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| **1. Introduction** |
| * Introduce team members. |
| * Briefly describe your project goals and purpose - Our project was to create an ignition timing delay box for older cars with variable reluctor ignition triggers. This is useful for automobiles that one wishes to install power adders on. It is essential to be able to control timing precisely in order to safely add power with the addition of systems such as turbochargers, superchargers, and nitrous oxide. |
| 2. Project Design |
| * Summary your overall design approach – We decided to use an ATmega328P microcontroller to accomplish this task. This is paired with a HEI 7 pin module produced by General Motors (part number – 1976908). * Requirements   + Apply an ignition delay with a minimum step value of 0.5 degrees for a maximum operating speed of 6000 revolutions per minute.   + Use an ATMEGA328P microcontroller   + Involve the design and implementation of a printed circuit board.   + Be able to function in an automobile using automobile power supply. |
| * Show your approach and the technologies used for each of the major pieces of your project. * Show the software architecture of your project. |
| 3. Results |
| * The device meets all of our specifications. Everything related to the core function of the device works as expected. * Some issues that we had were: * The op amp portions of the PCB are incorrectly wired. * There was a trace that had no destination on the PCB. * Show Device in action * Show video. |
| 4. Summarize |
| * Some things that we would have done differently are: * Specified larger package size for resistors * Organized silk screen to be more assembler friendly on PCB * Some things that we would have liked to have done, but ran out of time to do, are: * Added rewrite capabilities for the microcontroller on the PCB * Added reset switch to PCB * Describe the project design experience. Was it what you expected? |
| 5. Questions from the Audience |