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Peer Design Review

On Nov. 17, 2020, our team exchanged schematics with Team #14 and exchanged feedback on our designs.

Project: Automatic Bird Feeder
Description: An automatic bird food dispenser that detects bird motion to dispense food.
Review of our schematic:
- Schematic needs to flow from left to right.
- Rename serial port. Describe the serial port function.
- Label inputs and outputs (data flow).
- Use boxes for circuit blocks.

On Nov. 17, 2020, our team met with Team #17 to discuss our designs.

Project: Manual Hole Disc Player.
Description: Device reads disc based on flaps, 4 bits per time, plays music.
Review of our schematic:
- Through holes will need to be done ourselves.
- Buy headers for through holes.
- Place the vias on the corners of the board? Use vias wherever you want a through-hole component.
- Type of resistors: shouldn't matter too much. Look at data sheets for dimensions.
- Jameco.com to buy components.
- Use a larger power transistor: T0220, TIP31.
- Diodes for voltage kickback. Place it for the water pump.
- Add capacitors to the power pins on the IC.

On Nov. 18, 2020, our team met with Andrew Greenberg to discuss our schematic and PCB design.

Review of our schematic:
- Where is the power in the schematic? The lithium ion battery will power the ESP through a 3.3V voltage regulator.
- Copy the ground symbol multiple times rather than using wires in the schematic.
- Put a power boost block into the schematic as well.
- I2C requires 4.7k pull-up resistors. SDA and SCL. Label these as well.
- Change the 10k resistors to 4.7k resistors.
- Use headers.
- Through holes are acceptable, although he would push toward using a surface mount.
- Label everything and put notes.
Review of our PCB:
- Mark everything. Make the power lines thick.

- Put a ground plane on the bottom as well.
- Put vias every ½-1 inch.

On Nov. 18, 2020, our team met with Team #8 to discuss our designs after finalizing our schematic and PCB layout.

Project: Facial Recognition Smart Door Lock.
Description: Raspberry Pi camera scans face to verify correct identity to unlock a door.
Review of our schematic:
- Think about how long the battery will last, since our device needs to be functional for a long time.
- Label functionality of button for reset.