

Plant to Emoticon Translator

Problem description

Plant to Emoticon Translator is an embedded system that periodically monitors the state of a houseplant by reading sensor values from two different sensors: a **soil humidity** sensor and a **temperature** sensor. The system consists of an **Arduino Uno** development board, a **soil moisture sensor**, a **temperature sensor**, a **16x2 LCD display**, a **breadboard**, and **connectors**.

The system's goal is to inform its user about the houseplant's state by using the sensor data to compute the overall state of the plant. Based on predefined thresholds for soil humidity and room temperature, the overall state can be either of the following: **HAPPY**, **OK** and **SAD**. The data from each sensor is mapped to a **BAD/OK/EXCELLENT** state (see fig. 1), and the overall state is computed as being the worse of the sensor states (i.e., if the temperature is excellent but the moisture is bad, the plant is sad). The overall state, the temperature and soil moisture values are all displayed on the LCD.

Humidity states and thresholds

BAD		OK	EXCELLENT	OK	BAD
0%		40%	65%	85% 90%	100%

Temperature states and thresholds

BAD	OK	EXCELLENT	OK	BAD
	12°	18°	28°	35°