Grandma room Block diagram

To achieve the project goals, we proposed the general block diagram shown in figure 1, the main controller that will monitor all the inputs and outputs is the Arduino board, it will sense the human weight using four load cell that will be installed under the user bed for example installing a load cell on each leg of the bed, the load cells will measure the bed weight including the weight of user, and will detect the user existence depending on the weight.

To connect the load cells to the Arduino a special amplifier is required because the output voltage of the load cells is very low.

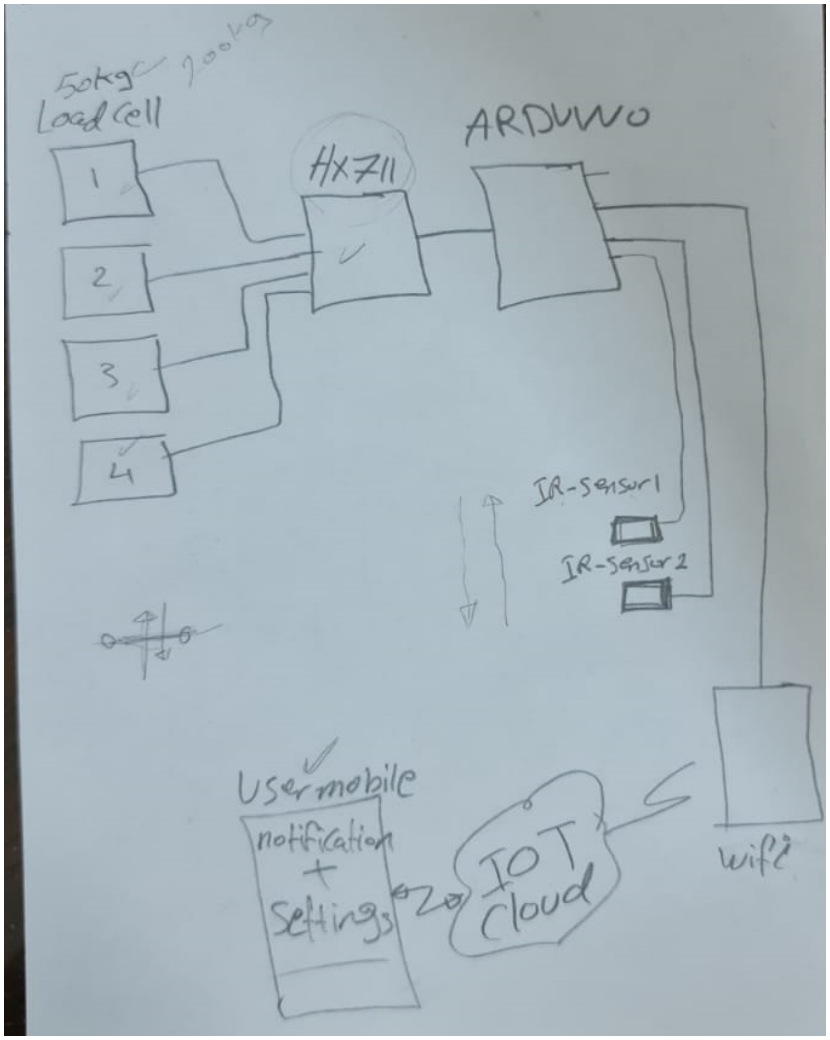

Figure 1 system block diagram

Also, there are two IR obstacle sensors installed at the room entrance, we will use two sensors to detect the person movement direction, if sensor1 triggered first then sensor two this means the person is entering the room and if sensor two then sensor one, this means that the person is leaving the room.

Finally, the Arduino will upload the data and the notification to an IOT cloud using a Wi-Fi connected to the Arduino, then the supervisor can open a dedicated mobile application to connect his mobile to the cloud to monitor all sensors and get all notifications, by using the IOT technology the mobile application can receive the data from anywhere as long as the mobile has internet connection.