



An Intelligent Energy Control System for Home

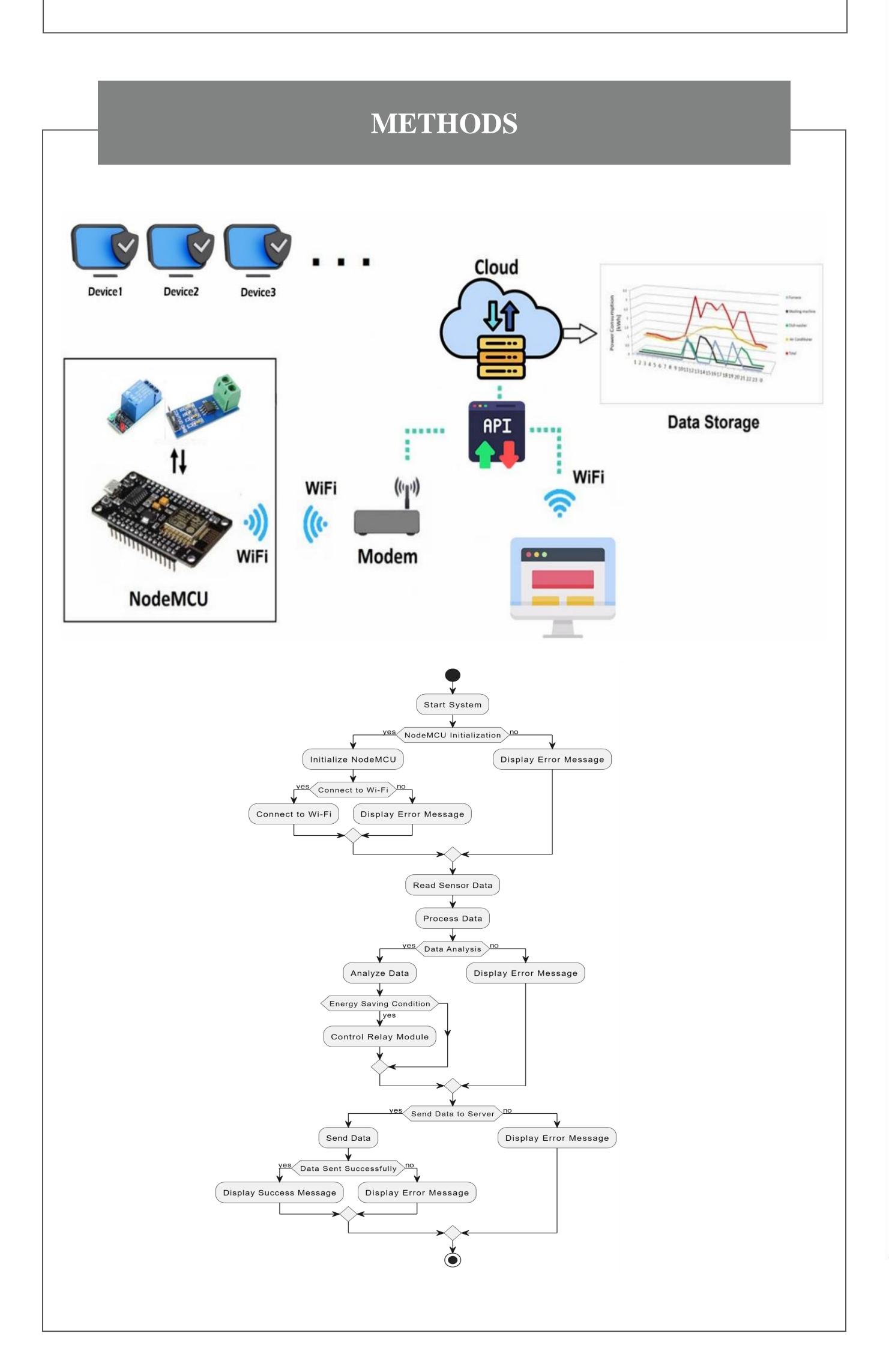
Adel Alatawi, Yousef Alsilal, Abdulelah Alqahtani, Abdullah Alshehri University of Tabuk, Tabuk 47512, Kingdom of Saudi Arabia.

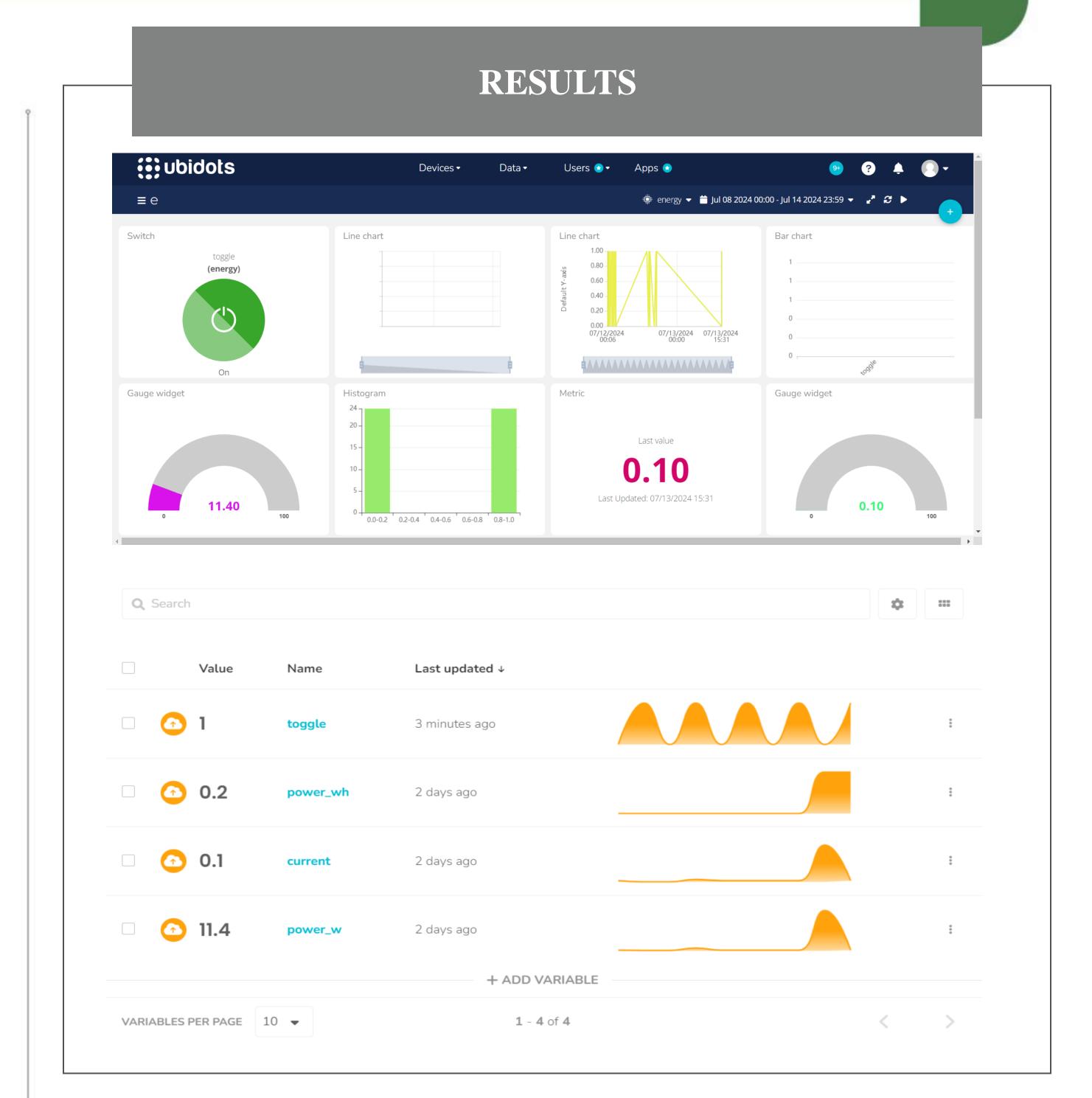
INTRODUCTION

The demand for energy efficiency and sustainability in homes has led to the development of an "Intelligent Energy Control System for Home." Using AI, IoT, and data analytics, this system autonomously manages energy consumption to improve efficiency, reduce costs, and promote sustainability.

OBJECTIVES

- 1. Utilize IoT technology to monitor home appliance energy use and display data on the "ubidots" front end.
- 2. Enable remote device management through ubidots.





CONCLUSION

The development and implementation of "An Intelligent Energy Control System for Home" represent a significant step forward in addressing the growing demand for energy efficiency, sustainability, and smart home automation. This advanced system aims to optimize energy consumption by intelligently monitoring and controlling various household appliances and systems. By integrating cutting-edge technologies such as IoT (Internet of Things), machine learning, and real-time data analytics, the system can dynamically adjust energy usage patterns based on the occupants' behavior, preferences, and real-time energy pricing.

REFERENCES

- [1] Shareef , H., Ahmed, M. S., Mohamed, A., & Al Hassan, E. (2018). Review on home energy management system considering demand responses, smart technologies, and intelligent. controllers. Ieee Access, 6, 24498-24509.
- [2] Al-Ani, O., & Das, S. (2022). Reinforcement learning: theory and applications in hems. Energies, 15(17), 6392.
- [3] Lissa, P., Deane, C., Schukat, M., Seri, F., Keane, M., & Barrett, E. (2021). Deep reinforcement learning for home energy management system control. Energy and AI, 3, 100043.
- [4] Mason, K., & Grijalva, S. (2019). A review of reinforcement learning for autonomous building energy management. Computers & Electrical Engineering, 78, 300-312.
- [5] Leitao, J., Gil, P., Ribeiro, B., & Cardoso, A. (2020). A survey on home energy management. IEEE Access, 8, 5699-5722.
- [6] Mir, U., Abbasi, U., Mir, T., Kanwal, S., & Alamri, S. (2021). Energy management in smart buildings and homes: current approaches, a hypothetical solution, and open issues and challenges. IEEE Access, 9, 94132-94148.