Project Information			
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Group ID	02		

Project Title	HOME: Hotel Optimization and Managing Ecosystem	
Domain	(●) Smart building ( ) Autonomous vehicle	
Type	*Specify the type of the non-residential building (e.g., warehouse, offices) or the type of the autonomous ground vehicle (e.g., delivery van, taxi).*	
	Hotel	
Project Description	**Monitoring**	*Specify what monitoring aspects your system includes.*
	Auotmation	*Specify what automation aspects your system includes.*
	Objective	
	Give a link to code repository (e.g., GitHub, Bitbucket, etc.). See slide 56 in slides set "01 Overview and logistics".	
Code Repository Link		

System Design

System components

	Components	Functionality
✔	IoT	Collection of data and execution of planned actions
✔	Context	
	Problem generation	
✔	Planning	
✔	Execution	
✔	Broker	Communication between gateway and backend
✔	Knowledge base	
	Other. *Specify what other logical components your system has.*	

System Architecture Diagram

Include a clear diagram of your system architecture Ensure the diagram is a logical design and is not dependent on deployment and/or implementation.

System Distribution

Number of Machines and Components Distribution

☑ 2+ machines

Specify the type of each machine (e.g., PC, cloud, or Raspberry Pi).

Type
PC (acting as server), Raspberry Pi (acting as gateway for sensors)

Specify what logical components are deployed on each machine.

Components

IoT

Sensors

Sensor *(e.g., temperature)*	Physical	Software-based	Human-based	Simulated	Virtual
temperature	◉	○	○	○	○
humidity	◉	○	○	○	○
light	◉	○	○	○	○
	○	○	○	○	○

Other. Specify the remaining sensors and their types (if more than 4 sensors)

Actuators

Actuator	Physical	Software-based	Human-based	Simulated	Virtual
light_switch	◉	○	○	○	○
motor	◉	○	○	○	○
	○	○	○	○	○
	○	○	○	○	○

Other. Specify the remaining actuators and their types (if more than 4 actuators)

System Integration

Mechanism

- [x] Publish-subscribe
- [ ] Message queue
- [ ] One-to-one

Messaging Middleware

- [ ] JMS
- [ ] ZeroMQ
- [ ] Apache Kafka
- [ ] RabbitMQ
- [ ] Redis
- [ ] IBM WebSphereMQ
- [ ] Apache Qpid
- [x] Other:

mosquitto

Protocol

- [x] MQTT
- [ ] DSS
- [ ] XMPP
- [ ] AMQP
- [ ] Other:

Mechanism

Explain briefly which components of your system use indirect communication.

The gateway and backend use indirect communication to exchange sensor and actuator data

Visualisation

What is displayed

- [ ] Latest plan generated
- [ ] Current state. *Briefly specify what exactly:*
- [ ] User control. *Briefly explain:*
- [ ] Other. *Briefly explain:*

AI Planning

AI Planning Technique

- (●) Classical planning
- ( ) HTN planning
- ( ) Other:

AI Planner

Specify the name and link to the AI planner used in your project:

https://github.com/AI-Planning/planning-as-a-service (dual-bfws-ffparser)

Explain briefly why the chosen AI planner is appropriate for your project:

It was possible to make it run locally within our docker enviornment

Domain Model

Explain briefly the main components of your domain model:

Problem Instance

Explain briefly what constitues an initial state in your problem instances:

Initial State

Explain briefly what constitutes a goal in your problem instances:

Goal

Problem instances are generated

- ( ) Once, before system starts.
- ( ) Whenever a state change happens.
- ( ) Other. *Explain briefly:*