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WORKSHOP 1: REQUIREMENTS

Functional requirements

- Add components and peripherals.
- Connect and interconnect devices
- Simulate circuit behavior
- Show in real time the sensors and actuators state
- Save, load and modify local circuit designs
- Support for wired and logic connections
- Be able to change the conditions for simulations, ex, day, night or rain
- Manual interaction with the switches
- Simulate the inter devices communication
- Allow the logic programmation and execute or debug the code
- Include visual indicators for the components as appropriate

Non-Functional Requirements

- Intuitive UI
- Usability
- Resource-efficient
- Extensibility and updatable
- Elegant, minimalist, and attractive design
- Allow add more components or libraries
- Be able to receive future updates and errors corrections

User Stories

Title: home´s Security	**Priority: High**	**Estimate: 2 Weeks**
User Story: As a member of the family, we want a system to bring us security 24 hours, so that we can be safe if we stay or not into the house.		
Acceptance Criteria: Give an alarm when it detects someone break into the house then it sends and alarm to the owner´s house.		

Title: Automatic Lights	Priority: Medium	Estimate: 2 weeks
User Story: As an owner´s house, I´d like a house that reduces electric consume with a smart system, so that we can reduce bills and stay calm if any switch keeps turning on.		
Acceptance Criteria: Give an advise to the owner when lights are on and nobody stay in house, then it turn off		

Title: Heating House	Priority: Low	Estimate: 1 Week
User Story: As a member of the family, we want a house without freezing times like nights, mornings or raining, so that we can be more comfortable staying at home.		
Acceptance Criteria: Given a house a warm atmosphere when the house detects 10°C or less, then it turns the heater on.		

Title: Education simulator	Priority: Medium	Estimate: 2 Weeks
User Story: As an electronic engineering student, I'd like to be able to easily simulate home automation (domotic) circuits for my electric circuits course. I'd also like the simulator to provide statistics on the circuit's behavior and allow me to program the logic of controllers and components as needed.		
Acceptance Criteria: It may simulate and provide statistics of the circuit, and offer tools for students who want to learn about domotic.		

CRC CARDS

Class: Switches and buttons	
Responsibility: Toggle or push buttons Turn on/turn down Show state Set the characteristics and limit values	**Collaborator(s):** Power supplies Simulation state Actuators Lamps Heaters Logic controles

Class: Alarm/Siren	
Responsibility: - Activate when a security event is detected. - Emit visual and/or loudly sounds. - Notify the SecuritySystem about activation.	**Collaborator(s):** Sensor, Security, System, Notification, Logic Controls

Class: Security System	
Responsibility: - Manage and coordinate all security components (sensors, alarms, cameras).. - Trigger alarms and activate cameras when thiefs are detected.	**Collaborator(s):** Sensor, SecuritySystem, Notification

Class: Camera	
Responsibility: - Detect and record video when motion or intrusion is detected. - Stream live footage to the dashboard in real time.	**Collaborator(s):** Sensor, SecuritySystem, Notification

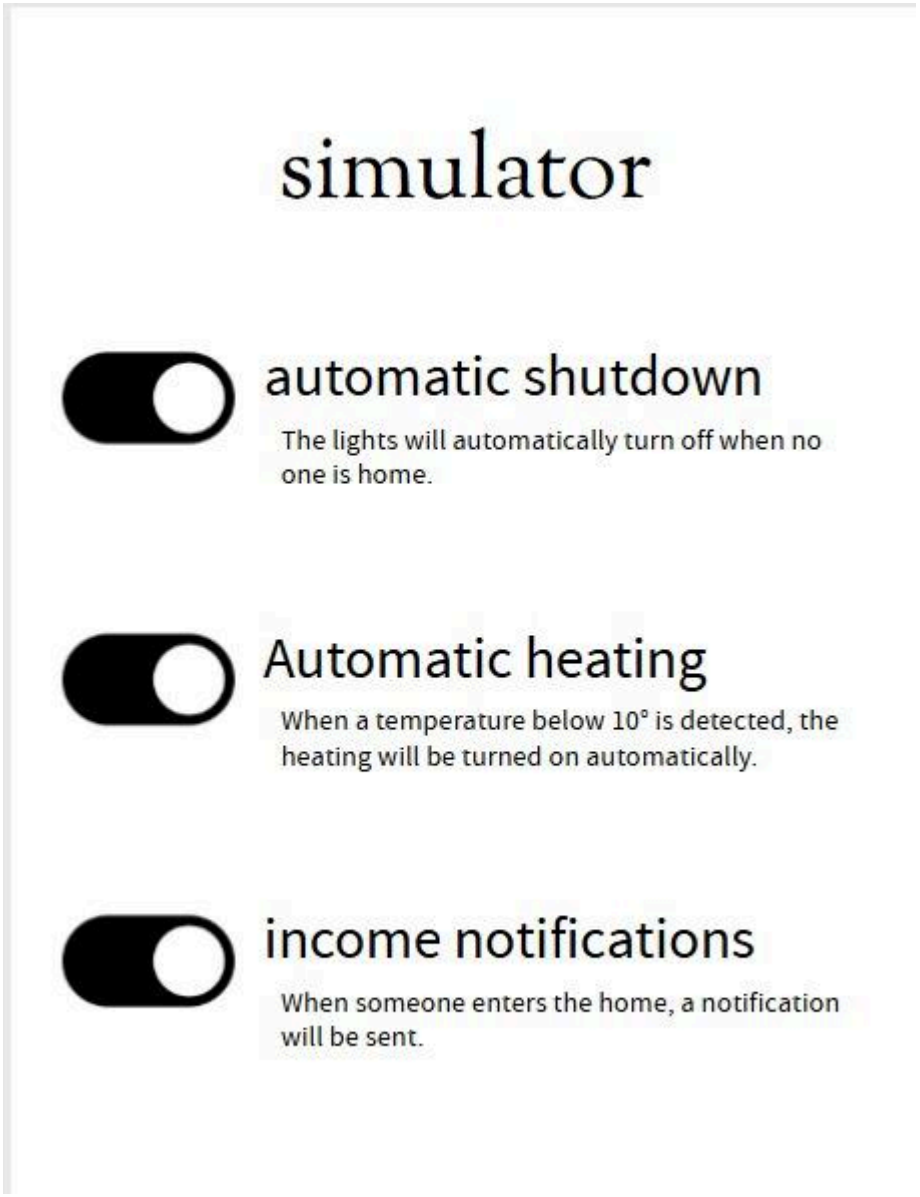
Class: Notification	
Responsibility: -Receive alerts from the SecuritySystem when an event occurs. - Send messages or warnings to users	**Collaborator(s):** SecuritySystem, Alarm, Camera, logic controllers

Class: Sensor	
Responsibility: - Detect physical changes or movements in the environment. - Send signals to the SecuritySystem when an event is detected.	**Collaborator(s):** SecuritySystem, Alarm, Camera, Notification, logic controllers

Class: Heating	
Responsibility: - Control and regulate the home's temperature according to user preferences or environmental conditions. - Receive temperature readings from Sensor devices	**Collaborator(s):** Sensor, SecuritySystem, Notification, logic controllers

Class: Logic controllers	
Responsibility: Let be programmed Read and recollect sensor measures Enable or disable logic outputs Upload data to the cloud	**Collaborator(s):** SecuritySystem, Alarm, Camera, Notification, logic controllers

Mockup


simulator
automatic shutdown
The lights will automatically turn off when no one is home.
Automatic heating
When a temperature below 10° is detected, the heating will be turned on automatically.
income notifications
When someone enters the home, a notification will be sent.