

MINIPROJECT 0 - BLINKING LED

AARON HOOVER & BRAD MINCH

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1 *Description*

The purpose of this first miniproject is to get you set up with the development tools we'll be using throughout the class to compile and load code onto our PIC24 microcontroller platform.

The objectives for this project are:

1. Install and configure all tools required to develop code for the PIC24 microcontroller platform we will use throughout the class.
2. Familiarize yourself with distributed revision control tools for managing your source code (`git`/Github).
3. Get comfortable reading, modifying, compiling, C source code for the PIC24.
4. Interface an external piece of hardware (standard coin acceptor) to the PIC microcontroller.
5. Use a bootloader script to load compiled code onto the microcontroller over a USB connection.

2 *Instructions*

1. Install the MPLAB compiler and the SCons software construction tool (or MPLABX integrated development environment) by following the instructions in the [Build Tools](#) handout.
2. Install and configure `git` according to the instructions in the [Getting Started with Git](#) handout.
3. After you've forked and cloned the `elecansims` repository, modify the code included in one of the `blink` sample projects (`blinkint` or `blinkpoll`) to change the blinking behavior of the three LEDs on the PIC24 board.
4. Compile and load your code onto the board to check that it behaves as you expect. (To do this, you will need to reference the bootloader README in the `elecansims` repository.)
5. Connect a coin acceptor to a digital I/O pin on the PIC24 board and modify your code to toggle an LED when a coin is inserted into the coin acceptor.

6. Compile and load your code onto the board to verify that it works as expected. Show an instructor or a ninja your working system.
7. Commit and push all of your changes back to your own elecanisms remote repository.
8. Create a README.md (the “.md” extension stands for “mark-down”) file detailing the steps an uninitiated user (with access to an elecanisms board) would need to take to get your “blink” program running.

3 *Deliverable*

By no later than the start of class on January 30, 2018, each group should email a link to the README file in your Github repository to both instructors. Please include the words “elecanisms miniproject 0” in the subject line of your email.