and give a picture/video of your program as it executes.
 4. Complete the **WiringPi** section in chapter 6, pages 252 – 259. Copy the results of the test for your answer and give a picture/video of your program as it executes.
 5. Complete the **PWM Application – Controlling a Servo Motor** section in chapter 6, pages 266 – 268. Copy the results of the test for your answer and give a picture/video of your program as it executes.
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