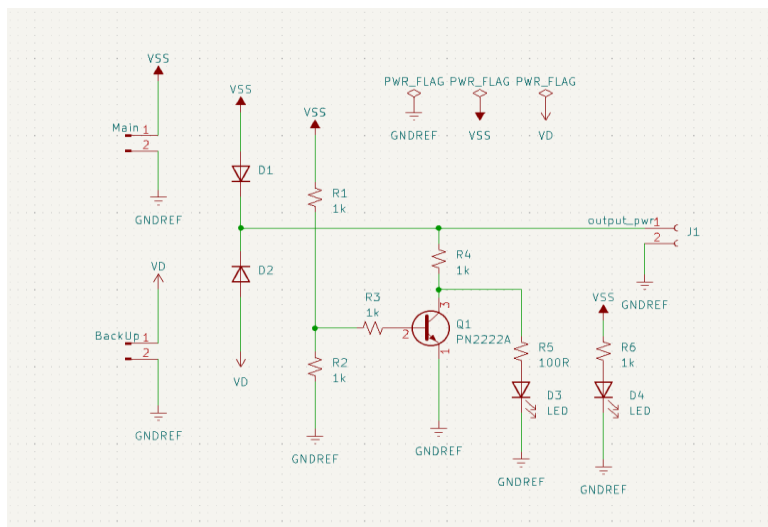


Water Level Detection and Warning System

Project Aim: Design and Implementation of Water Tank Monitoring and Warning System. The aim of this project is to design and build a water tank monitoring and warning system that provides real-time information about the water level in the tank and generates appropriate alerts based on the tank's status. The system will consist of two circuits: Circuit 1 - Digital Circuit for water level monitoring, and Circuit 2 - Warning Circuit for generating visual and audible warnings.

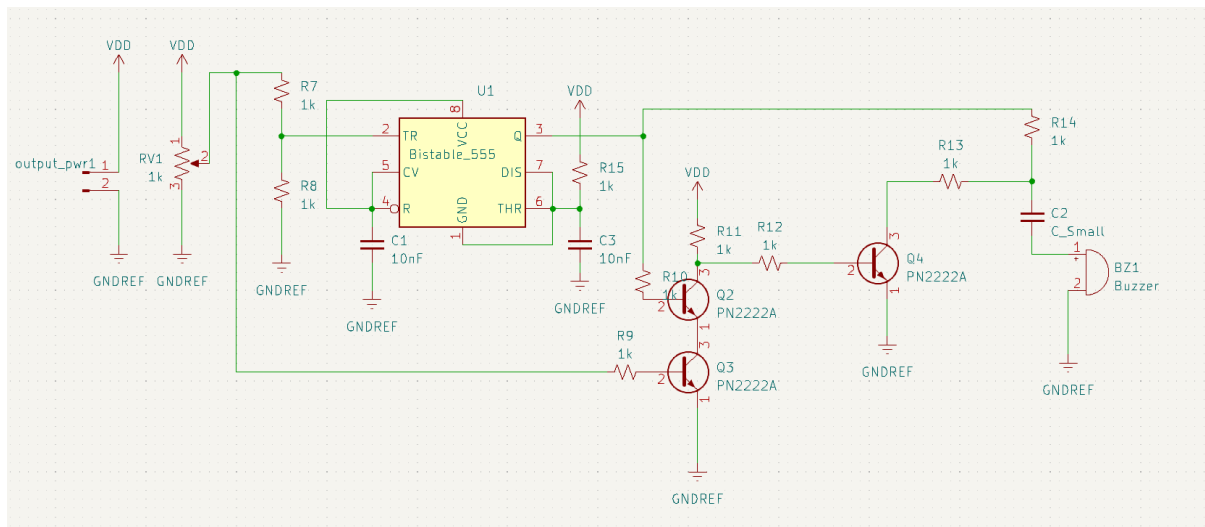
Method:

To combat the effects of loadshedding, a backup power supply was implemented in the circuit. When the main power is cut, the green LED will switch off and a red LED will switch on signifying a power cut. The following circuit was developed to achieve these effects:



In this project, a potentiometer was used to emulate the increasing resistance as the water level decreases in the tank.

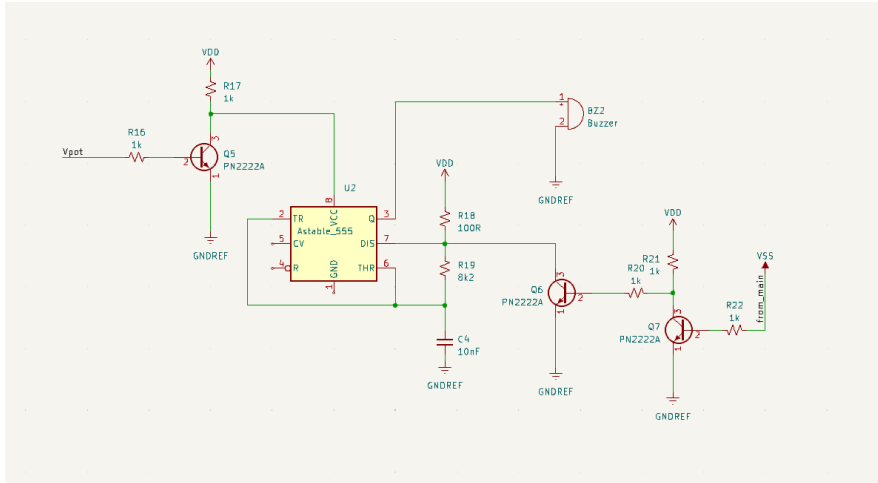
The following circuit was used to achieve the warnings when the tank is half:



Functionality:

1. When the tank is half full and there's no loadshedding, the GREEN LED will be illuminated and the buzzer will beep once, indicating a "MED" output.
2. When the tank is half full and there's loadshedding, the RED LED will be illuminated and the buzzer will beep once, indicating a "MED" output.

The following circuit was used to achieve the warnings when the tank is empty:



Functionality:

1. When the tank is empty and there's no loadshedding, the GREEN LED will be illuminated and the buzzer will beep in an oscillating manner, indicating a "LOW" output.
2. When the tank is empty and there's loadshedding, the RED LED will be illuminated and the buzzer will beep continuously (one long beep), indicating a "LOW" output.

The complete project of the water tank monitoring and warning system will provide valuable information about the water levels in the tank and generate appropriate alerts, ensuring efficient water management and preventing potential issues such as overflow or water shortage.

The complete, cascaded circuit:

