# Lab 1 Pre-lab Example

## Team Information

**Lab number:** Click here to enter text.

**Date:** Click here to enter a date.

**Team Members:** Click here to enter text.

**Team Number/Name:** Team Member Responsibilities

**Software Design:** Click here to enter text.

**Hardware Design:** Click here to enter text.

**Quality Assurance:** Click here to enter text.

**Systems Integrator:** Click here to enter text.

**Wiki Creator:** Click here to enter text.

# Hardware

### Part 1

Draw the schematics or create a table detailing the connections for Part 1 of Lab 1. An example is provided.

|  |  |  |
| --- | --- | --- |
| Connection Purpose | Device 1/Pin identifier | Device 2/Pin identifier |
| Power | Starter Board/Vdd | PIC24F/Pin 13 |
| Debugging | Debugger/Pin 1 | PIC24F/Pin 11 |
| Debugging | Debugger/Pin 4 | PIC24F/Pin 12 |

### Part 2

Describe the cable that you will create for Part 2. Each connector should have a type and a **unique** identifying number. You can use a table like the one below, or you can draw a diagram.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Wire Color | Connector Type / # | Device 1/Pin identifier | Connector Type / # | Device 2/Pin # |
| Black | **Standard DC (1)** | Starter Board/Vdd | PIC24F Header (2) | PIC24F/Pin 13 |
| Green | **6-wire angle-header (3)** | Debugger/Pin 1 | PIC24F Header (2) | PIC24F/Pin 11 |
| Green | **6-wire angle-header (3)** | Debugger/Pin 4 | PIC24F Header (2) | PIC24F/Pin 12 |

### Part 3

Draw the schematics or create a table detailing the connections for Part 3 of Lab 1. You can choose to use a table or use a diagram.

# Tests

### Part 1

List the tests that you intend to do based on the Lab 1 procedures. Describe the name of the test, the tool you intend to use, and a description of the test. Do this for each part in Lab 1.

|  |  |  |
| --- | --- | --- |
| Test Name | Tool | Description |
| Continuity Test | Digital Multi-meter | Test all wire connectors, solder joints, and wire-wraps for continuity |
| Power Test | Digital Multi-meter | Test that any created circuits have power correctly flowing |
| Grounding Test | Digital Multi-meter | Test that any switches connected to ground actually ground a powered circuit |
| Component Test | Digital Multi-meter | Test that appropriate pins on the switch are connected |

You may also include any software tests that you intend to make.

|  |  |  |
| --- | --- | --- |
| Test Name | Input | Description |
| timerTick Test |  | Test that timerTick indeed ticks at the correct interval |
| displayTime Test | “10000” | Test that this function assigned the appropriate register to “10:00:00.” |
| Register Test |  | Test that the register configurations for the timer work. |

### Part 2

### Part 3

# Software

### Part 1

List the relevant control registers for controlling the LEDs in Part 1 of Lab 1.

|  |  |
| --- | --- |
| Device: | Register(s): |
| Digital I/O |  |

Also describe the function of the microcontroller software as a finite-state machine.

### Part 2

List the relevant control registers for controlling the LEDs in Part 2 of Lab 1.

|  |  |
| --- | --- |
| Device: | Register(s): |
| Timer |  |

### Part 3

Also describe the function of the microcontroller software as a finite-state machine in Part 3 of Lab 1.