

SmartCityX: The AIoT Hackathon

Prototype Phase REPORT

Project name: 7. Smart inhaler - 1D - health

Team name: Circuit Knights

Team Lead:

1. Jayabalan Dharmadurai – CB.EN.U4ECE24124 – ECE 2nd Year

Team Members:

1. Suriya R S – CB.EN.U4ECE24154 – ECE 2nd Year
2. Barat S V – CB.EN.U4ECE24105 – ECE 2nd Year
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Theme: Urban Healthcare

Track: 1D model

Idea Brief:

The Smart Inhaler Monitoring System is a compact device that tracks inhaler usage and air quality in real time. It features a puff counter, OLED display for live data, and a buzzer alert for harmful air conditions. Data can be accessed remotely by doctors, enabling preventive care and emergency preparedness. Designed for urban asthma patients, it supports safer, smarter, and connected respiratory healthcare.

Software Requirements:

Website Tech Stack: CodePen (for testing code), Tiny.host (for web hosting)

App Tech Stack: WebIntoApp (web-to-APK conversion)

AI/ML model: Edge impulse

Dataset: <https://studio.edgeimpulse.com/public/762393/live>

Wokwi link: [Wokwi - Online ESP32, STM32, Arduino Simulator](#)

Cloud Platform: Adafruit IO

Feasibility:

The system can be embedded in inhaler cases and used by asthma patients in urban areas to monitor air quality and inhaler usage. It transmits real-time data to doctors for remote monitoring and preventive care. The device is compact and runs on a rechargeable Li-ion battery with low-power components, ensuring multi-day operation. Its placement near the inhaler mouthpiece ensures accurate puff tracking and easy portability.

Budget: 1077

S. No.	Name	Count	Purchase link/Offline store	Status	Price
1.	ESP32 Dev Board	1	https://robu.in/product/38pin-cp2102-esp-32-wifiblueetooth-development-board-with-type-c-usb-interface/	Ordered	400
2.	MQ135 Gas Sensor	1	https://robu.in/product/mq-135-air-quality-gas-detector-sensor-module-for-arduino/	Ordered	130
3.	SSD1306 OLED Display	1	https://robu.in/product/0-96-inch-i2c-iic-oled-lcd-module-4pin-with-vcc-gnd-white/	Ordered	190
4.	Push Button	1	https://robu.in/product/6x6x5-tactile-push-button-switch/	Ordered	15
5.	Buzzer	1	https://robu.in/product/tmb12d05-cldz-electromagnetic-active-integrated-buzzer-5v12x7-5mm/	Ordered	25
6.	TP4056 Charging Module	1	https://robu.in/product/tp4056-1a-li-ion-lithium-battery-charging-module-mini-usb/	Yet to order	17
7.	5V Rechargeable battery	1	https://sharvielectronics.com/product/5v1800h-1s2p-5v-1800mah-lithium-ion-rechargeable-battery-with-5-5x2-1-male-and-jst-sm/	Yet to order	300
				Total required	1077
				Total Available	0
				Total Budget	1077

AMRITA VISHWA VIDYAPEETHAM, COIMBATORE