



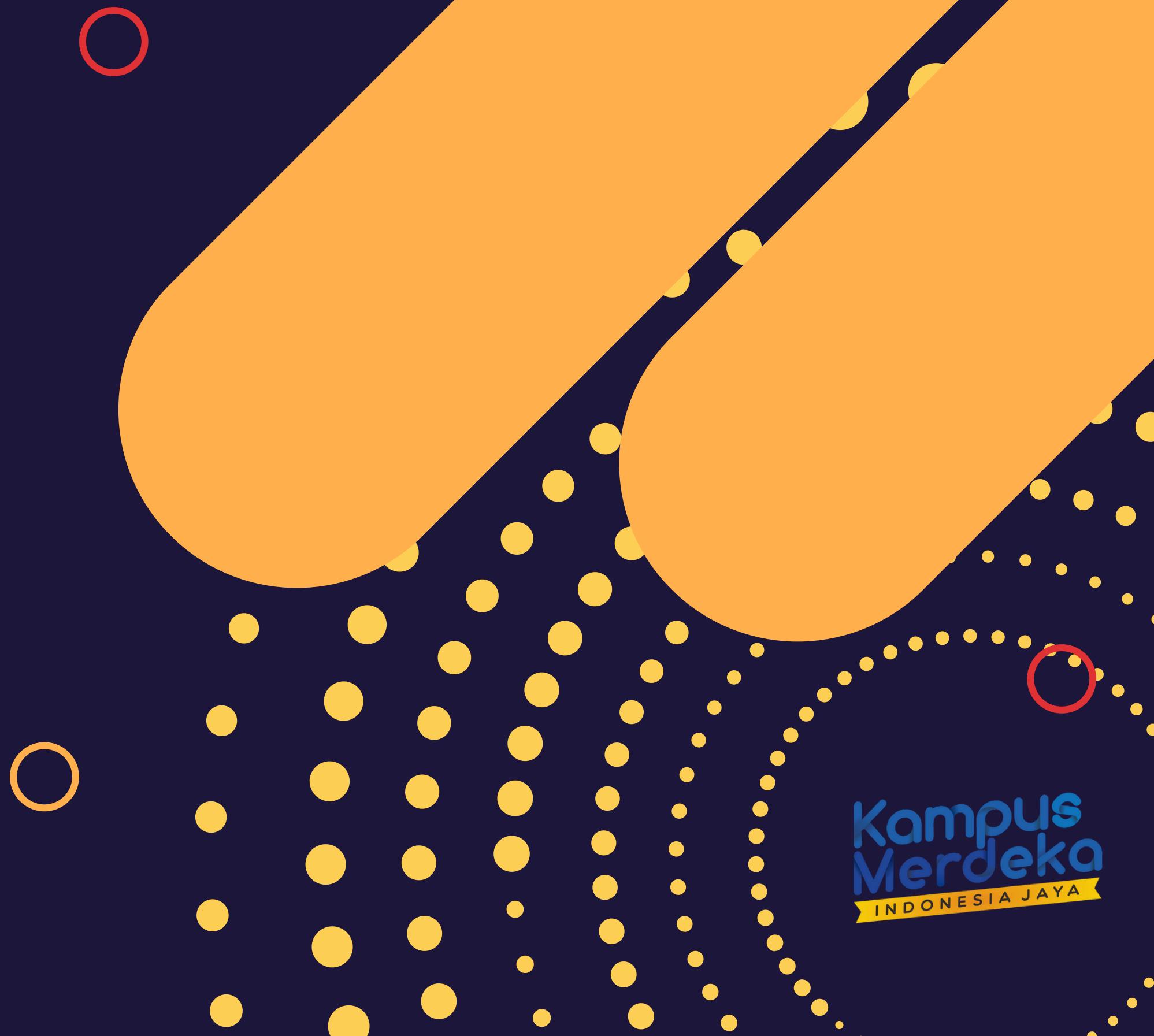
Luminəsense
by C241-PS261

 **bangkit**
Google goto traveloka

Lumind SENSE

PRODUCT-BASED CAPSTONE PROJECT

Team ID: C241-PS261



Kampus
Merdeka
INDONESIA JAYA

MEET OUR TEAM



**Naj'la
Tsaqifah Adilah**

Machine Learning

M308D4KX1777



**Hiyarunnisa
Kahes Waypi**

Machine Learning

M203D4KX1935



**Willy
Ahmadi**

Machine Learning

M308D4KY3170



**Dinda
Regista Aprilia**

Cloud Computing

C001D4KX0180



**Amelia
Ismania Sita
Widianingrum**

Cloud Computing

C265D4KX0145



**Clara
Isra Syamda**

Mobile
Development

A012D4KX4585



**Idlofi
Zahir Rajaba**

Mobile
Development

A012D4KY3411

Here are The Serious Problem!

According to data from BPS, around 40% of the total distributed electricity is used by households. In 2020, household electricity consumption reached approximately 111,413 GWh and increased to around 115,370 GWh in 2021.



The significant increase in household energy usage and security challenges indicate serious issues in domestic energy management, potentially leading to vulnerability and environmental security risks.





REASON

Why?

The urgent need to reduce energy wastage in indoor lighting settings and enhance security with human detection aligns with the mission to promote sustainability through innovative technology.

Relevance to global energy issues, the opportunity to leverage cutting-edge technology for a positive environmental impact, and the potential to improve security through human detection drove the selection of this theme and problem statement.



Problems We Want to Tackle

Energy
Wastage

Security
Enhancement

Sustainability

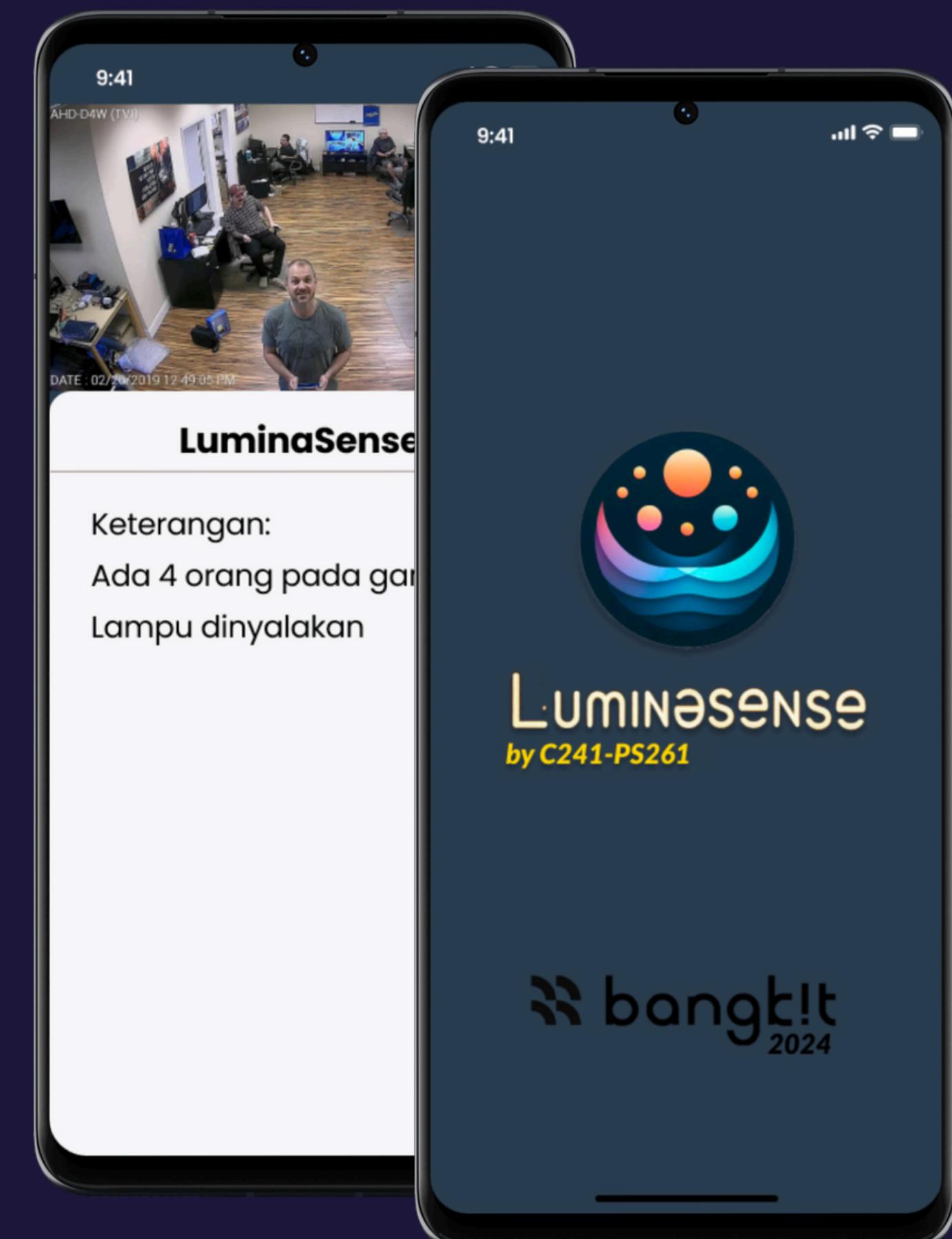
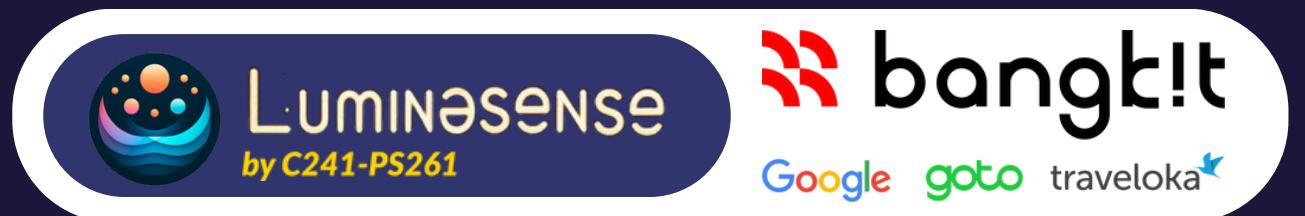
Technology
Integration

LuminaSense is an **integrated smart lighting and human presence monitoring system** designed to enhance indoor **energy efficiency and security**.

The system aims to:

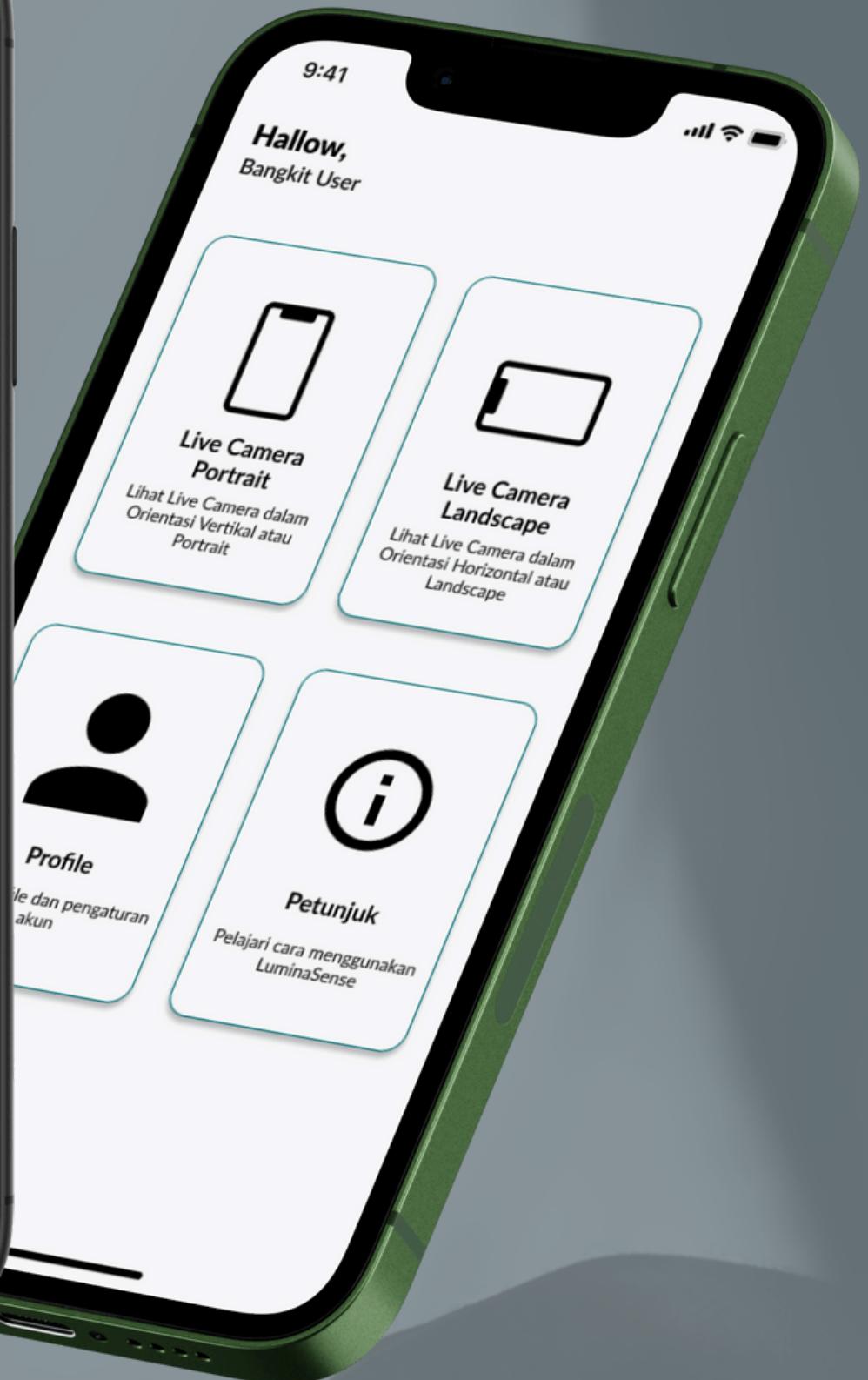
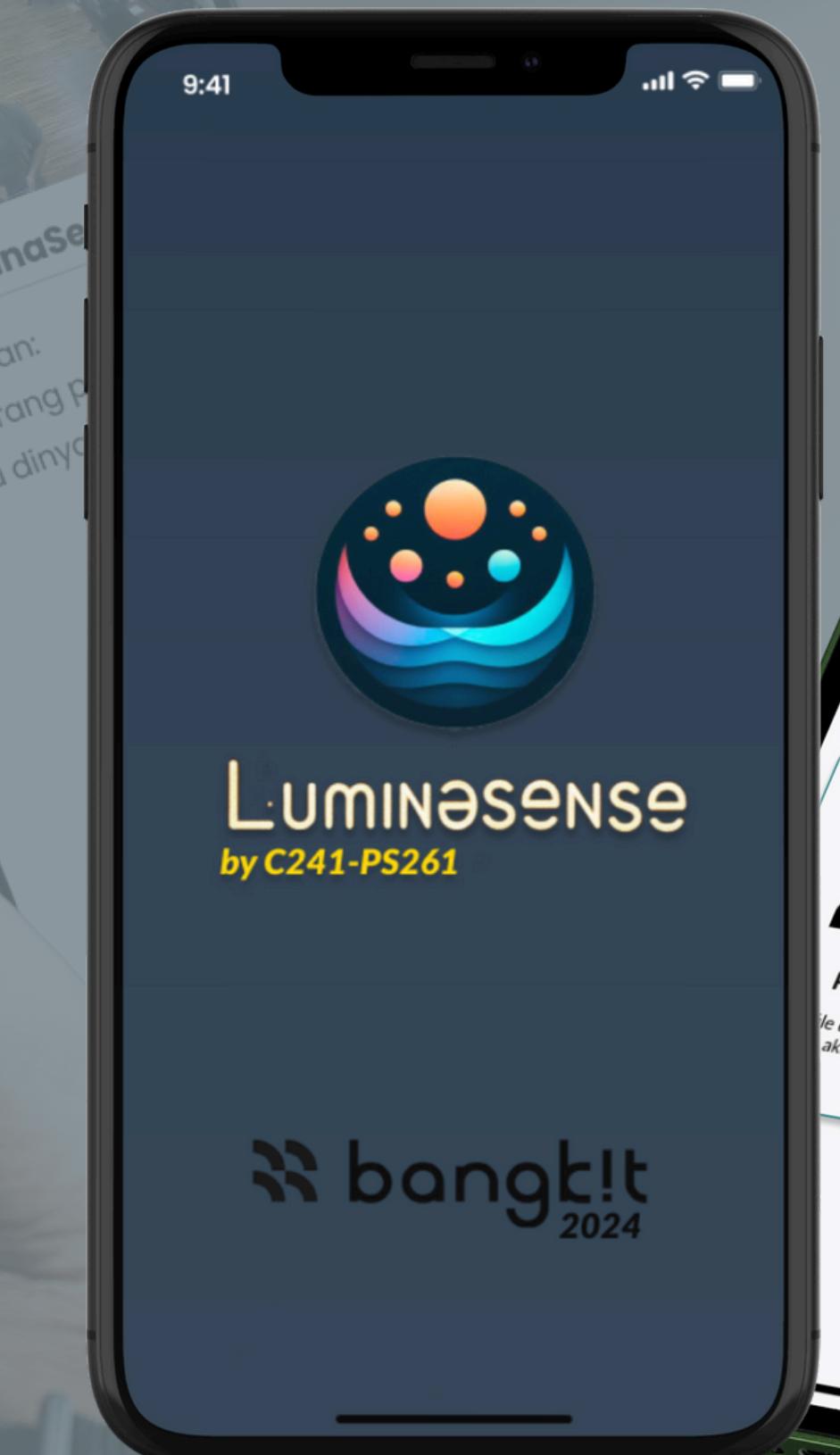
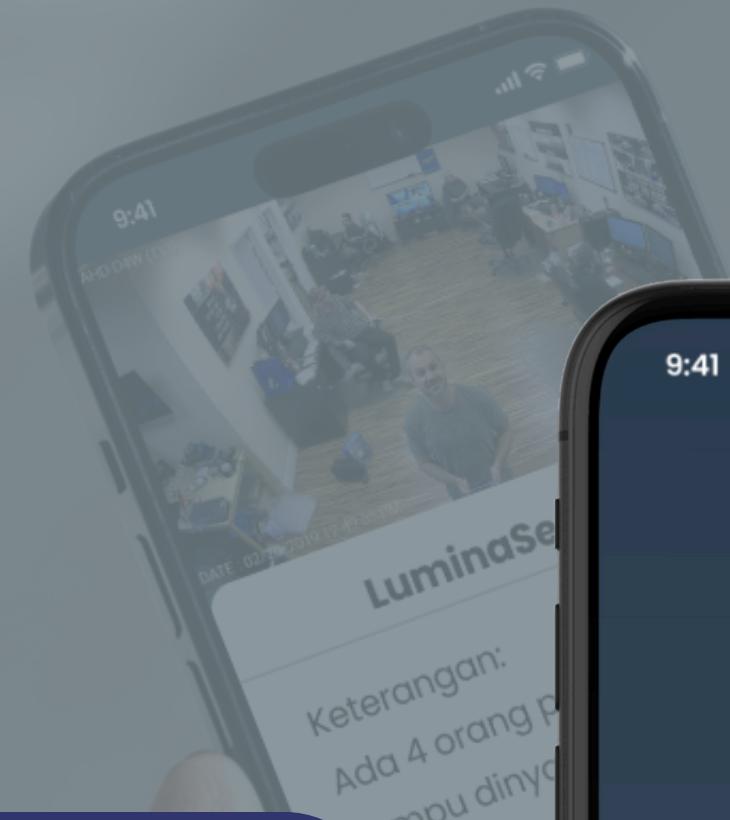
- ▶ **Enhance Energy Efficiency:** By automatically adjusting lighting based on human presence, reducing unnecessary energy consumption.
- ▶ **Ensure Security:** Utilizing advanced camera and sensor technology to detect and alert users to unauthorized intrusions or unusual activities.
- ▶ **Promote Sustainability:** Supporting sustainable living practices by optimizing energy use and reducing carbon footprint.
- ▶ **Provide User Convenience:** Offering a user-friendly interface and mobile app for seamless control and monitoring of home lighting and security.

Through these features, LuminaSense strives to optimize energy usage, enhance security, and promote a sustainable lifestyle for its users.





LUMINƏSENSE
by C241-PS261





While other systems prioritize motion detection for lighting control, LuminaSense specializes in advanced Human Detection technology

1

Multi-device Integration

LuminaSense supports seamless integration with a wide range of IoT devices within the home, enhancing functionality and enabling centralized control.

2

AI-driven Human Presence Detection

Uses advanced AI to detect human presence accurately, optimizing energy use based on occupancy patterns and user preferences, reducing operational costs.

3

Integrated Energy Management

Provides a unified platform to efficiently monitor and manage home energy consumption with detailed analytics for informed decision-making.

4

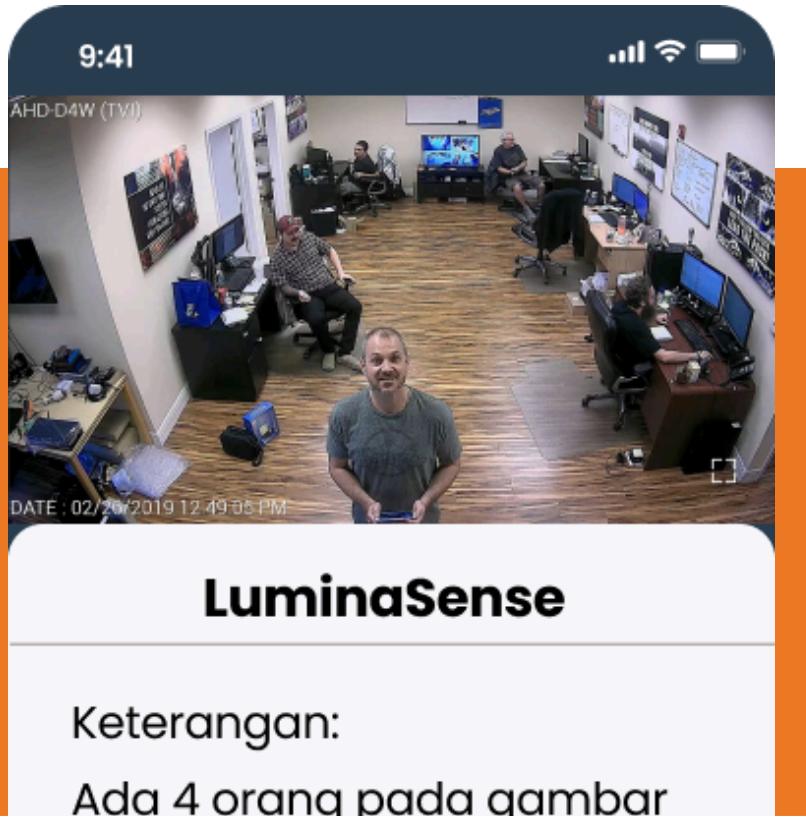
Flexibility and Scalability

Designed to scale and adapt to different household sizes and complexities, ensuring a versatile solution that evolves with user needs.

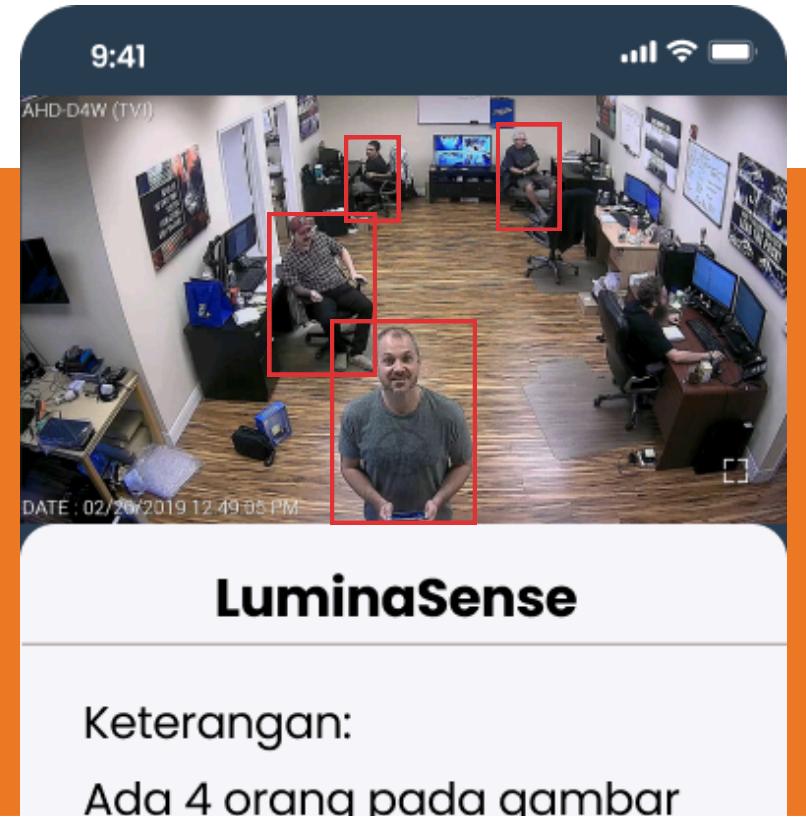
LuminaSense App Features



Integrated with Camera
Models



Real-time Live Camera
Display



Advanced Human
Detection Capability



Demo Application

[LinkYoutube](#)

Documentation

Cloud Computing Mobile Developer Machine Learning



Google Cloud Platform





Deployment Timeline

- System development
- Environment setup
- Personnel hiring

August

01 — 02 — 03 — 04 — 05 — 06

July

- Market research
- Procurement of hardware

- Pilot location setup
- Feedback gathering
- Performance evaluation

October

September

- Internal testing
- Environment configuration
- Documentation preparation

- Rollout deployment
- Monitor performance
- Optimization based on feedback

December

November

- System enhancements
- Infrastructure scaling
- User training



Budget Allocation

Category	Budget (IDR)
Team Salary	470,000,000
Marketing	25,000,000
Operational	35,000,000
Product Development & Research	85,000,000
Other Expenses	15,000,000
TOTAL	630,000,000



Budget Allocation (Team Salary)

Personnel	Description	Number	Budget (IDR)
Project Manager	160 hours/month/person	1	60,000,000
Mobile Kotlin Developer	160 hours/month/person	2	100,000,000
Machine Learning Specialist	160 hours/month/person	1	80,000,000
UI/UX Designer	160 hours/month/person	1	50,000,000
Marketing Specialist	160 hours/month/person	1	40,000,000
Cloud Computing Specialist	160 hours/month/person	1	30,000,000
Security Specialist	160 hours/month/person	1	30,000,000
Implementation Team	160 hours/month/person	2	80,000,000
TOTAL			470,000,000



Budget Allocation

Marketing

Item	Budget (IDR)
Marketing Campaigns	15,000,000
Promotional Materials	10,000,000

Operational

Budget (IDR)	Budget (IDR)
Purchase/Rental of Equipment	20,000,000
Cloud Infrastructure	15,000,000
Google Colab Pro Subscription (6 months)	0 (included in Cloud Infrastructure)
Google Workspace Business Starter Subscription (6 months)	0 (included in Cloud Infrastructure)



Budget Allocation

Product Development & Research

Budget (IDR)	Budget (IDR)
System Development	50,000,000
Research and Testing	30,000,000
Artificial Intelligence Integration	5,000,000

Other Expenses

Budget (IDR)	Budget (IDR)
Taxes	3,000,000
Reserves	7,000,000
Unexpected Expenses	5,000,000



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THANK YOU
**"Smart Lighting, Secure Living:
LuminaSense"**