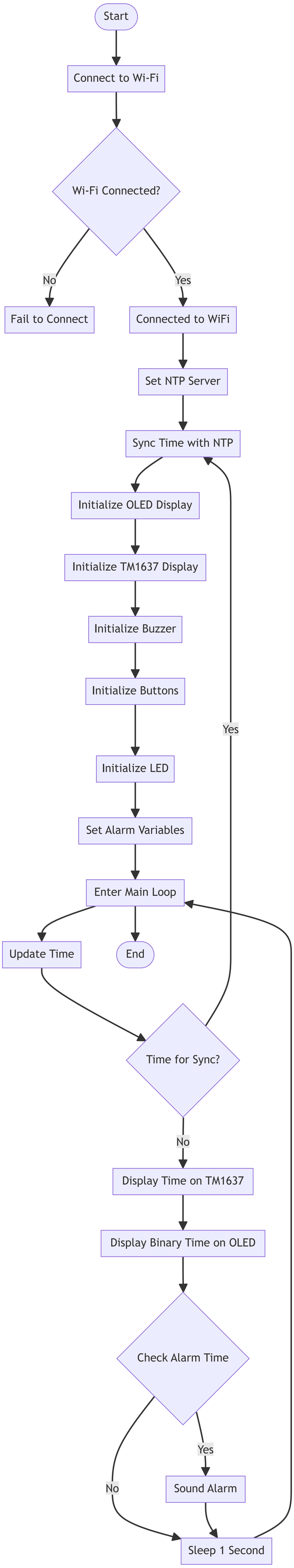
Start
Connect to Wi-Fi
Wi-Fi Connected?
No
Yes
Fail to Connect
Connected to WiFi
Set NTP Server
Sync Time with NTP
Initialize OLED Display
Initialize TM1637 Display
Initialize Buzzer
Initialize Buttons
Initialize LED
Set Alarm Variables
Enter Main Loop
Update Time
End
Time for Sync?
Yes
No
Display Time on TM1637
Display Binary Time on OLED
Check Alarm Time
Yes
No
Sound Alarm
Sleep 1 Second

Wi-Fi Connected Alarm Clock Flowchart Description

1. Start: The process begins.

2. Connect to Wi-Fi: The system attempts to establish a Wi-Fi connection using the provided credentials.

3. Wi-Fi Connected?: Checks whether the Wi-Fi connection was successful.
   - No: If the connection fails, the process stops.
   - Yes: If the connection is successful, the process continues.

4. Connected to Wi-Fi: Confirms that the Wi-Fi connection has been established.

5. Set NTP Server: Sets 'time.google.com' as the NTP server for time synchronization.

6. Sync Time with NTP: Synchronizes the current time with the NTP server.

7. Initialize OLED Display: Initializes the OLED display to show information.

8. Initialize TM1637 Display: Initializes the TM1637 display to show the time.

9. Initialize Buzzer: Sets up the buzzer on GPIO 25.

10. Initialize Buttons: Configures buttons for resetting the alarm, adding hours, and adding minutes.

11. Initialize LED: Sets up an LED on GPIO 3.

12. Set Alarm Variables: Sets the initial variables for the alarm.

13. Enter Main Loop: Starts the main loop of the program.

14. Update Time: Retrieves the current time.

15. Time for Sync?: Checks if it's time to synchronize the time with the NTP server again.
    - No: If it's not time to sync, the process continues to the next step.
    - Yes: If it's time to sync, the process goes back to "Sync Time with NTP".

16. Display Time on TM1637: Displays the current time on the TM1637 display.

17. Display Binary Time on OLED: Displays the current time in binary format on the OLED display.

18. Check Alarm Time?: Checks if the current time matches the alarm time.
    - No: If it's not the alarm time, the process continues.
    - Yes: If it is the alarm time, the buzzer is activated.

19. Sound Alarm: Activates the buzzer for 10 seconds.

20. Sleep 1 Second: The system waits for one second before continuing with the next iteration of the loop.

21. End: The process ends when it exits the main loop.

This flowchart describes the operation of a system that connects to a Wi-Fi network, synchronizes time with an NTP server, displays time in different formats on OLED and TM1637 displays, and triggers an alarm at a preset time. Additionally, it manages interaction with buttons to modify alarm settings and uses an LED and a buzzer for signaling.