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REVIEWER'S REPORT

Manuscript No.: IJAR- 51114

Date:14/04/2025

Title: Design and Simulation of IoT-Based Intelligent Home Automation Systems Using

MATLAB Simulink and Python Integration

Recommendation:	Rating	Excel.	Good	Fair	Poor
Accept as it is	Originality		-		
ccept after minor revision	Techn Quality		_		
Accept after major revision			_		
Do not accept (Reasons below)	Clarity		-		
	Significance		-		

Reviewer Name: Dr. Gulnawaz

Reviewer's Comment for Publication.

This thesis presents a practical and well-structured approach to modeling an IoT-based smart home automation system using Python and MATLAB Simulink. It effectively demonstrates how key components like MQTT protocol, Python libraries, and simulated hardware (e.g., ESP8266, relays, sensors) can be integrated into a smart environment. The simulation is robust and informative, particularly in how it mimics real-time device interaction and control. However, there are areas where improvement is needed for technical rigor and presentation quality.

Detailed Reviewer's Report

Major Strengths

- 1. **Relevance & Timeliness:** The integration of IoT in home automation is a highly relevant topic, with growing demand for efficient and intelligent systems.
- 2. **Simulation Approach:** The combination of Python and MATLAB Simulink gives a dual-layer modeling capability that adds value to the study.

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- 3. Clarity of Objective: The primary objective and methodology are clearly laid out.
- 4. **Practical Implementation:** Simulated real-time communication through MQTT and device state updates provide a realistic proof of concept.

Areas for Improvement

1. Abstract

- Issue: Lacks numerical results or performance benchmarks.
- **Suggestion:** Include concrete simulation outcomes such as latency, data rate efficiency, or power savings to highlight the system's effectiveness.

2. Methodology and Implementation

- **Issue:** The explanation of how MATLAB Simulink models are integrated with Python scripts is minimal.
- **Suggestion:** Elaborate on the integration interface or data exchange layer between Simulink and Python. Screenshots of the Simulink blocks and explanation of how they correspond to Python devices would enhance clarity.

3. Code and Simulation

- **Issue:** Python code snippets are fragmented and lack contextual explanation.
- **Suggestion:** Organize code into functions or modules with brief descriptions. Include comments to explain purpose and logic flow, especially for MQTT publishing/subscribing.

4. Figures and Diagrams

- Issue: Figure references (e.g., Fig. 1, Fig. 2) are mentioned but not presented in the text.
- **Suggestion:** Embed figures with clear captions and integrate them into the explanation where relevant. Ensure they are visible and support the described content.

5. Mathematical Modeling

- Issue: Math section feels disconnected from the rest of the narrative.
- **Suggestion:** Integrate the equations into relevant sections with contextual applications—for example, relate energy calculations to specific device use cases in the simulation.

6. Language and Style

- **Issue:** There are several grammatical inconsistencies and awkward phrases.
- **Example:** "Intractable" used instead of "instructable" or "interactive" when describing Arduino circuits.
- **Suggestion:** Proofread for grammar and vocabulary consistency. Consider professional language editing if intended for publication.

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7. Literature Review

- Issue: The literature review is short and lacks specific citations.
- **Suggestion:** Expand the review to include more recent studies on Python-based IoT systems, MQTT applications, and smart home simulation platforms. Use consistent referencing style (APA or IEEE).

8. Conclusion and Future Scope

- **Strength:** The summary provides a good wrap-up of the findings.
- **Suggestion:** Highlight key performance metrics, simulation reliability, and limitations encountered during development. Include specific future goals such as cloud integration, machine learning, or real-device deployment.

Recommendation

Accept with Minor Revisions

The thesis demonstrates solid technical understanding and a practical simulation of smart home systems. With attention to citation formatting, integration clarity, simulation visuals, and language polish, this work can be a strong candidate for publication or academic recognition.