



Optimizing ICU conditions to reduce risks

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Introduction

This system ensures that ICU environmental conditions are continuously monitored to maintain optimal levels of patient safety and comfort. It tracks temperature, humidity, and air pressure in real-time.

How It Works

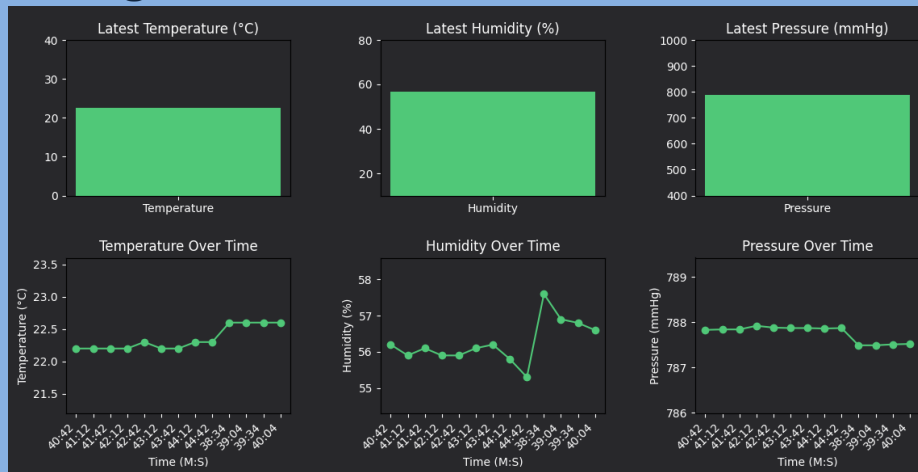
The system uses advanced sensors to measure key environmental parameters. These measurements are processed and displayed on an intuitive dashboard. The dashboard features three colored bar charts—one for humidity, temperature, and air pressure. Green bars indicate safe conditions, yellow warns that parameters are nearing critical thresholds and red signals unsafe conditions when a threshold is exceeded. Alerts through the dashboard and through a programmed telegram bot are automatically triggered when intervention is needed, enabling quick responses to maintain ideal ICU conditions.



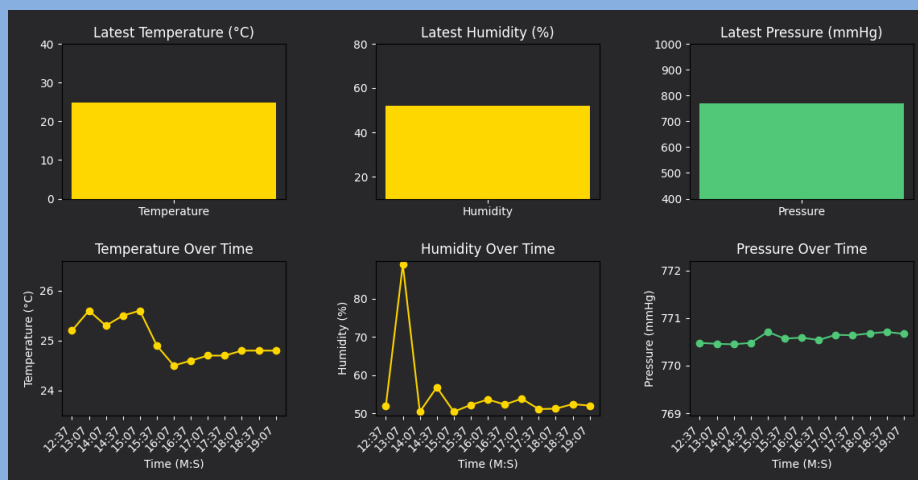
How It Looks

- Dashboard interface:**

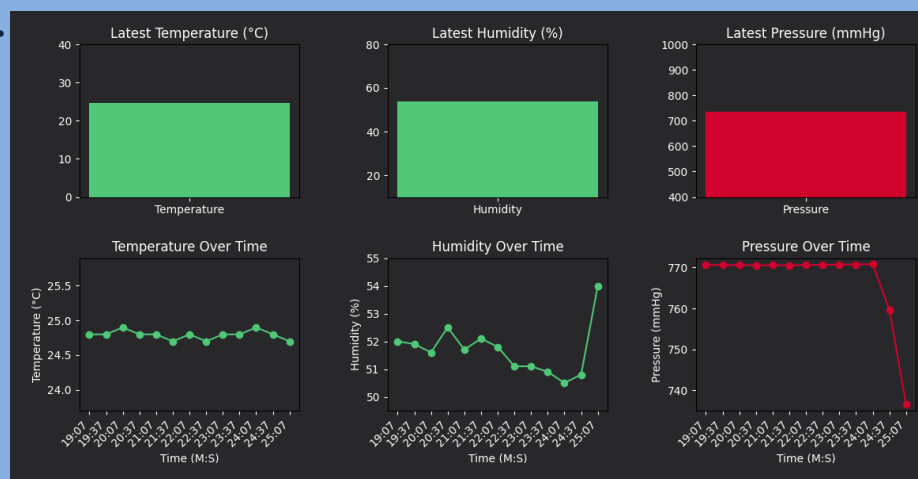
In picture(1) here, the three parameters indicate safe levels where all bar charts are green.



In the picture(2), both temperature and humidity are close to the threshold, where their bar charts are yellow.



In the picture(3), pressure has exceeded the threshold, where its bar chart is red.

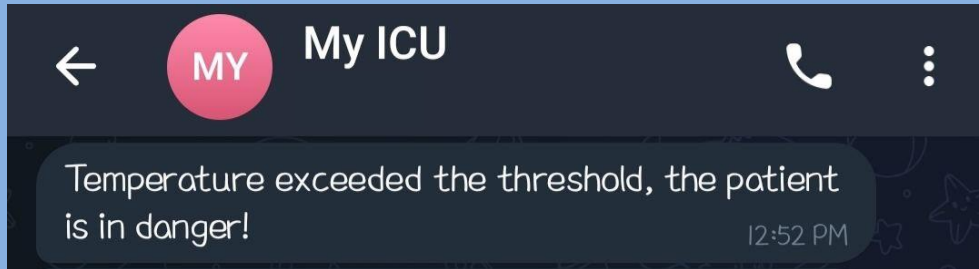




How It Looks

- **Alert notification:**

Here, the temperature threshold was exceeded and an alert message was sent through the telegram bot.



Benefits

- **Real-Time Monitoring:** Continuous tracking of critical environmental factors.
- **Alerts:** Immediate notifications when conditions need attention.
- **Data Logging:** A record of environmental data for review and analysis.
- **Power efficiency:** A power-saving system with a power efficiency of 88.6%
- **User-Friendly Interface:** A clear, color-coded dashboard simplifies monitoring for ICU staff, reducing the learning curve.