Control Diagram Explanation
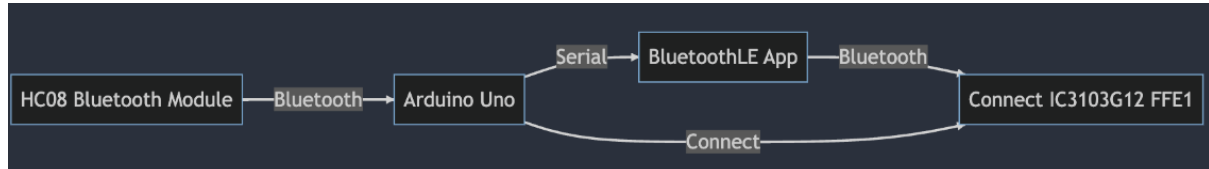
```
+------------------+      +------------------+      +------------------+      +----------------+
| HC08 Bluetooth   |      |   Arduino Uno    |      |  BluetoothLE App |      | Connect IC3103G12|
|    Module        | <----> |                  | <----> |                  | <----> |     (FFE1)      |
+------------------+      +------------------+      +------------------+      +----------------+
```


Figure 1 & 2: Bluetooth module

In this picture, the HC08 Bluetooth module is connected to the Arduino Uno via Bluetooth. the BluetoothLE application is also connected to the Arduino Uno via Bluetooth. the Arduino Uno acts as a bridge between the Bluetooth module and the Connect IC3103G12 (which has the FFE1 feature). the FFE1 feature is used to transfer data between the Bluetooth module and the Connect IC3103G12 to transfer data between the Bluetooth module and the Connect IC3103G12.
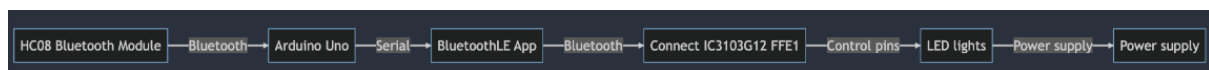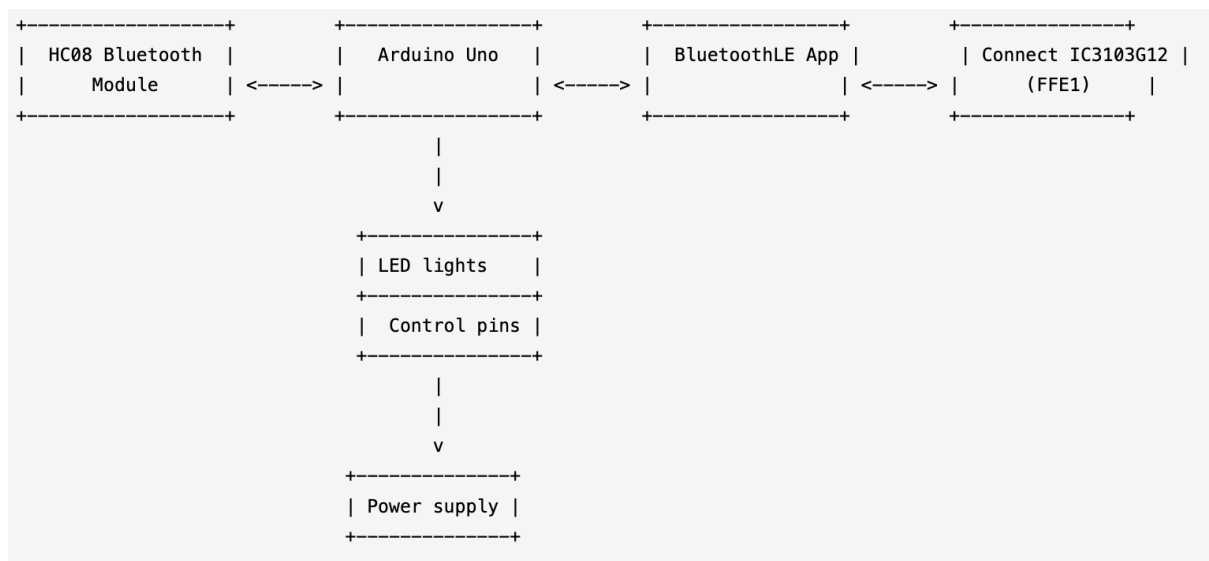
```
+------------------+      +------------------+      +------------------+      +----------------+
| HC08 Bluetooth   |      |   Arduino Uno    |      |  BluetoothLE App |      | Connect IC3103G12|
|    Module        | <----> |                  | <----> |                  | <----> |     (FFE1)     |
+------------------+      +------------------+      +------------------+      +----------------+
                                   |
                                   |
                                   v
                          +----------------+
                          | LED lights     |
                          +----------------+
                          |  Control pins  |
                          +----------------+
                                   |
                                   |
                                   v
                          +---------------+
                          | Power supply  |
                          +---------------+
```


Figure 3 &4 : Bluetooth LED Lights

In this diagram, the HC08 Bluetooth module is connected to the Arduino Uno via Bluetooth. The **BluetoothLE** app is also connected to the Arduino Uno through Bluetooth. The Arduino Uno receives input from the Bluetooth modules and uses the **FFE1** characteristic to transmit data to the Connect IC3103G12. The Connect IC3103G12 then sends signals to the LED lights to turn them on or off and to change their color based on the input received from the Bluetooth modules. The LED lights are powered by a power supply, and their control pins are connected to the Connect IC3103G12.

The input received from the Bluetooth modules controls the LED lights as follows:

- Entering "A" or "a" moves the lights forward.
- Entering "B" or "b" moves the lights backward.
- Entering "L" or "l" turns the lights left.
- Entering "R" or "r" turns the lights right.
- Entering "S" or "s" makes the lights spin.
- Entering "N" or "n" stops the lights.
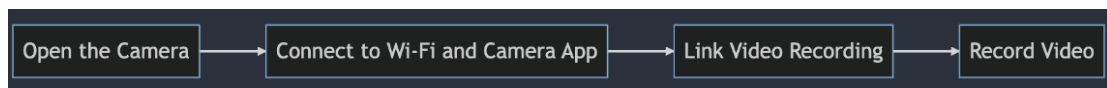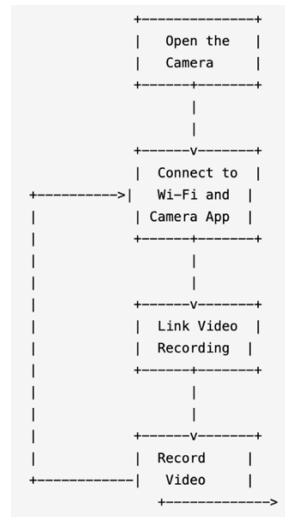- Entering "O" or "o" turns off the lights.

```
                    +--------------+
                    |   Open the   |
                    |   Camera     |
                    +------+-------+
                           |
                           |
                    +------v-------+
                    |  Connect to  |
       +---------->|   Wi-Fi and  |
       |            |  Camera App  |
       |            +------+-------+
       |                   |
       |                   |
       |            +------v-------+
       |            |  Link Video  |
       |            |  Recording   |
       |            +------+-------+
       |                   |
       |                   |
       |            +------v-------+
       |            |   Record     |
       +-----------|    Video     |
                    +--------------+------>
```

```
Open the Camera ---> Connect to Wi-Fi and Camera App ---> Link Video Recording ---> Record Video
```

Figure 5 & 6: Camera

1. Open the camera and ensure that it is connected to the same Wi-Fi network as the device that will be used to view the footage.
2. Link the video feed from the camera to the viewing device, which can be a computer, smartphone, or tablet.
3. Establish a connection between the camera and the viewing device using the appropriate software or app.
4. Once the connection is established, you can begin recording by pressing the appropriate button or icon on the viewing device's interface.
5. The camera will capture the video footage and send it to the viewing device in real-time or store it on the device's memory card.
6. To stop recording, press the appropriate button or icon on the viewing device's interface.
7. The camera will stop capturing video footage and the file will be saved on the viewing device's memory card or cloud storage if applicable.
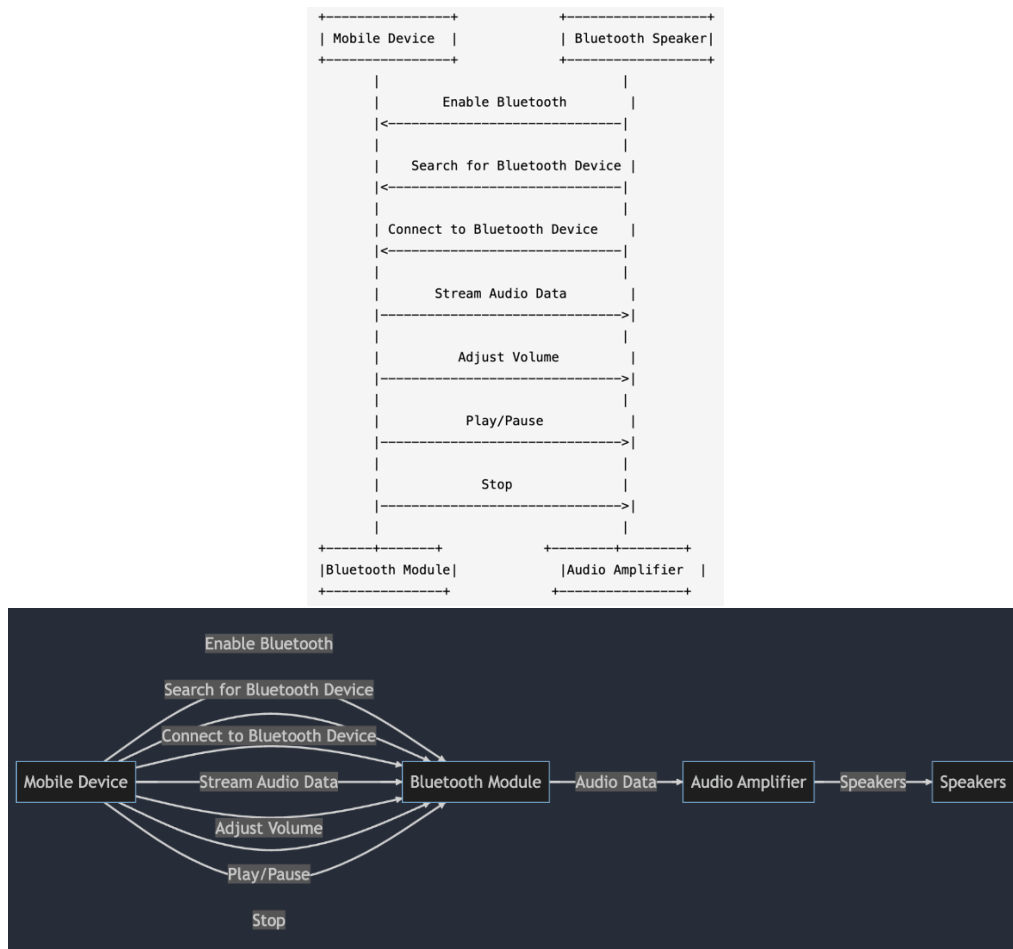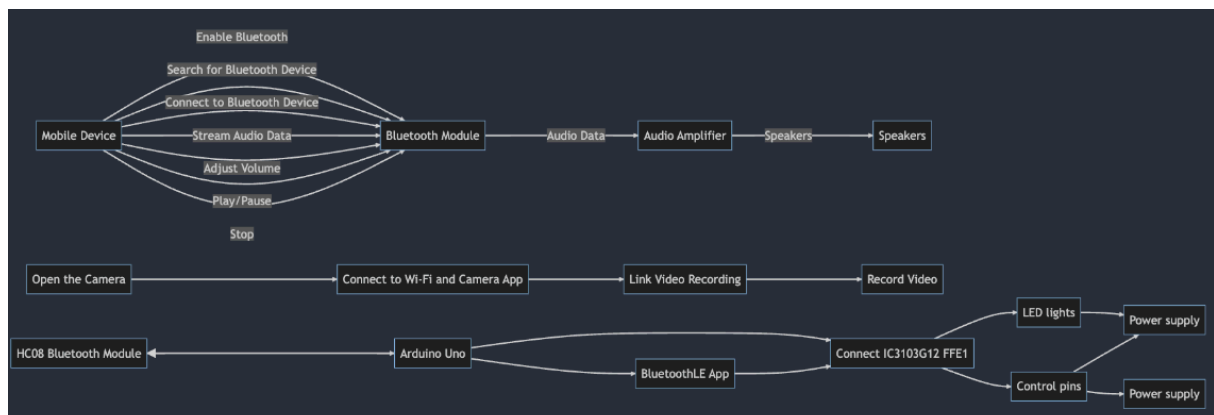
```
+----------------+        +------------------+
| Mobile Device  |        | Bluetooth Speaker|
+----------------+        +------------------+
        |                          |
        |      Enable Bluetooth    |
        |<-------------------------|
        |                          |
        |  Search for Bluetooth Device |
        |<-------------------------|
        |                          |
        | Connect to Bluetooth Device |
        |<-------------------------|
        |                          |
        |     Stream Audio Data    |
        |------------------------->|
        |                          |
        |      Adjust Volume       |
        |------------------------->|
        |                          |
        |       Play/Pause         |
        |------------------------->|
        |                          |
        |         Stop             |
        |------------------------->|
        |                          |
+-------+--------+        +--------+--------+
|Bluetooth Module|        |Audio Amplifier  |
+----------------+        +-----------------+
```


Figure 7 & 8: Music Player

1. The mobile device enables Bluetooth.
2. The mobile device searches for available Bluetooth devices.
3. The mobile device connects to the Bluetooth speaker.
4. The mobile device streams audio data to the Bluetooth module.
5. The audio data is amplified by the audio amplifier.
6. The user can adjust the volume, play/pause, or stop the audio playback.

Overview:

End of Control Diagram Explanation