Hardware

These devices will be mounted on a pre-assembled circuit board.
Microcontroller - ESP32-C3
1 - Magnetically actuated reed switch (INPUT A)
1 - SPST Pushbutton Switch (INPUT B)
1 - RED LED (OUTPUT Y)
1 - Piezo Buzzer (OUTPUT X)
1 - 9V rectangular battery (INPUT C)

Program Requirements

The device is required to send an SMS text message via email (using WiFi) upon detecting a contact closure on one of the ESP32 inputs. The WiFi must use Dynamic SSID and Password for connection so the user can enter their router's SSID and choose their own password.

INITIAL SETUP - When first powered on, the device will display a web page in WiFi Access Mode to allow entry of the WiFi credentials, store the credentials in EEPROM then switch to WiFi Station Mode. The web page must have fields to allow entry of the user WiFi SSID, WiFi Password and recipient email and phone number. The web page must also include a dropdown list of cell carriers with their gateway domains as described here:
https://20somethingfinance.com/how-to-send-text-messages-sms-via-email-for-free/
The gateway domain must be appended to the phone number.
The email account will be a gmail account that is determined by you to test the code. I will subsequently modify this email address in the code myself.
Any subsequent reboot of the device will connect to WiFi using the stored credentials unless the credentials are changed by entering setup mode.

NORMAL MODE - The RED LED (OUTPUT Y) will pulse ON for a duration of 50 mS once every 30 seconds. An email will be sent once every 7 days indicating the device is functioning normally and indicating the battery voltage. To maximize battery life theESP32 must operate in low power sleep mode except when flashing the LED or sending email.

LOW BATTERY MODE - If the battery voltage, as measured at INPUT C, falls below 3 VDC the piezo buzzer (OUTPUT X) will pulse on for 100mS once every 30 seconds.

The battery voltage will be divided down to be within the operating range of the analog input (INPUT C).

ALARM MODE - If INPUT A is energized for longer than 3 seconds the device will energize an output (OUTPUT X). OUTPUT X will remain energized until the pushbutton on INPUT B is pressed. Send Email.

TEST MODE - Pressing and holding the pushbutton on INPUT B for a period of more than 3 seconds will energize OUTPUT X until the pushbutton is released. Send email.

SETUP MODE - Pressing the pushbutton on INPUT B three times within a period of 3 seconds will cause the device to display the credentials web page allowing the WiFi Credentials and/or email recipient/phone number/cell carrier to be modified.