Title: Familiarization with an STM32, the study of blink test and implementation of a light-controlling system using microcontrollers.

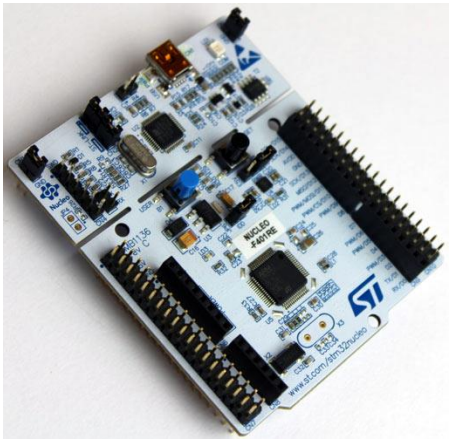
Introduction:

The objective of this experiment is to get familiarized with Microcontroller.
 Learning to make the LED blink using ST32.
 Implementation of a light control system using STM32.

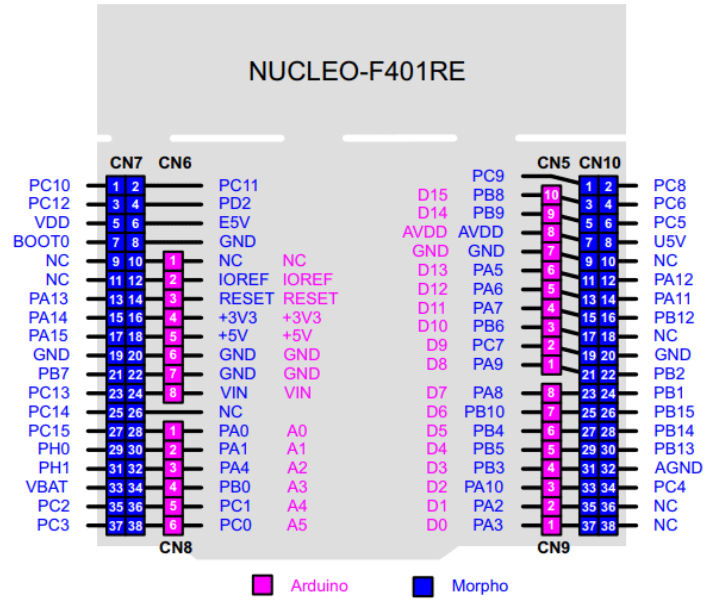
Equipment list:

1. STM32 Cube IDE (1.0.1 or any recent version)
2. STM32 Cube IDE board
3. LED lights (RED, GREEN, or YELLOW) and three 200 ohms resistors and jumper wires

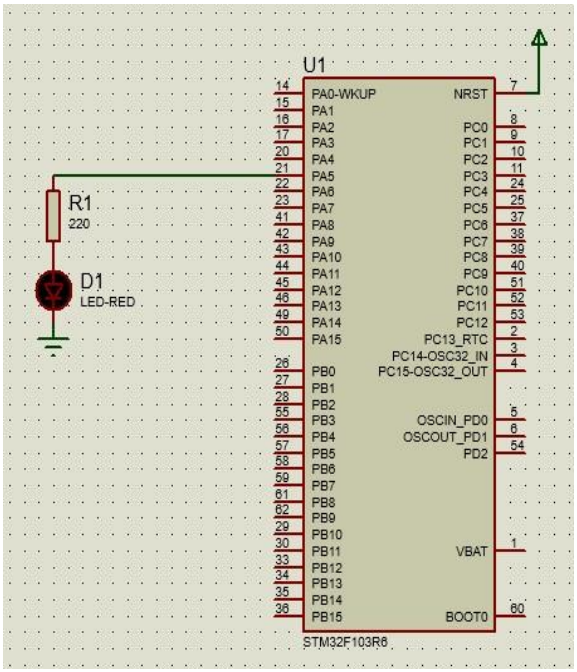
Overview of STM32 Nucleo-F401RE Board:

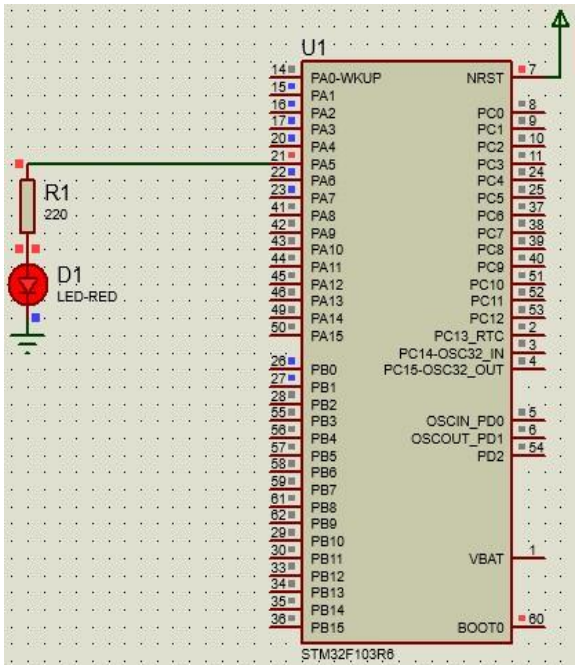


Pin Configuration:

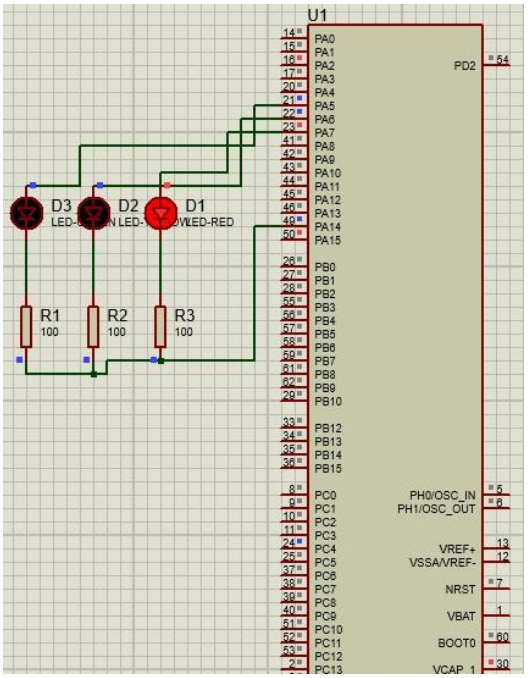


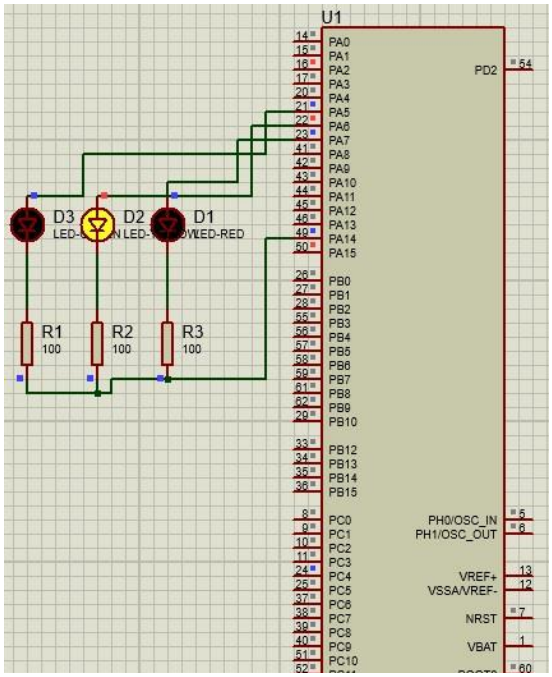
LED Blink

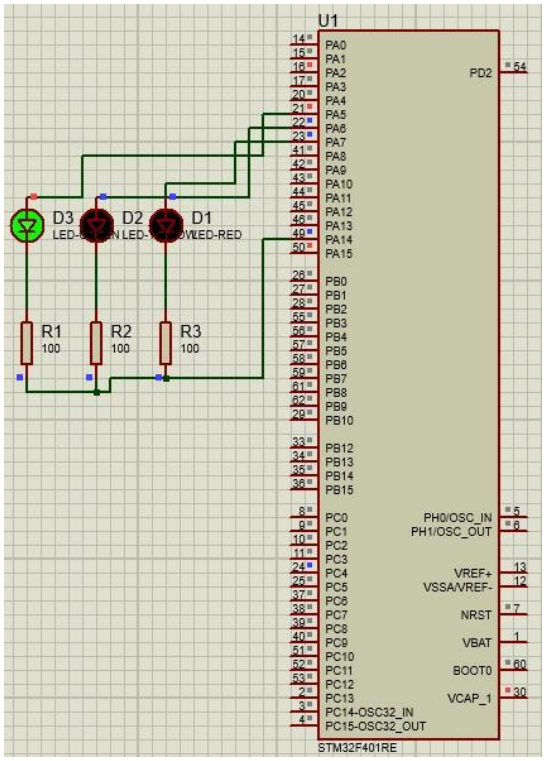




Traffic light







Discussion:

The experiment successfully achieved its objectives of familiarizing with the STM32 Microcontroller Board, conducting an LED blink test, and implementing a traffic light control system. This process was crucial in understanding the board's architecture, features, and components, enhancing knowledge about pin configurations, I/O functionalities, and communication interfaces. The LED blink test facilitated practical application of programming skills, enabling control of LED states and frequency. The most significant accomplishment was the traffic light system implementation, simulating signal timing and sequencing effectively. Overall, this experiment provided valuable hands-on experience and achieved all its intended goals.