Smart Home-based Bluetooth

AMIT's Graduation Project 2020

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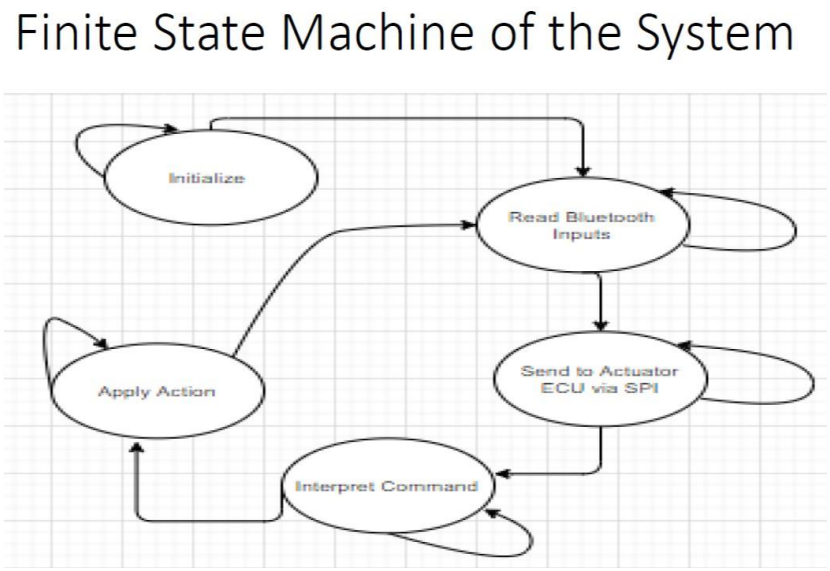
Project description:

Two ECU's Communicate with each other, the first is a "Control ECU" (Master) which takes the input from "Bluetooth transmitter/receiver" (Bluetooth app on a mobile) and send it to the "Second ECU" (Slave) via SPI to Interpret.

The Control ECU takes input from Bluetooth terminal app on a mobile as Ascii code of '1' to toggle LED 1 or '2' to toggle LED 2, the control ECU also sends back to the Bluetooth app a string indicating the status of the LED toggled at that time, Bluetooth communication was done using USART.

Moreover, I added an LCD showing the status of the LEDs depending on the chosen LED.



The following screenshots shows the Proteus schematic simulation running and on the right side will be the live screen review of my mobile phone using a Bluetooth app which communicates with the HC-05 Bluetooth module, I also added shortcut buttons labeled "LED 1" and "LED 2" for input '1' and '2' respectively.

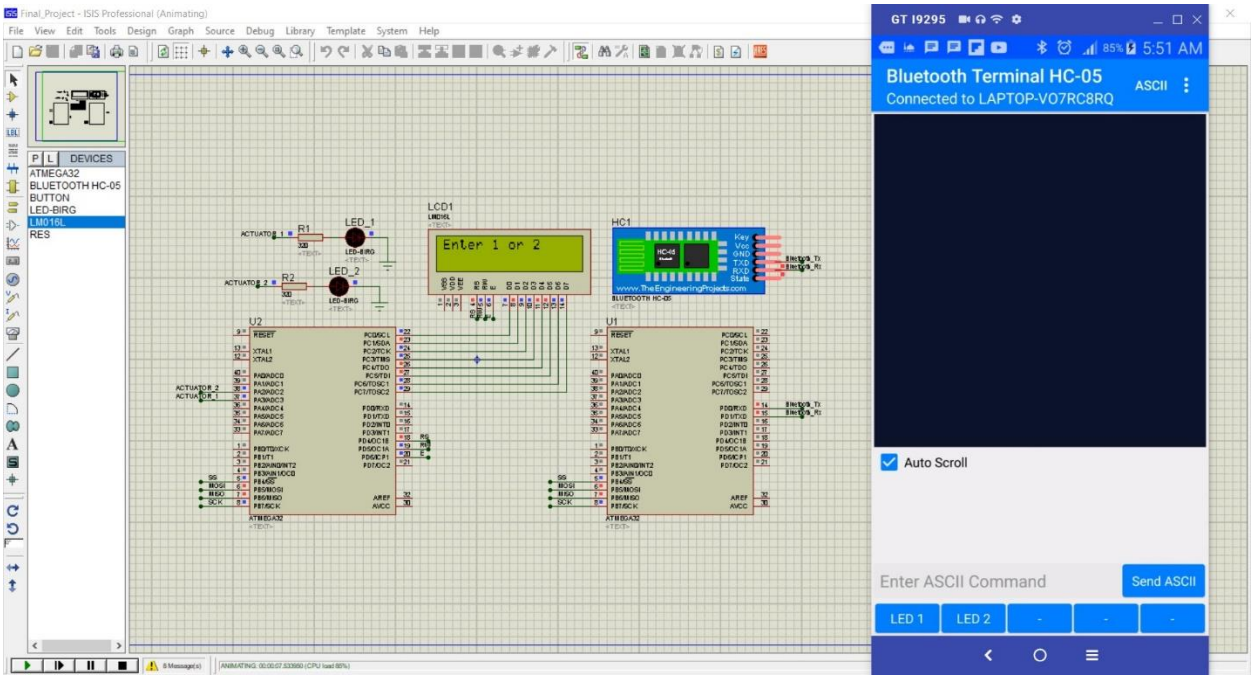


Figure 1: Startup

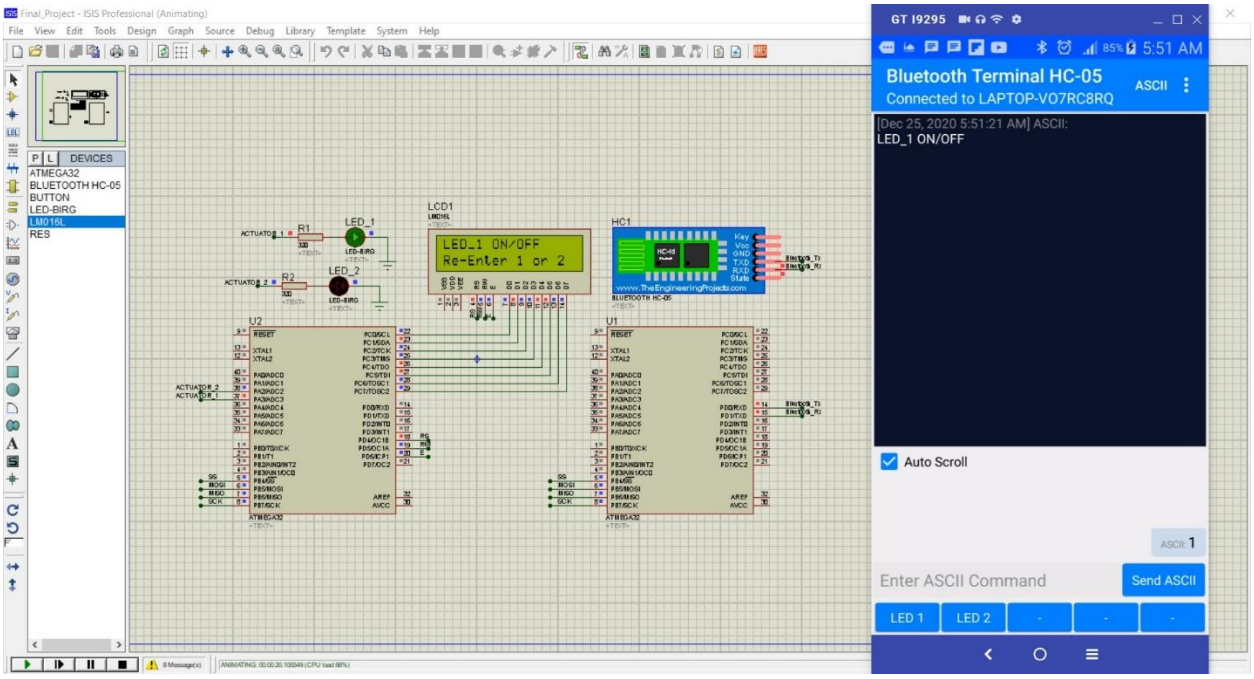


Figure 2: LED 1 toggled (ON)

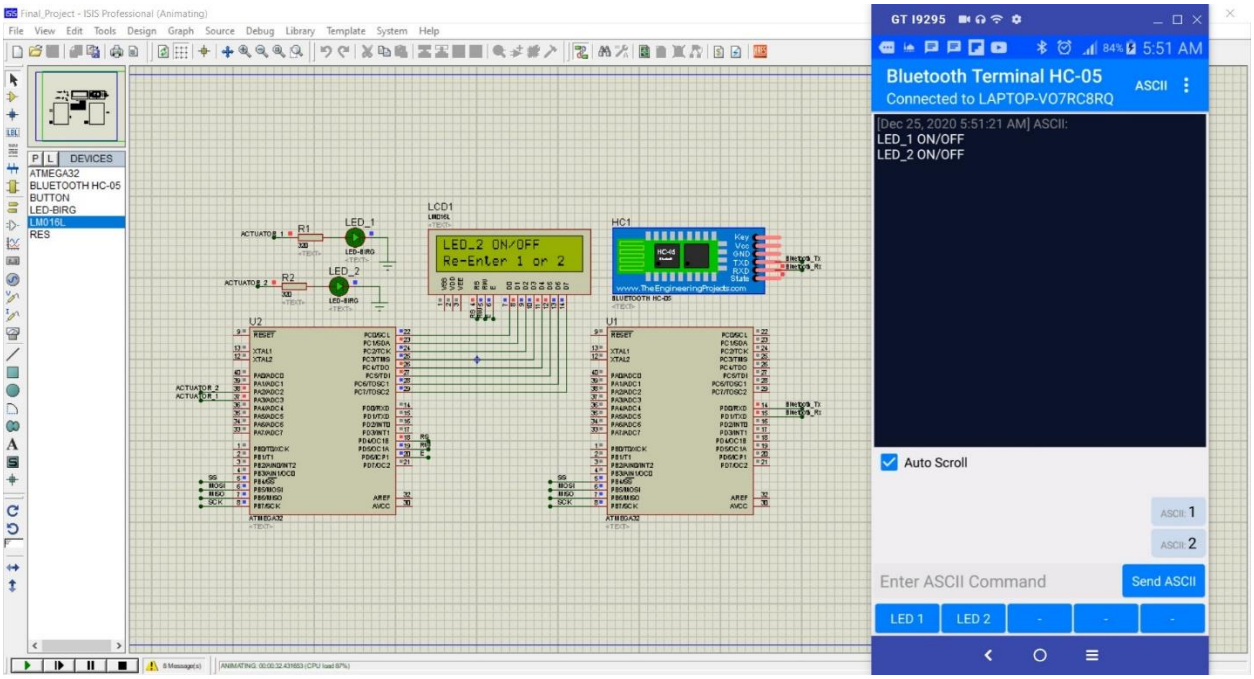


Figure 3: LED 2 toggled (ON)

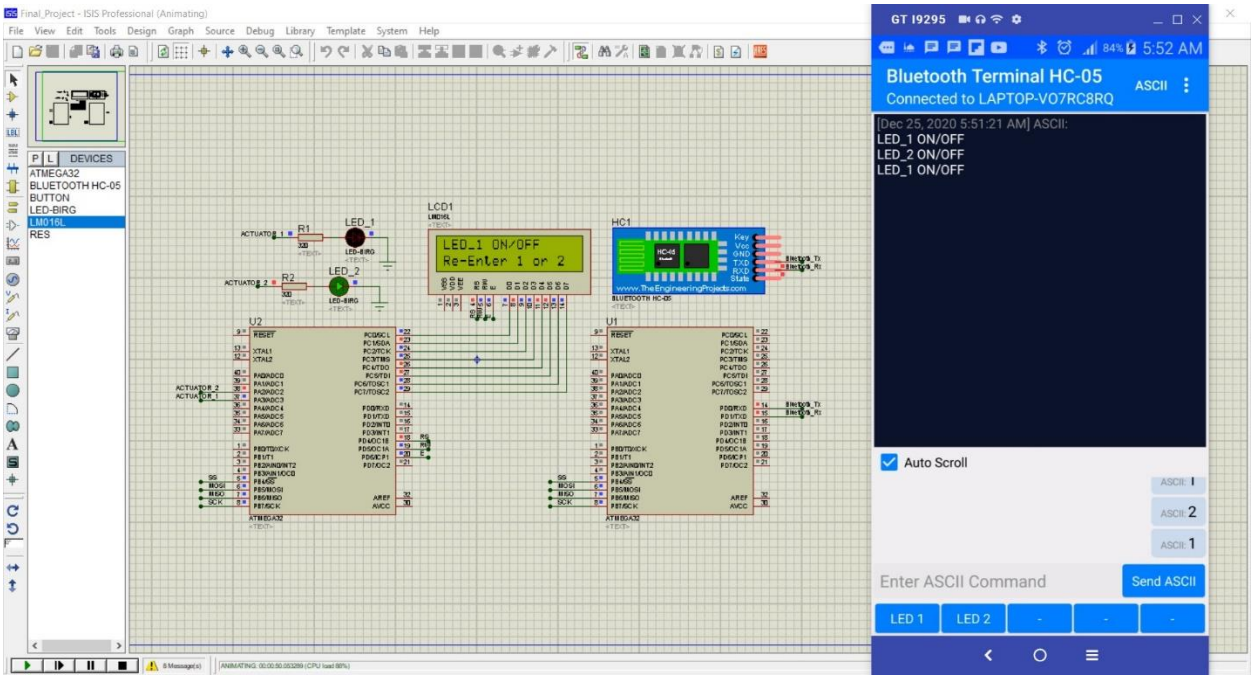


Figure 4: LED 1 toggled (OFF)

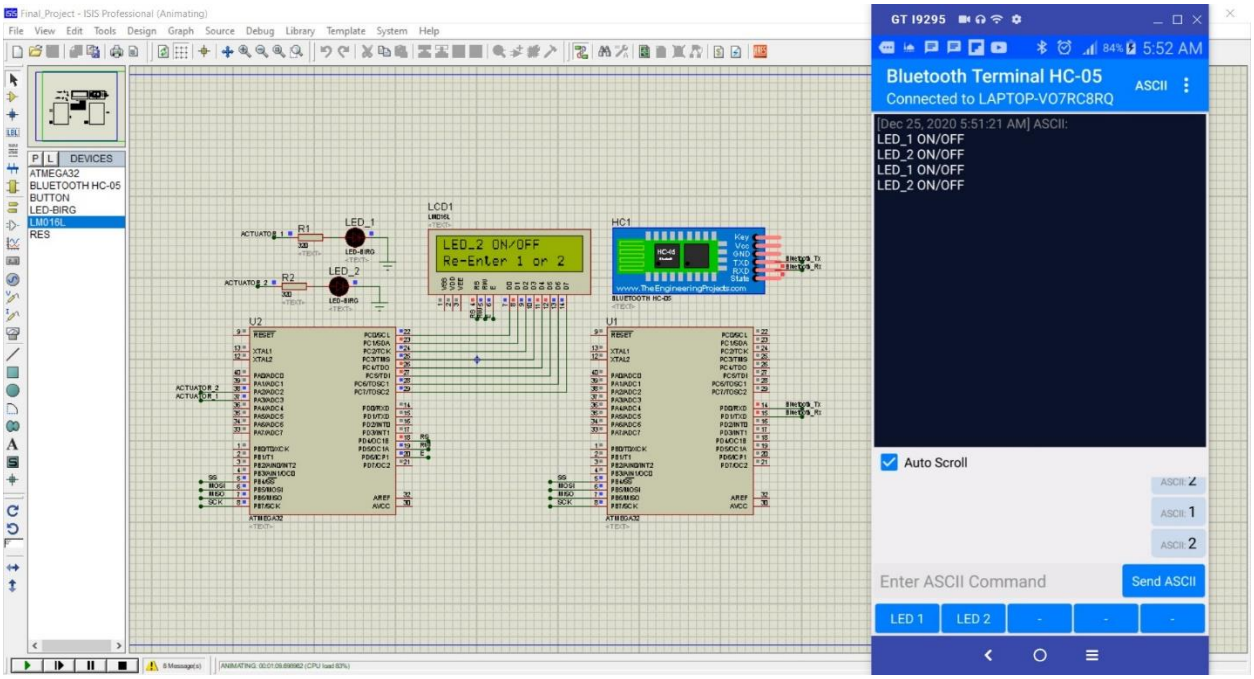


Figure 5: LED 2 toggled (OFF)

Conclusion:

The project was implemented and run successfully and addition of the LCD also worked as intended.

Files GitHub Link:

https://github.com/Seif-Nagy/Smart-Home-based-Bluetooth.git