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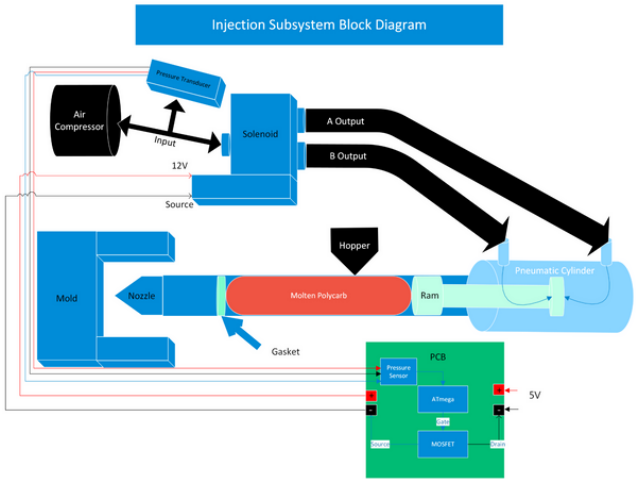
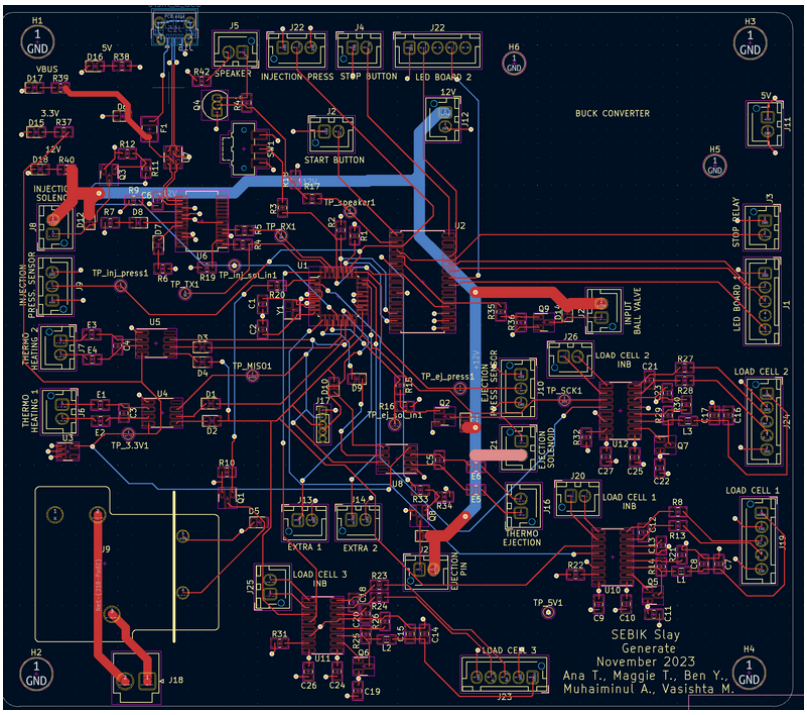
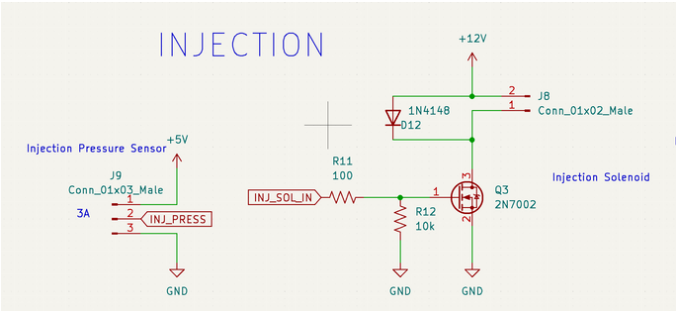
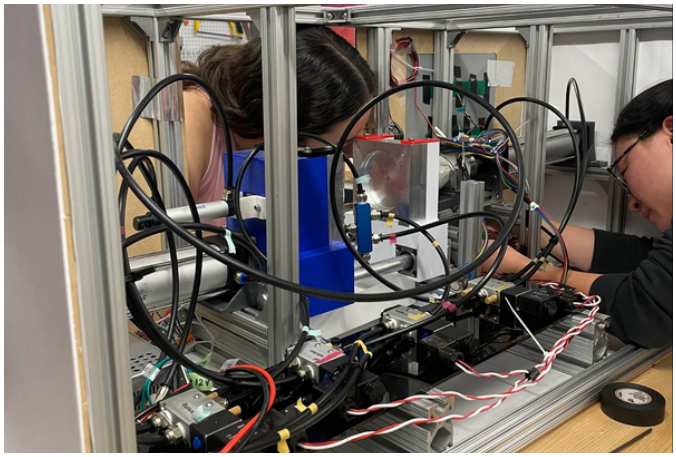
AUTOMATED TABLE TOP INJECTION MOLDER (SEBIK)









What?

- Developed an automated table top injection molder seeking to provide a solution to medical supply shortages by rapidly producing common medical products on demand

How?

- Designed a custom PCB using **KiCAD** to receive sensor readings and control solenoids with an **ATmega328PB microcontroller**
- **Soldered** components and wired peripherals on PCB
- Developed robust error handling mechanisms using **C++** and **Git**
- Analyzed potential failure modes within the injection ram subsystem using a **DFMEA**

Results

- The design fulfilled its purpose by allowing 10.45 grams of molten polypropylene to be injected every 4 minutes via pneumatic cylinders