

3. User Interface Architectural Design

The UI designed is simple, straight forward, and minimal to assure clarity of status and workers safety

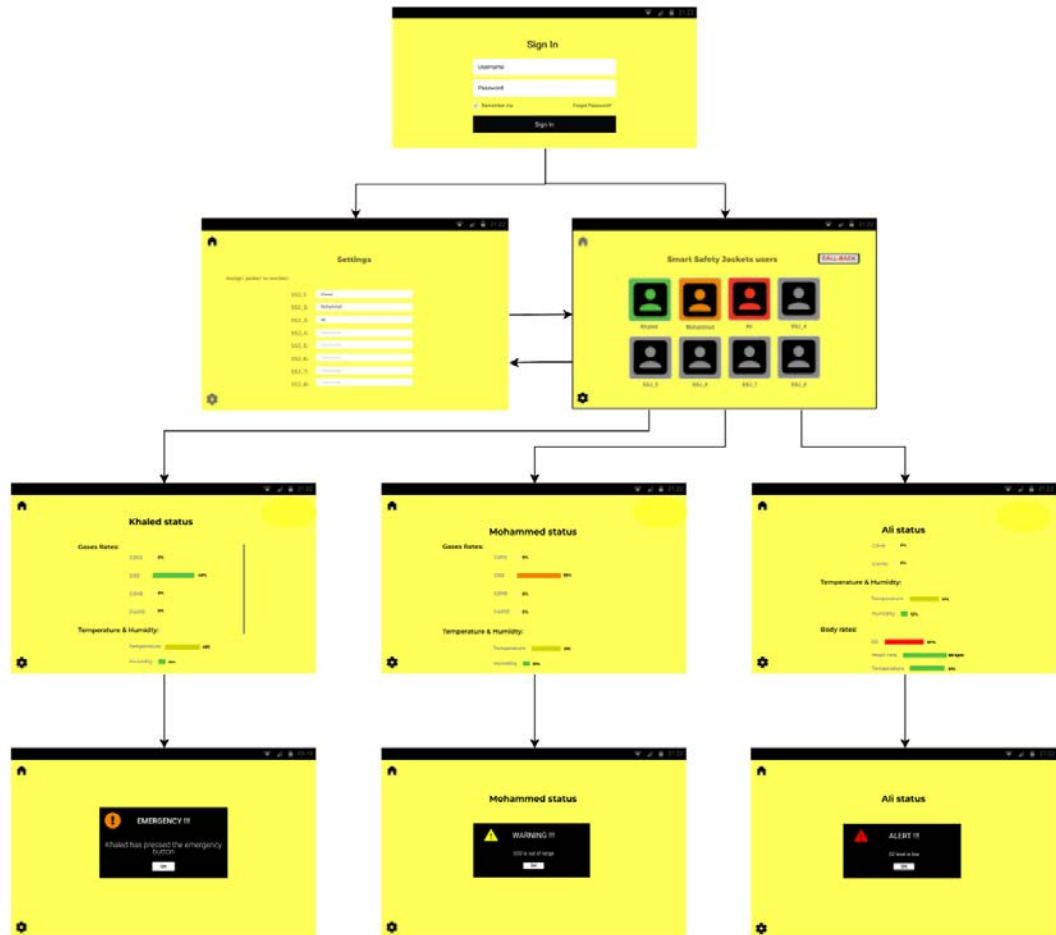
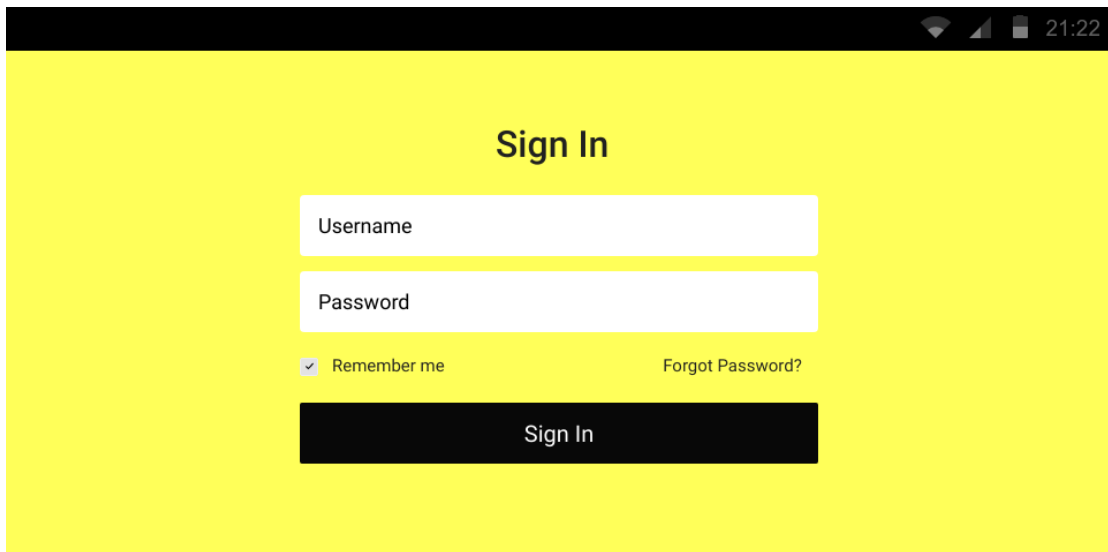


Figure 8: application diagram

Appendix B: User Interface



The image shows a mobile application interface for a sign-in page. At the top, there is a black status bar with white icons for Wi-Fi, cellular signal, and battery, along with the time 21:22. The main background is a solid yellow color. In the center, the text "Sign In" is displayed in a bold, black font. Below this, there are two white input fields with black borders. The first field is labeled "Username" and the second is labeled "Password". Below the password field, there is a checkbox with a checkmark and the text "Remember me", followed by a link that says "Forgot Password?". At the bottom, there is a black rectangular button with the text "Sign In" in white.

Figure 16: Sign in page

Figure 17: Home page has workers profiles and settings icons

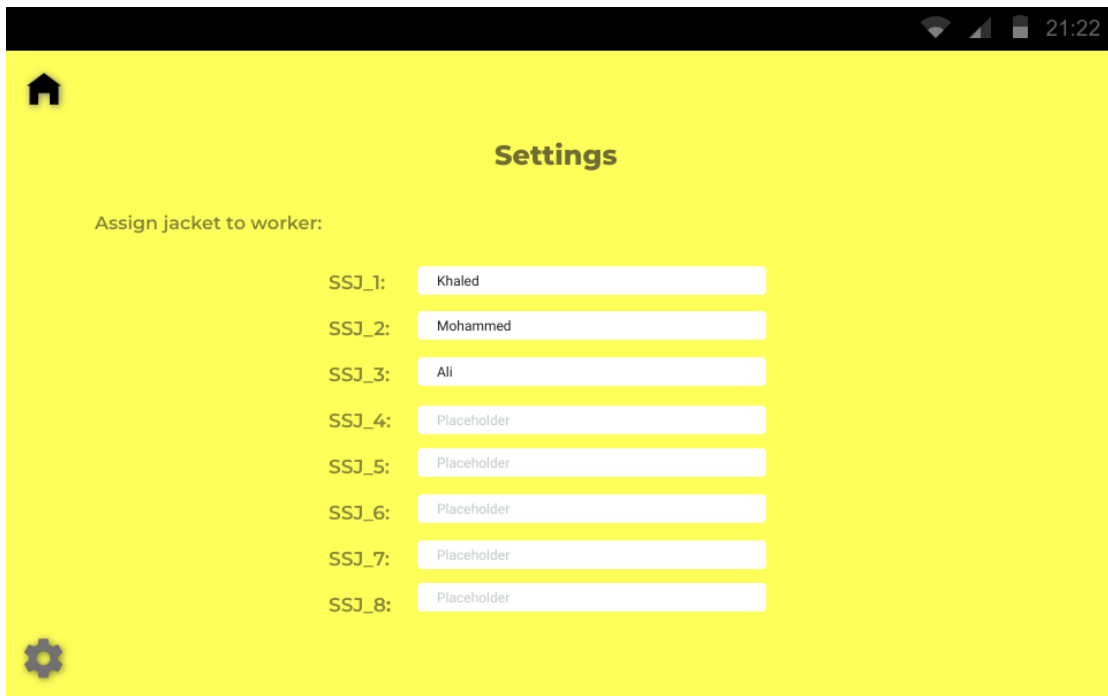


Figure 18: Settings page to assign workers

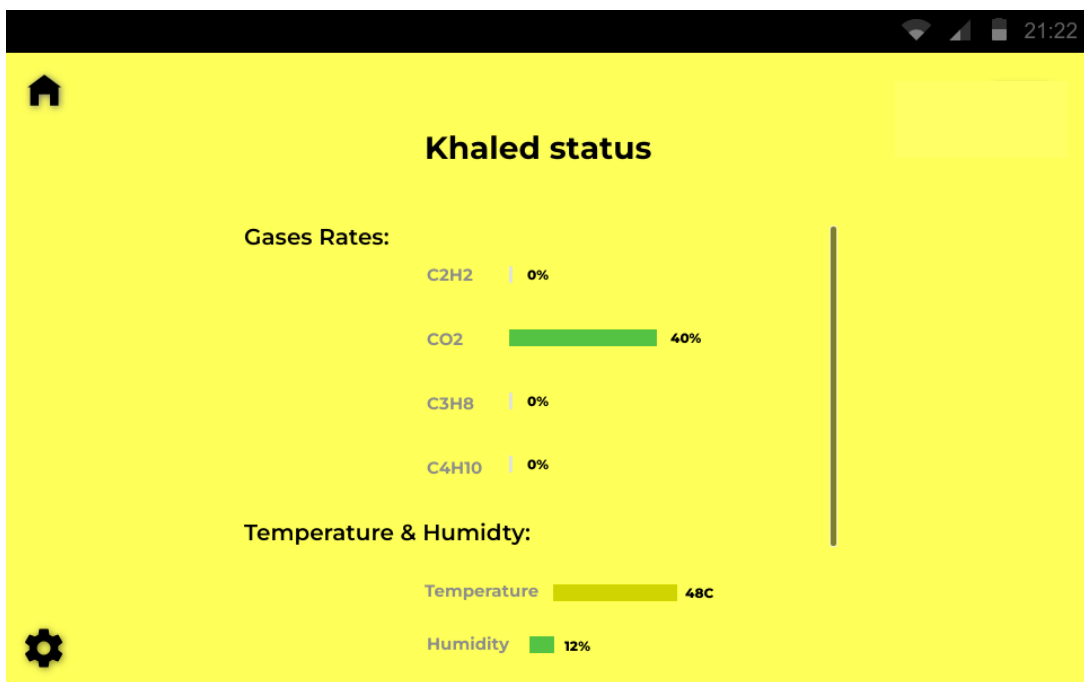


Figure 19: Khaled's status page, ranges appeared normal and has the settings, home and location icons

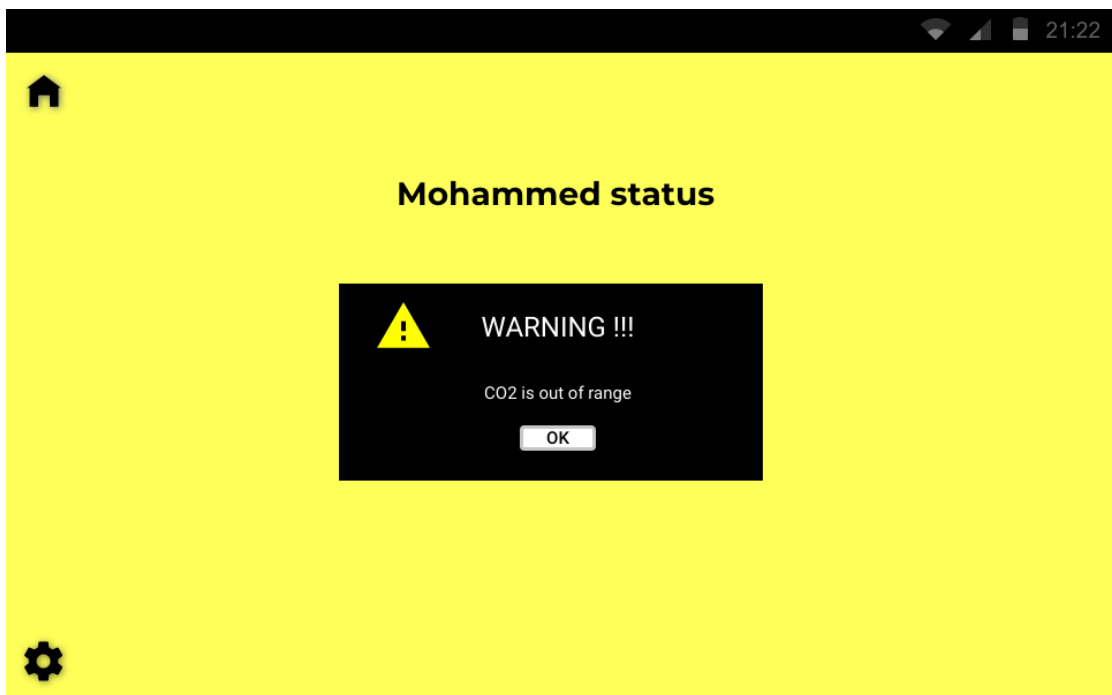


Figure 21: Mohammed's warning pop-up

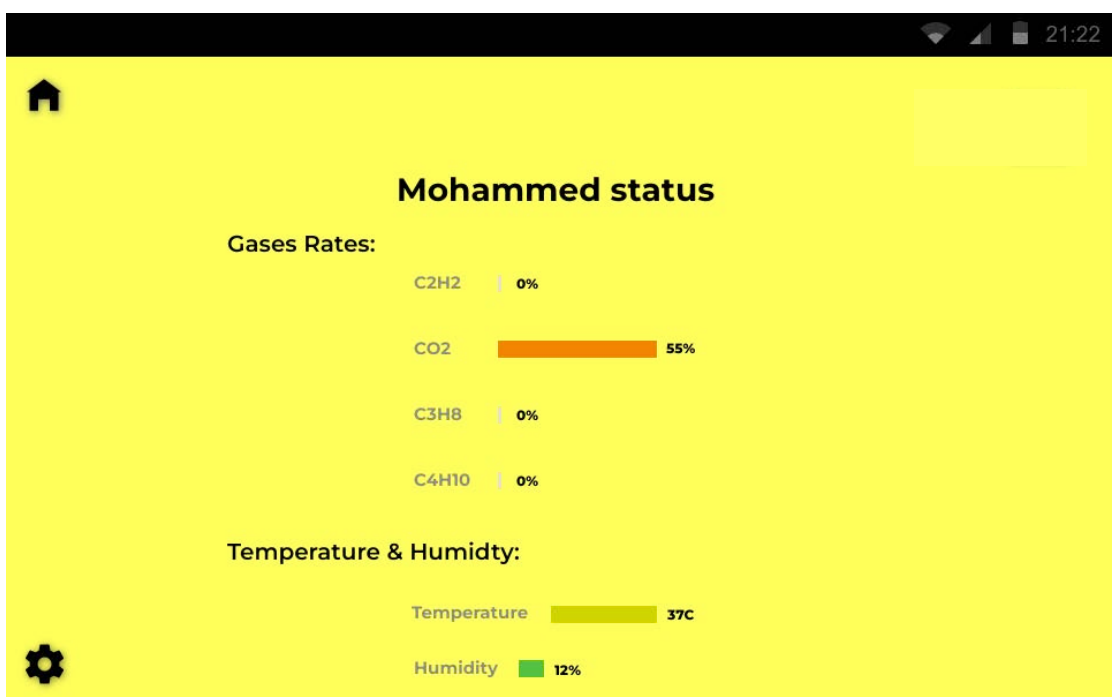


Figure 22: Mohammed's status page shows abnormal rates



Figure 23: Ali's alert pop-up

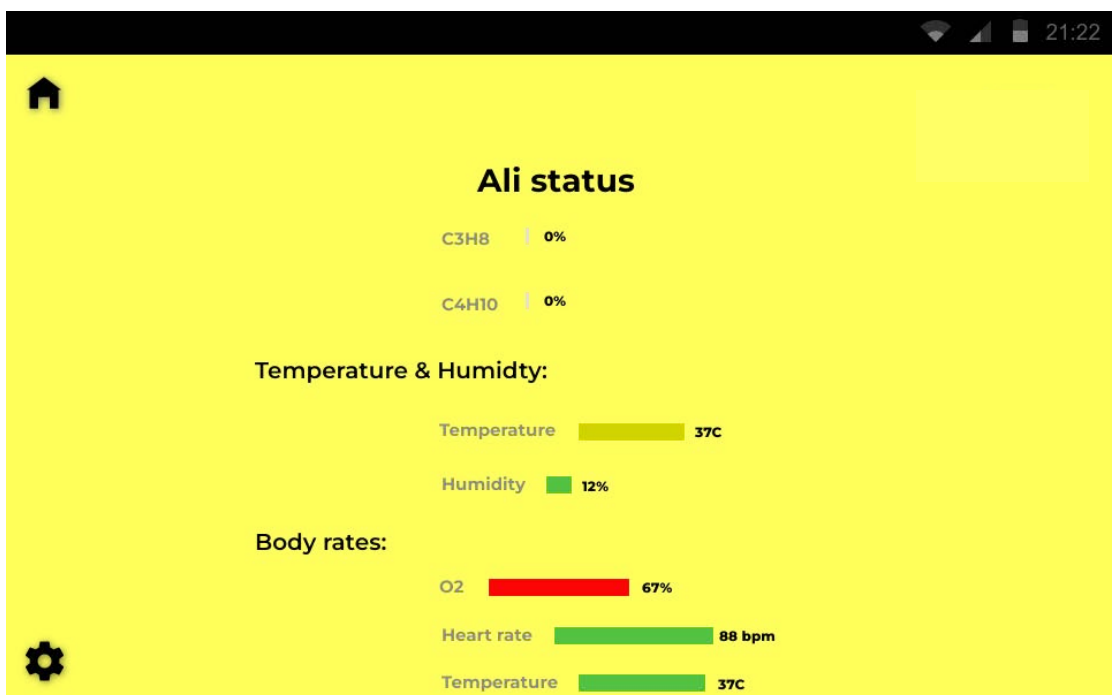


Figure 24: Ali's status page shows abnormal rates

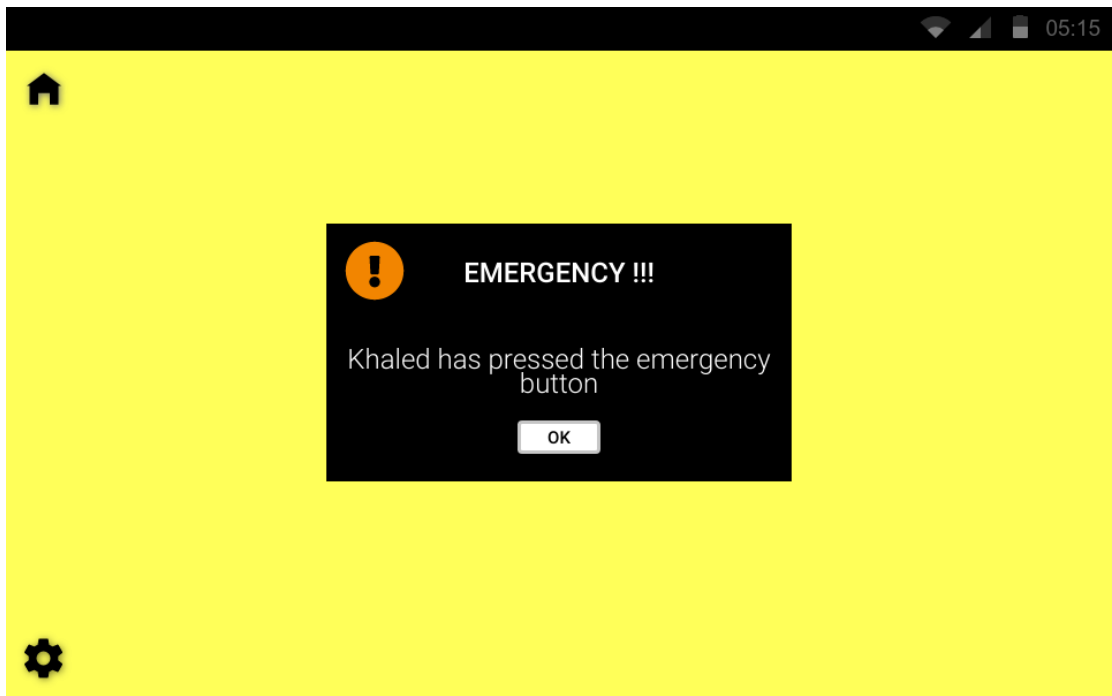


Figure 25: Khaled pressed the emergency button, so a pop-up appeared

Appendix C: User Manual

Hardware

- 1- The worker should turn the jacket on
- 2- The worker should wear the elastic band that's connected to the Oximeter
- 3- When a toxic gas is detected the buzzer and the LED should get triggered into a yellow light, and a warning message would be sent to the application
- 4- When a body rate goes out of range the buzzer and the LED should get triggered into a red light, and a warning message should be sent to the application
- 5- When an environmental reading goes out of range the buzzer and the LED should get triggered into a blue light, and a warning message should be sent to the application
- 6- The worker should press the emergency button if an emergency occurred so the buzzer and the LED get triggered into a purple light and the supervisor would be informed through a pop-up message
- 7- If the buzzer and the LED get triggered into a white light the worker should get out the place because it means the supervisor pressed the CALL-BACK button
- 8- The supervisor should charge the battery of the jacket every 48 hours

Software

- 1- Supervisor login to the account.



Figure 26: Manual, Sign in page

- 2- The home page will be shown.



Figure 27: Manual, Home page

- 3- On the home page will be shown all workers names and statuses.
- 4- The supervisor can monitor all the workers on the home page at the same time.

- 5- The background of the worker will be green when he is in the normal range.

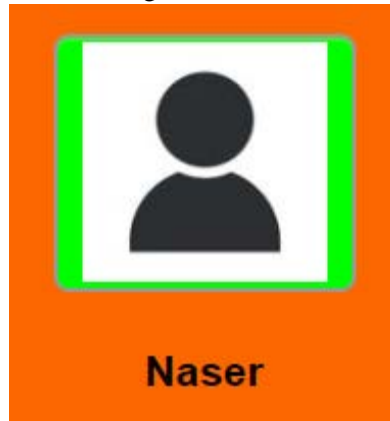


Figure 28: Manual, icon green background

- 6- The background will change to yellow when the worker is close to danger.

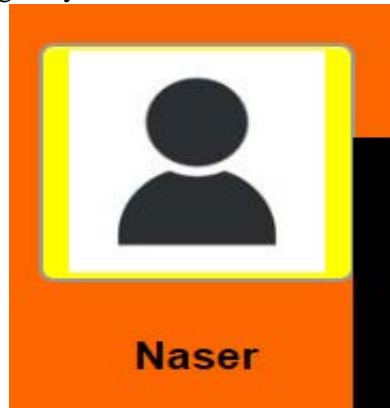


Figure 29: Manual, icon yellow background

- 7- The background will change to red when the worker is in danger.

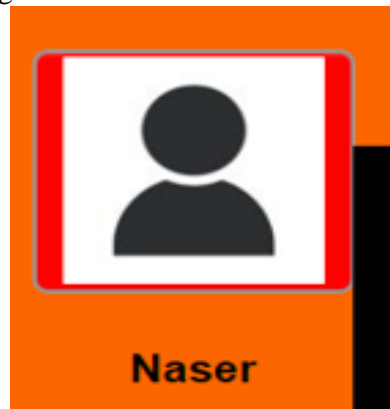


Figure 30: Manual, icon red background

- **Settings**



Figure 31: Manual, settings icon and page

- 1- To assign each worker to a jacket, click the setting button.
- 2- Enter the name of the worker in the white box.
- 3- After adding the name of the worker, click on the save button.
- 4- The worker assigned to jacket.

- **CALL-BACK**



Figure 32: Manual, call-back button

- 1- The CALL-BACK button on the home page.
- 2- By clicking the CALL-BACK button, the supervisor will call up the worker.
- 3- The white color will flash, and the buzzer will open on the jacket.

- **Warnings messages**

- 1- The warning message will show on the setting and home page.

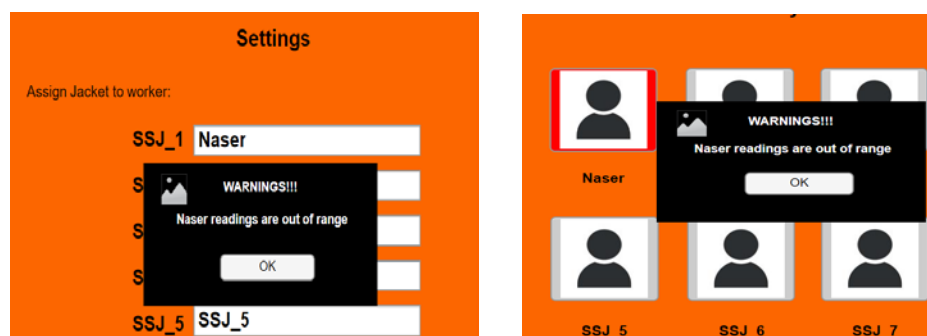


Figure 33: Manual, warning pop-up messages

- **Monitoring the worker**

- 1- Click on the page of worker to move for statues page.

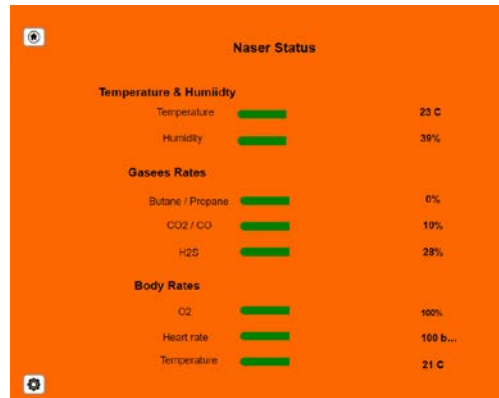


Figure 34: Manual, worker statues page (normal range)

- 2- The shown page is a normal range of worker.
- 3- When the humidity is close to danger will change color to yellow.

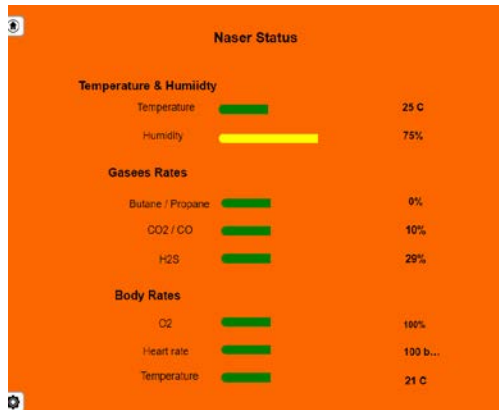


Figure 35: Manual, worker statues page (abnormal range)

- 4- It will be changed to red he is in danger because the oxygen and humidity are out of range.

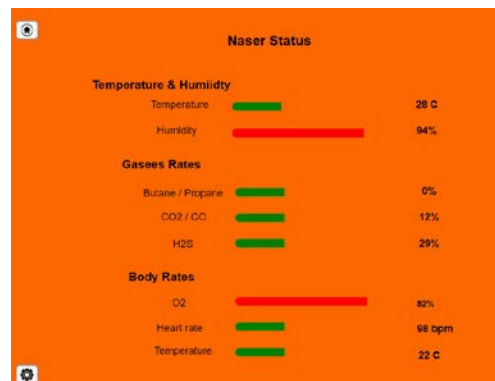


Figure 36: Manual, worker statues page (abnormal range)

- **For safety**

- 1- Keep the jacket away from water.
- 2- The battery should be charged every 48 hours.