Introduction to Arduino

CSE 107

Homework 2: Introduction to Arduino

Department of Computer Science and Engineering

Gebze Technical University

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Homework 2

Question 1

Design and implement a simple traffic light system using an Arduino Uno. The traffic light should follow this sequence:

- The Red LED stays on for 3 seconds.
- The Yellow LED stays on for 2 seconds.
- The Green LED stays on for 3 seconds.

The cycle repeats continuously. The students are responsible for designing the circuit using the components listed below and writing the necessary code to make the traffic light work as specified.

Homework 2

Materials:

- 1 x Arduino Uno
- 1 x Breadboard
- 1 x Red LED
- 1 x Yellow LED
- 1 x Green LED
- 3 x appropriate resistors for the LEDs
- Jumper wires

Homework 2

- Save your Arduino code with the filename "HW2_StudentId.ino" in your USB.
- Bring your breadboard circuit design to the lab for demonstration.
- Before starting the quiz, you must demonstrate your homework to the lab assistant.
- Be prepared to explain your code if asked by the assistant.

Homework 2

Evaluation Criteria:

- Circuit design and correct use of components: 30%
- Correct functionality of the traffic light simulation: 40%
- Code clarity and structure: 20%
- Explanation: 10%

Homework 2

Quiz Preperation

In preparation for the quiz, learn how to use a button with Arduino Uno. This knowledge will be crucial for modifying your traffic light system.
Exercise: Modify your traffic light code to add a pedestrian crossing feature where the Red LED stays on for an extra 3 seconds when a button is pressed, simulating a pedestrian crossing signal.

The End