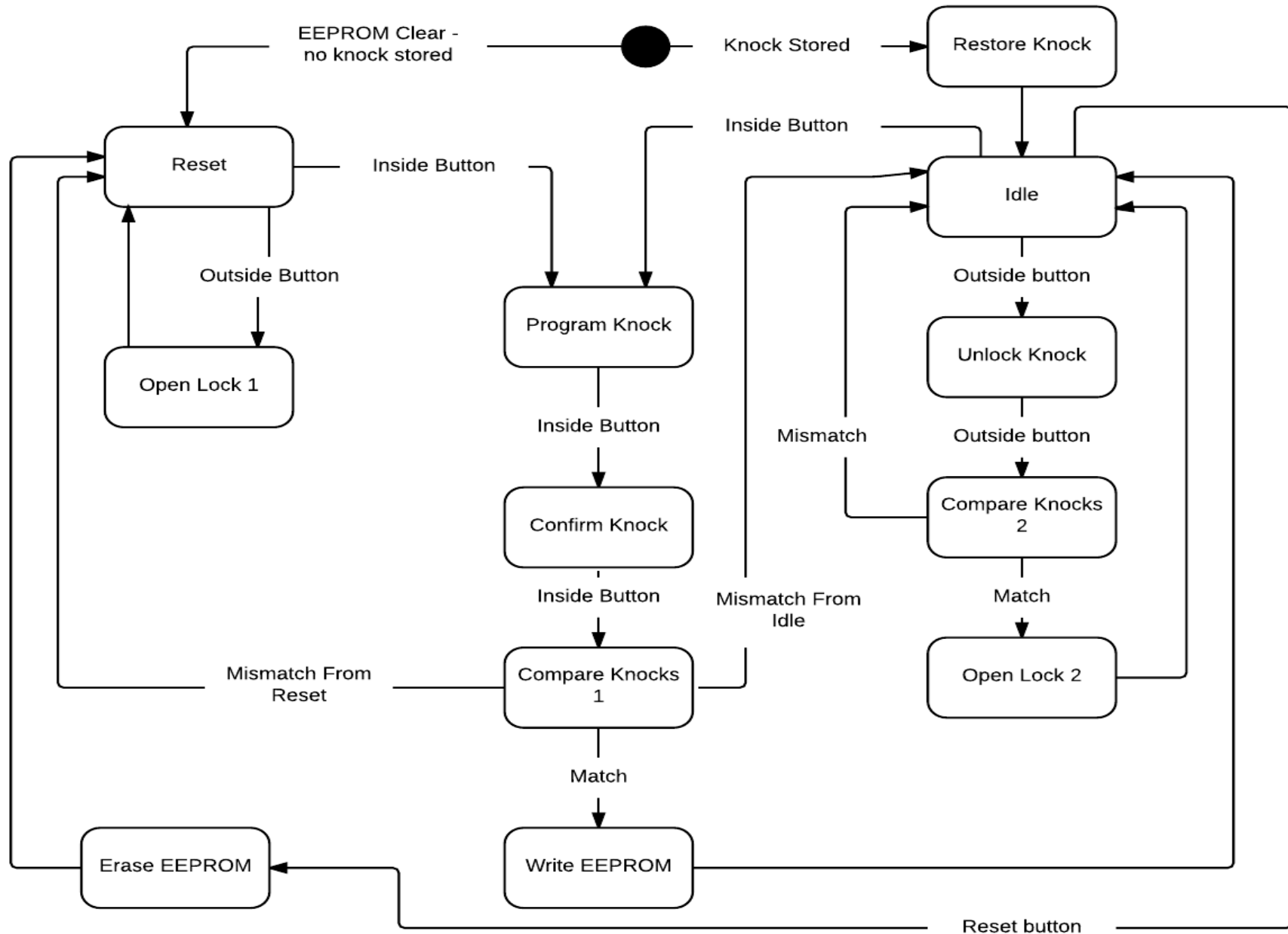


Software Design

- Voltages above a pre-defined threshold count as a knock.
- Knock times are stored in milliseconds.
- Buttons are active high.
- Solenoid opens for 5 seconds.
- Red and green LEDs convey information to the user.
- Uses a program mode and an unlock mode to interact with the user.

Software Flowchart



Software Issues

- Knock sensor threshold.
- Knock time threshold.
- Button press not instantly going low after releasing it.
- Initial design not in line with specification.
- Microcontroller clock frequency too low.
- DebugWire issues while prototyping.
- PORTB5 stuck outputting 5V.

What I Learned

- ▯ Familiarized myself with the Atmel AVR studio tools and programming libraries.
- ▯ Learned to compromise with team members.
- ▯ Learned to use the tools in the EPL.
- ▯ Pushed myself to meet project goals.
- ▯ Established trust in my fellow team members.