# Object-Oriented Programming
# Semester 2025 II
# Domotic Circuit Simulation

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## User Story

| **Title:** Circuit Creation and Simulation Management | **Priority:** High | **Estimate:** 8 |
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| **User Story:** As an electronic engineering student, I want to manage and manipulate electronic components to build and test my circuits so that I can verify their functionality and learn how real circuits behave. | | |
| **Acceptance Criteria:**<br>● Find all available components and modify their electrical values.<br>● Given I have selected a component from the list, When I drag and drop it onto the board, then the component must appear on the simulation area and be ready to connect.<br>● Given two or more components are placed on thewhen, When I connect them using virtual jumpers or cables, Then the system must link them correctly, forming a valid circuit path. Given a component is selected on the board, When I press the T key, Then the component must rotate, changing its orientation.<br>● Given a component is selected on the board, When I press the D key, Then the component must be deleted from the circuit.<br>● Given a component is selected on the board, When I press the S key, Then the system must create an identical copy of that component.<br>● Given a component is selected on the board, When I press the **N** key, Then I must be able to assign or edit a custom name for that component.<br>● Given I am working on the circuit design, When I click the MONITOR button located at the bottom-right corner, Then the system must show a table with real-time voltage or power variations for the selected nodes.<br>● Given I have made changes to my circuit, When a certain time passes or the user stops interacting, Then the system must automatically save the progress.<br>● Given I attempt to make an invalid or impossible connection, When the system detects it, Then it must display a warning message explaining the issue.<br>● Given I start the simulation, When the circuit runs, Then the monitor table must update continuously with voltage and current values at the selected points. | | |