Three Arduino boards (1 Master and 2 Slave) are communicating using the I2C protocol. The Master node is collecting Temperature data from the environment using a digital sensor and sends it to Slave 1. The master node is also collecting information to measures the distance of a target object an ultrasonic sensor and sends it to Slave 2. An RGB LED is connected with Slave 2. After receiving this information Slave 2 node changes the brightness of the RGB LED from red to blue and blue to red dynamically. For example: If the distance of a target object of the Master node increases, then RGB LED of the Slave 2 changes dynamically from blue to red, and if the distance of a target object of the Master node decreases, then RGB LED of the Slave 2 changes dynamically from red to blue.

Additionally, with the Slave 1 node, 3 push-buttons, and an RF module is connected. When push button P1 is pressed then Slave 1 sends this information ("P1 push button is pressed") to Receiver A (Arduino board) using RF module. Similarly, when push-button P2 and P3 are pressed then Slave 1 sends this information to the Receiver B (Arduino board) ("P2 push button is pressed") and Receiver C (Arduino board) ("P3 push button is pressed") using the RF module.

Task1: Show the simulation of this system using Proteus. Write the appropriate code. Add comment to the code to improve readability.

Example Code with comment

```
// pin 13 has an LED connected with the Arduino board.

int led = 13;

digitalWrite(led, HIGH);  // turn the LED on (HIGH is the voltage level)
```

Task2: Give suggestions to improve this system further. (e.g., adding more hardware could capability. Which hardware could be added and how it will improve the system?) Write it down in the "suggesstions.txt" file.