Project Sensors and User Inputs

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List the types of sensors and user inputs you may require (light, sound, temperature, magnetic

field).

Sensors: Distance proximity

User Input: Keypad

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For each sensor and user input, list how you will connect it to the MCU, including additional

interface components, if needed.

Distance proximity sensor: Using Ultrasonic Distance Sensor

To connect the Sensor with the MCU, we use wires to connect the I/O of the MCU to the sensor

Similarly, we will be using one of the 7 I/O for the keypad.

Project Actuators and Indicators

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List the types of actuators and indicators you may require (e.g. light, sound, mechanical motion)

Actuators : LED, SPEAKERS

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For each actuator and indicator, list how you will connect it to the MCU, including additional

interface components, if needed.

LED + Speakers – We will be using one of the 7 I/O for the LEDs and the Speakers.

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List the resources inside the MCU that could be used to implement your project (e.g. ADC,

timers, interrupts, GPIO functions).

GPIO functions, interrupts, timers, ADC, DAC

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List parameters that the software running on the MCU might require.

Project Testing Methodology

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For each sensor, user input, actuator, indicator, and MCU peripheral listed above, state how you

will verify that each one is functioning as expected (a table may be helpful)

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State how you will validate that each Project Design Requirement has been m