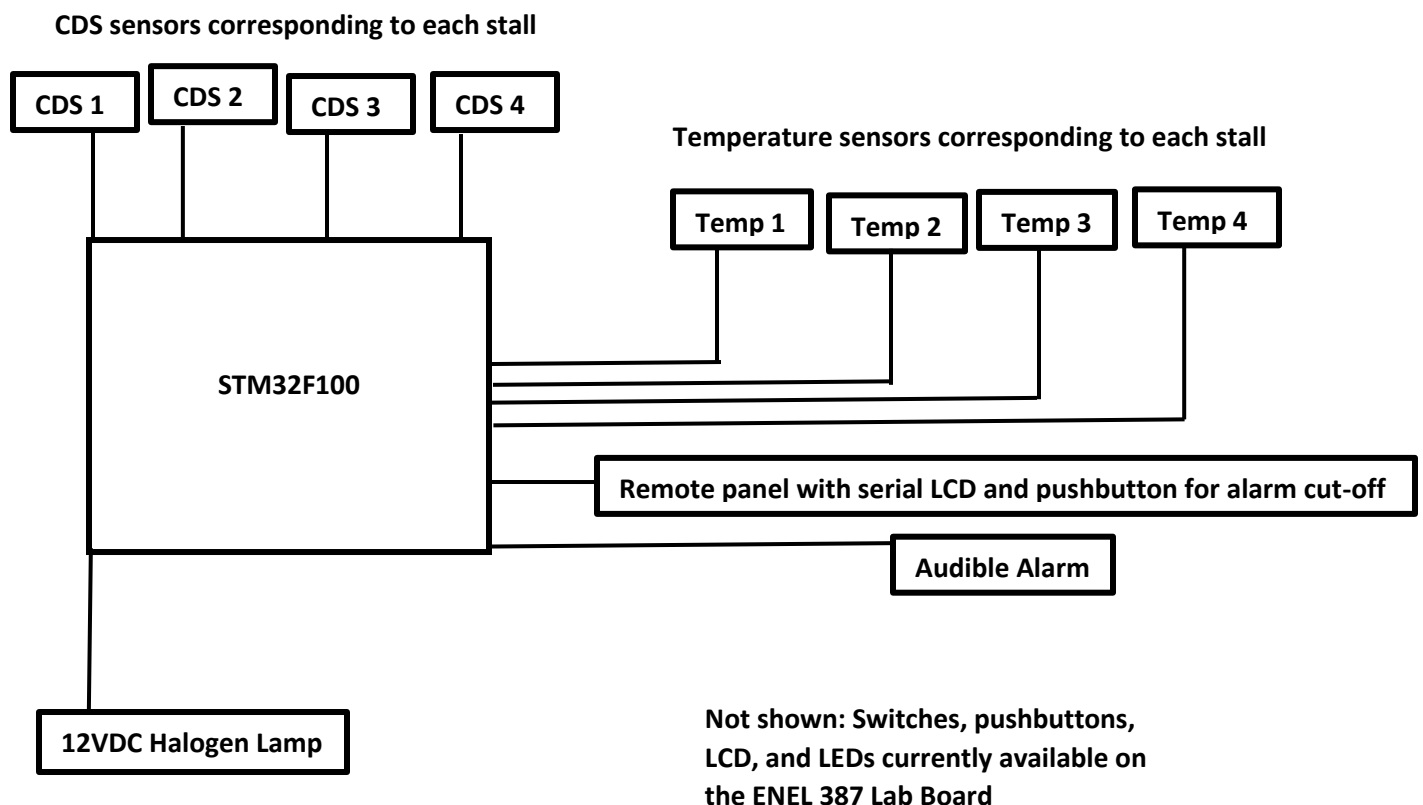


For my ENEL 387 project, I intend to build a barn alarm system that is controlled by the STM32F100 microcontroller given in the lab. The alarm system I am aiming to build is no ordinary alarm system. The purpose of the alarm system is to inform someone, most likely the owner, if the livestock heat lamps burn out, or break. Most farmers have back-up generators during a power outage, so this is mainly in case the bulb no longer works. This is an important issue when farming because when certain animals, such as pigs or chickens, do not have heat and/or light, they will most likely end up dying unless the owner is lucky enough to check on them in time. My design is to take cadmium sulfoselenide(CDS) photo-conductive devices that are designed to sense light, and have them activate a 12VDC halogen lamp which would require a relay to be activated due to its operating current, as well as activate a small alarm if the light were to ever go out. I would also have a remote panel with serial LCD and pushbutton for alarm cut-off. The LCD will display which stall the corresponding light is burnt out in, potentially the temperature value as well. In my design, I also plan to have a temperature sensor for each stall. This is so that if the farmer were to be away, they would be able to see the temperature and approximate how long the livestock may have before replacing the bulb. I have not decided how many different stalls to show on my device but was planning between the ranges of two to four. The system will most likely operate between 3.3 volts to 5 volts. A simple block diagram is shown below as *Figure 1* of what my design should look like.



**Figure 1: Simplified Block Diagram for barn alarm system**