Project Information

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Group ID	02		
Project Title	HOME: Hotel Optimization and Managing Ecosystem		

System Focus

To describe the focus of your proposed system, use these four elements: domain, functionality, components, and objective.
For more information, refer to the introductory slides of the practicals.

Domain	⦿ Smart building ◯ Autonomous vehicle	Type	Hotel
Functionality	Monitoring	temperature, light, room occupancy, need for room-service, CO_2 quality, sorrounding room noise level etc.	
	Automation	AC (heating/cooling), blinds, alarms, lights. window/ventilation, audio adjustment	
Components	1	UI	
	2	Specific Branch Server	
	3	Database	
	4	Data Aggregation Unit	
	5	Gateway	
	6	Sensor, Actuator	
Objective	Improve the comfort/quality of guests during their stay. Improve staff productivity and hotel energy efficiency.		

Project Requirements

Briefly explain how you intend to address the five project requirements: system design, system integration, IoT, AI planning, and visualisation. You may exclude the last project requirement, system distribution, as it is primarily relevant for the demo.

System Design	Each room collects a variety of data that is sent to a server (for the entire hotel) through a gateway.
System Integration	Rooms are individual units each connected to central hotel server. New units can be added at any time. Each room is standardised by its gateway.
IoT	Sensor: lighting, heating, ventilation, card reader, water Actuator: blinds, air conditioning, window state, access card, speaker
AI Planning	Optimization of cleaning paths and cleaning times. Optimization of ressources per room.
Visualisation	Aggregated visualization for staff and seperate visualization for guests of their individual rooms
System Distribution	Sensors & Actuators for each room, data aggregation per hotel, central data processing for the entire hotel on local server.

Keep your text concise and ensure it remains readable by fitting within the provided text boxes.

System Architecture Diagram

Include a clear diagram of your intended system architecture. Your system components have to be compatible with the descirption provided in the System Focus section. Ensure the diagram is a logical design and is not dependent on deployment and/or implementation.