

HomiTech - Smart Home Simulator



The Team

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Problem statement

- **Problem:** inefficient management of connected devices in a smart home
- **Impact:** suboptimal utilization of smart home capabilities
- **Affected:** homeowners and users struggling with managing multiple devices



Solution Overview

- Centralization of smart home devices
- Graphical representation of home and connected devices
- Automation of household tasks
- Simplified interaction between heating, lighting, and ventilation devices



Benefits

Reduced energy consumption

Remote monitoring



Automation

Improved Security


Main Features:

Dashboard

- Display Profile Details
- Display all modules
- Display Console Output
- Display HouseLayout

Smart Home Simulator

Off ☒ On



Parent

Location:
Entrance

Outside Temperature:
20

1/2/2023
01:12:25



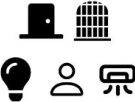






Time Speed:
 1x

SHS SHH SHC SHP

[Add Profile](#) [Edit Profile](#) [Remove Profile](#)

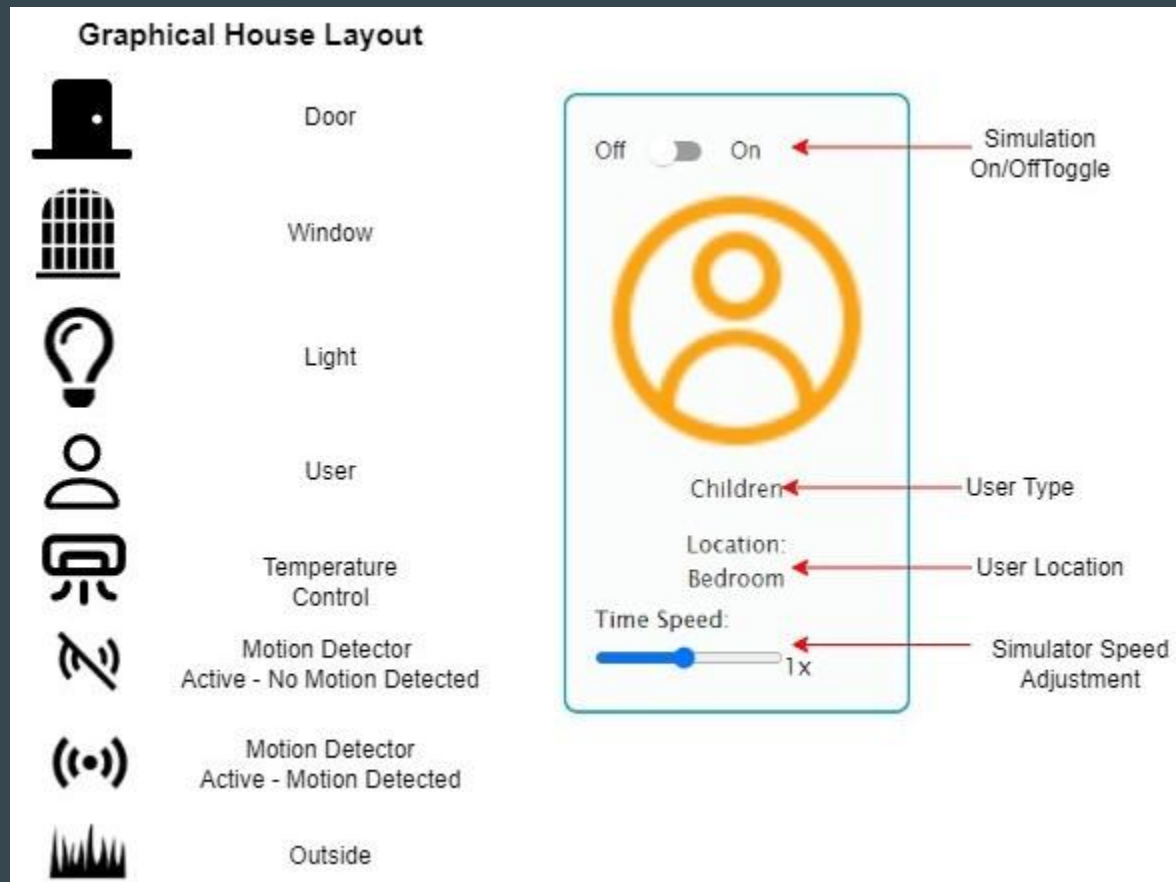
[Select Profile](#) [Logout](#) [Upload CSV](#)

Profile ID: 1
Profile Name: a@b
Role: 1
Event Type: Motion Detectors
Event Description: User Removed Motion Detector From Entrance
Timestamp: 1/2/2023 00:50:04
Profile ID: 1
Profile Name: a@b
Role: Parent
Event Type: Time To Call The Police
Event Description: User Just Set a Time To Call the Police in 22

Backyard BLOCK WINDOW 	Backyard BLOCK WINDOW 	Backyard BLOCK WINDOW 
Garage BLOCK WINDOW 	LivingRoom BLOCK WINDOW 	Bedroom BLOCK WINDOW 
Backyard BLOCK WINDOW 	Entrance BLOCK WINDOW 	Backyard BLOCK WINDOW 

Main Features :

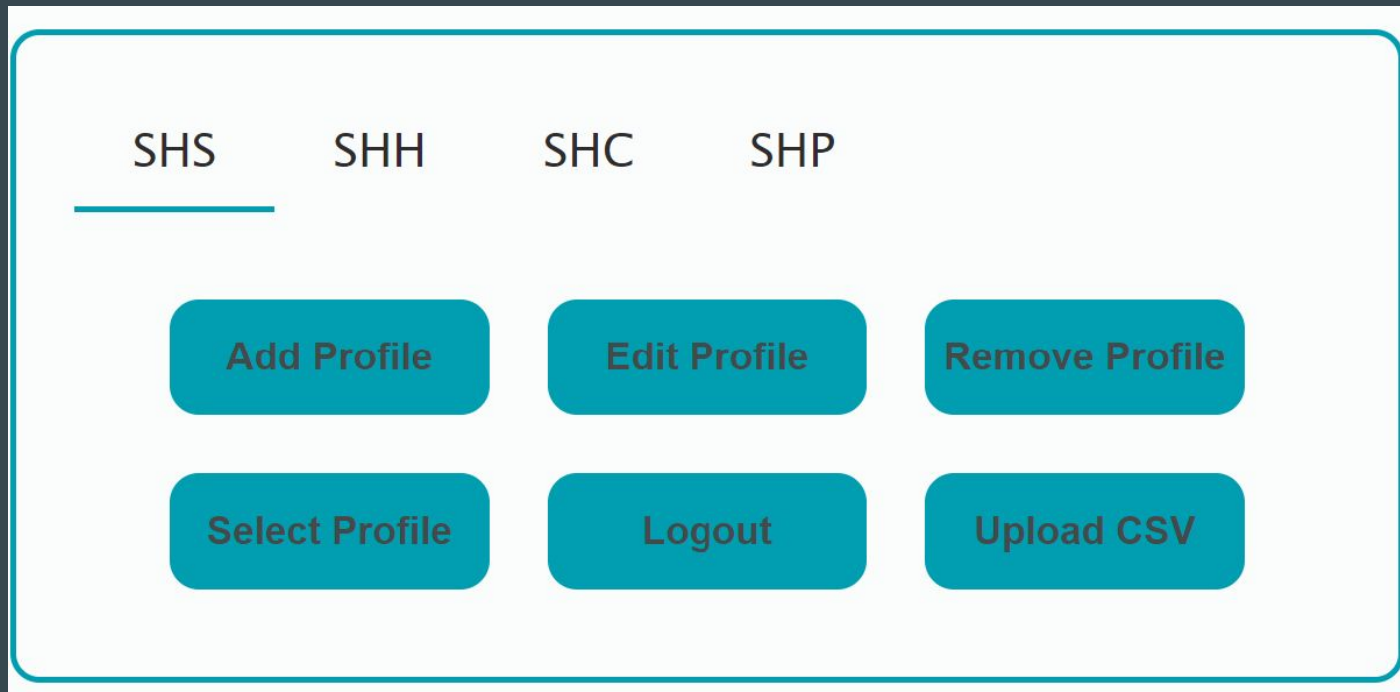
Dashboard Legend



Main Features:

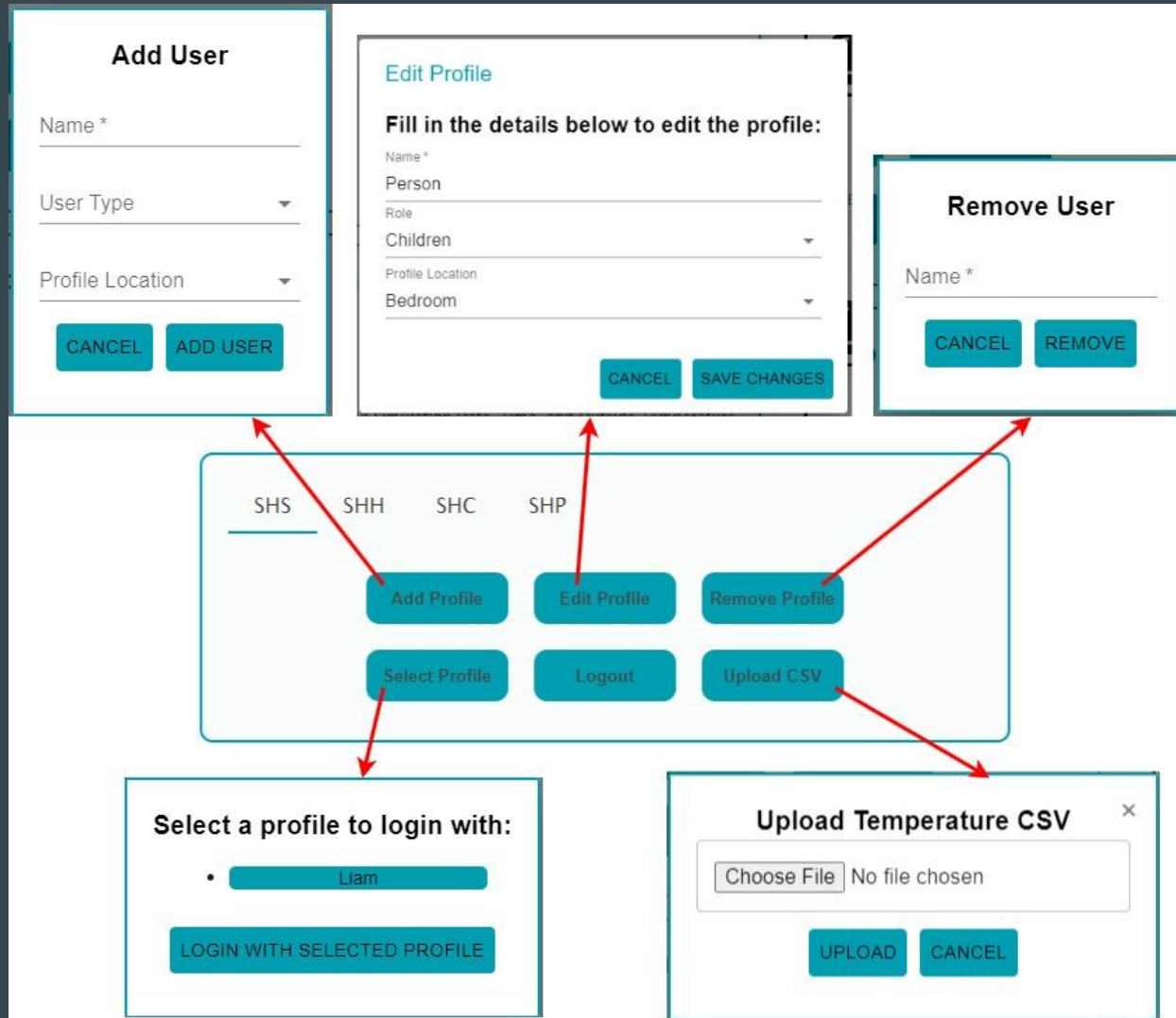
SHS Tab

- Add/Edit/Remove/Select Profile
- Logout
- Upload a CSV for date,time and temperature



Main Features:

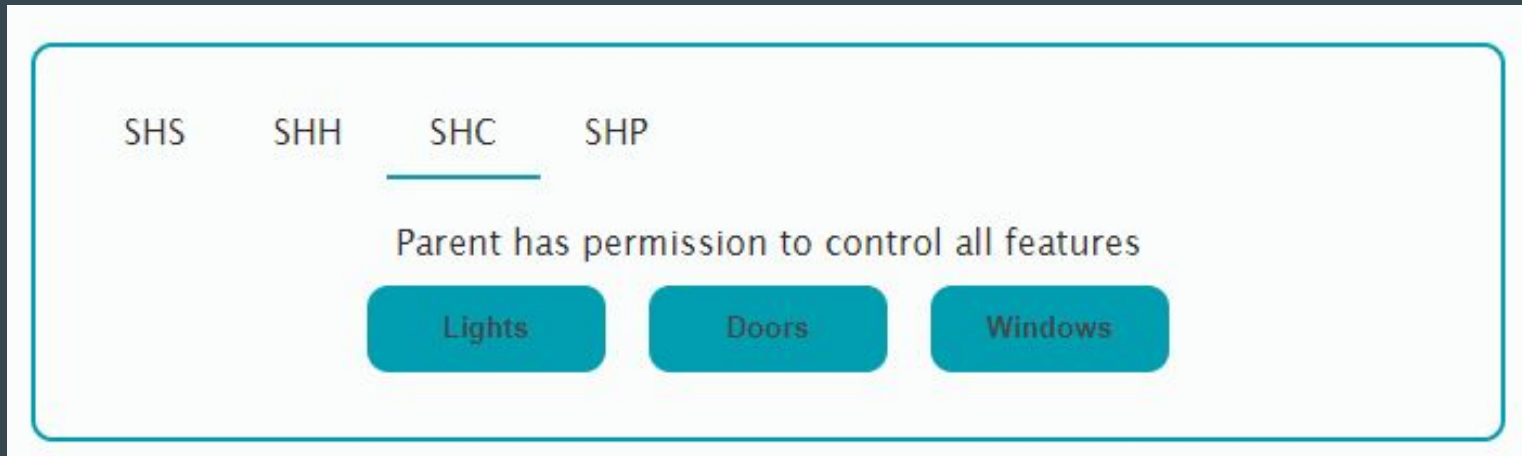
SHS Tab Detailed View



Main Features:

Core Functionality Module

- Control windows/doors
- Lights
- Auto mode



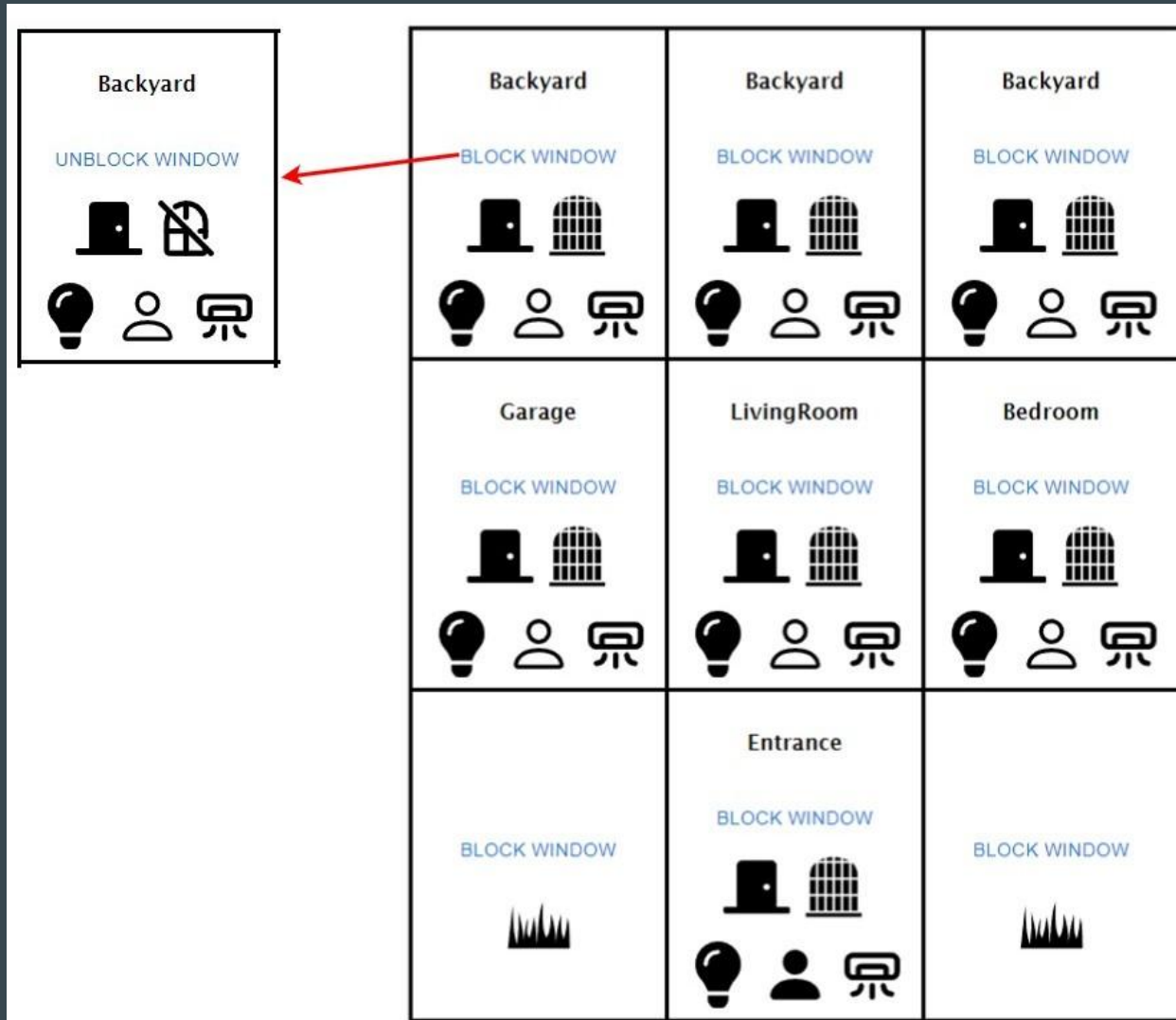
Main Features:

Core Functionality Module Detailed View



Main Features:

Core Functionality Module



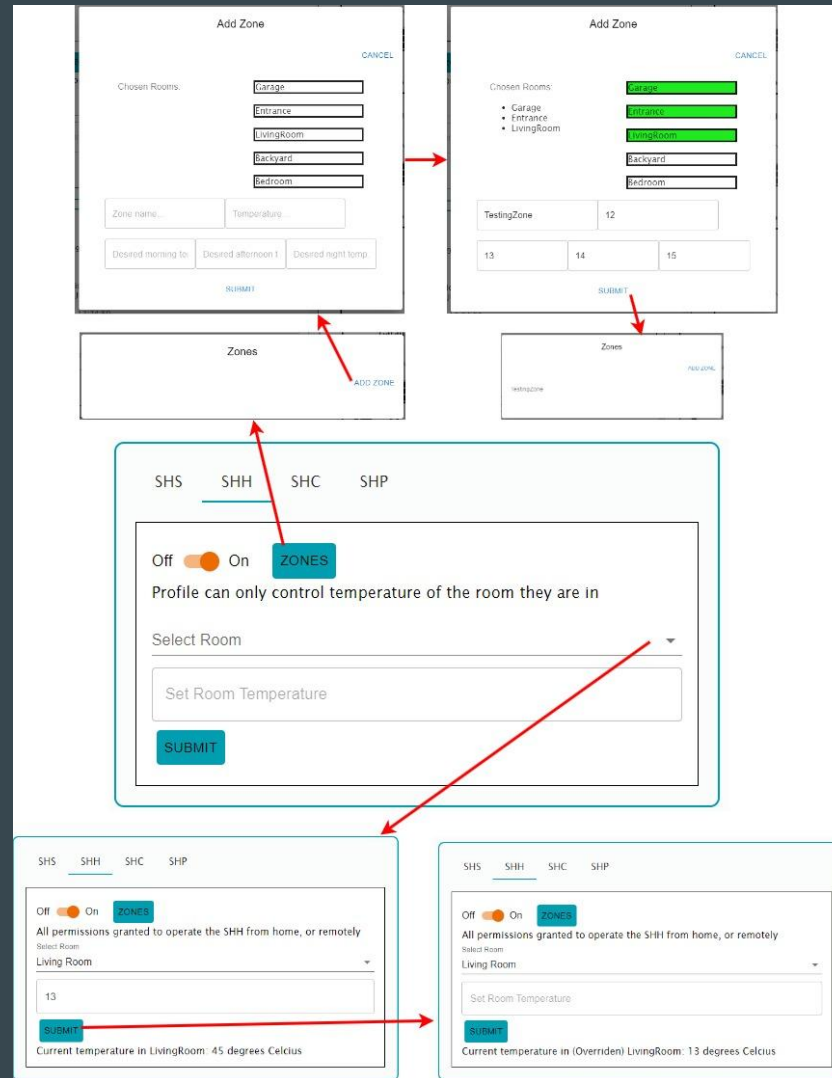
Main Features: Heating Module

- Zone-based temperature control
- Motion-based monitoring
- Temperature monitoring
- Alerts for unusual behavior

The screenshot displays a web interface for the Heating Module (SHH). At the top, there are four tabs: SHS, SHH (which is selected and underlined), SHC, and SHP. Below the tabs, there is a toggle switch labeled 'Off' and 'On' with an orange circle in the middle. To the right of the toggle is a blue button labeled 'ZONES'. Below the toggle, there is a text description: 'All permissions granted to operate the SHH from home, or remotely'. Underneath this is a dropdown menu labeled 'Select Room' with a downward arrow. Below the dropdown is a text input field with the placeholder text 'Set Room Temperature'. At the bottom left of the form is a blue button labeled 'SUBMIT'.

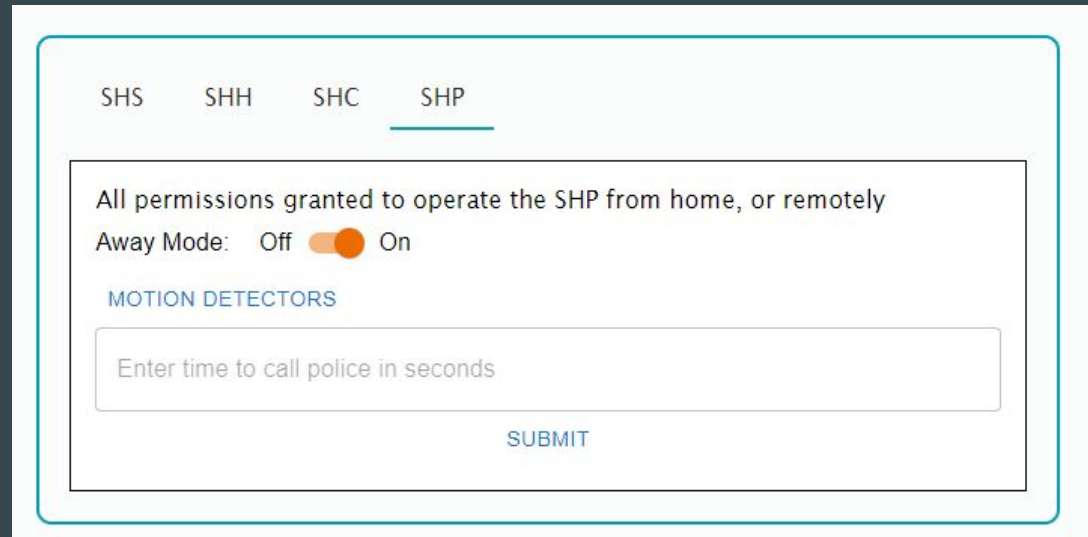
Main Features:

Heating Module Detailed View



Main Features: Security Module

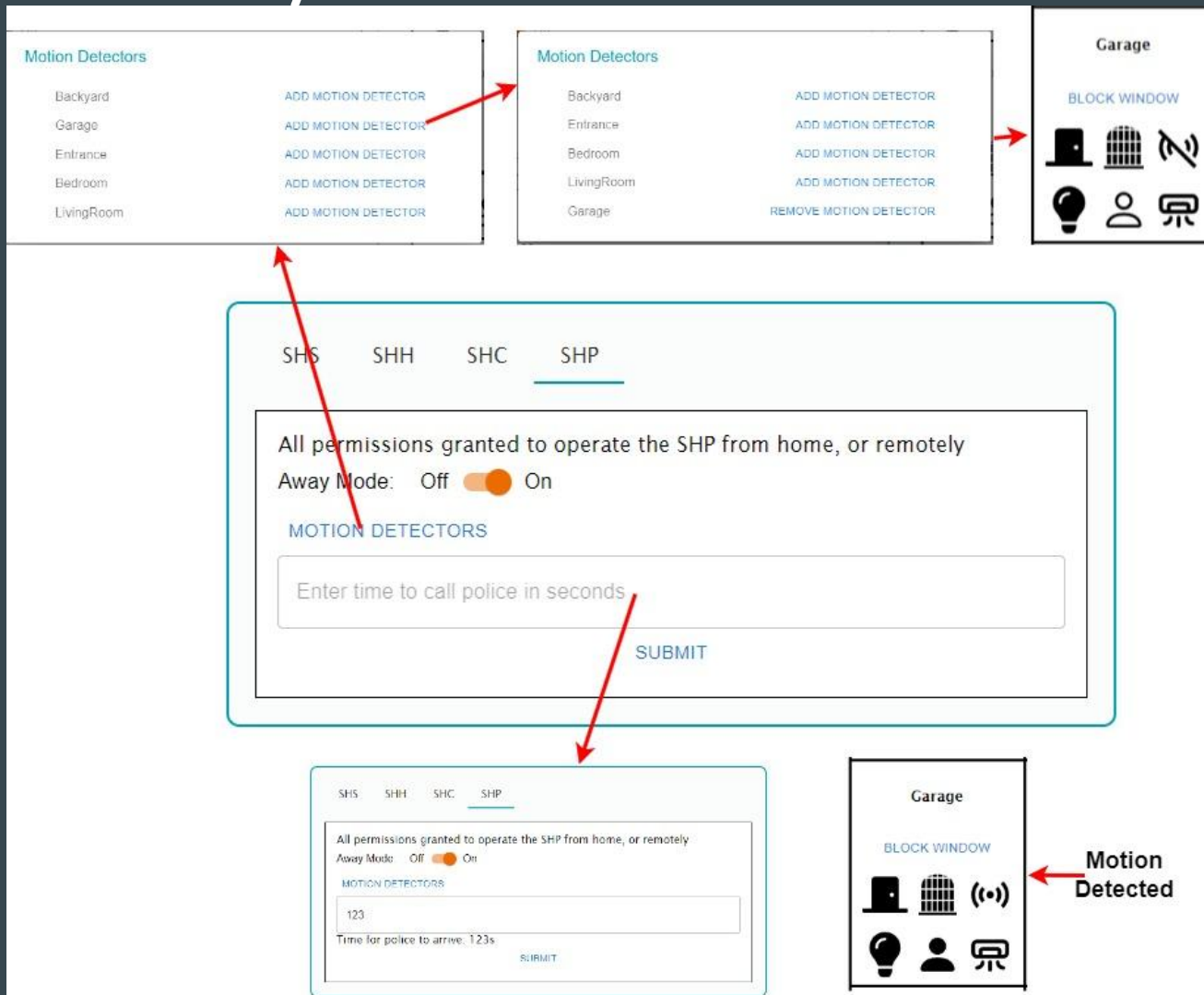
- Away mode
- Alert notifications
- Motion detection



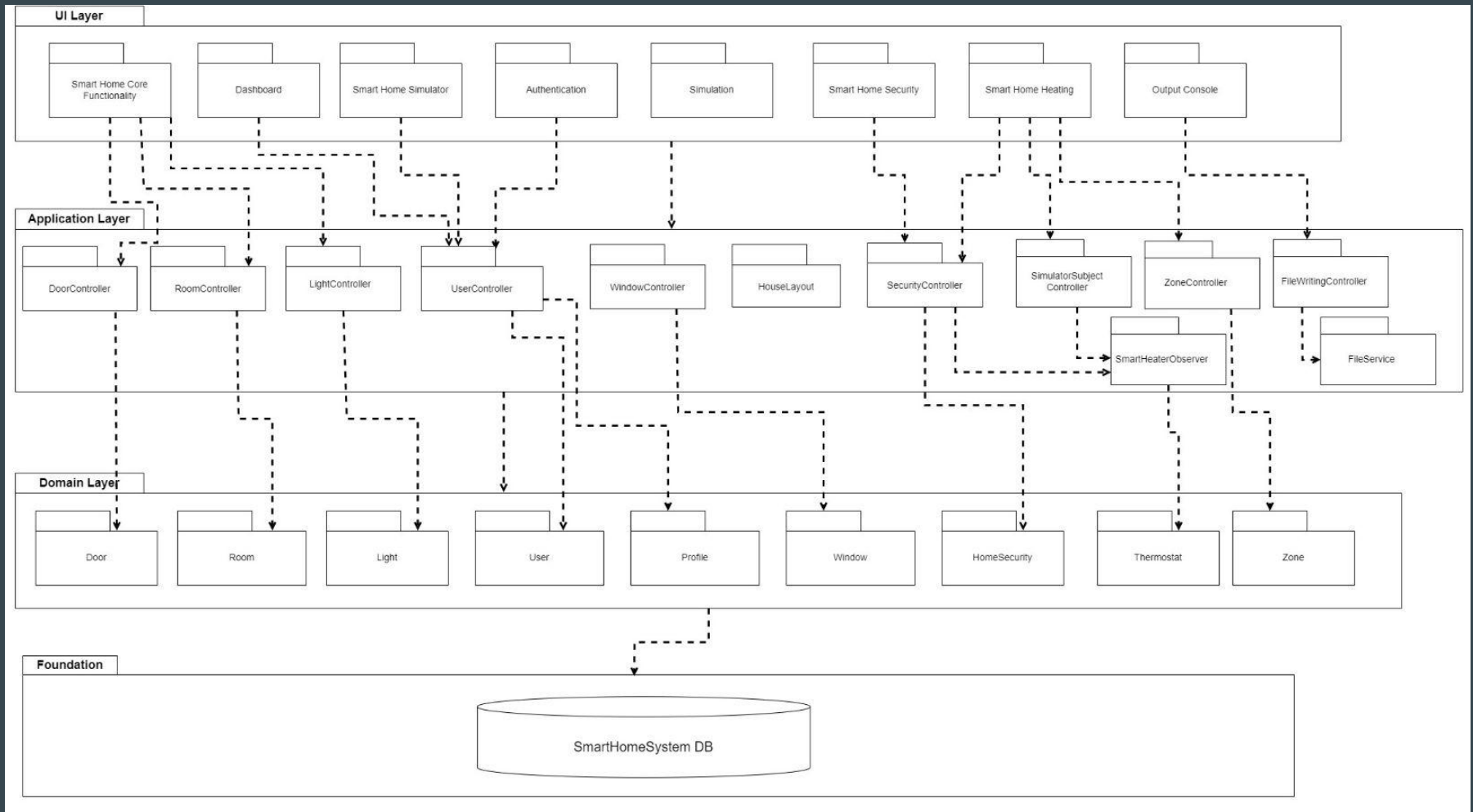
The screenshot displays a web interface for a security module. At the top, there are four tabs: SHS, SHH, SHC, and SHP. The SHP tab is currently selected, indicated by a teal underline. Below the tabs, a message states: "All permissions granted to operate the SHP from home, or remotely". Underneath this, the "Away Mode" is shown as a toggle switch, currently set to "On" (the orange circle is to the right of the "Off" label). Below the toggle, the text "MOTION DETECTORS" is displayed in blue. A text input field follows, with the placeholder text "Enter time to call police in seconds". At the bottom right of the form, there is a blue "SUBMIT" button.

Main Features:

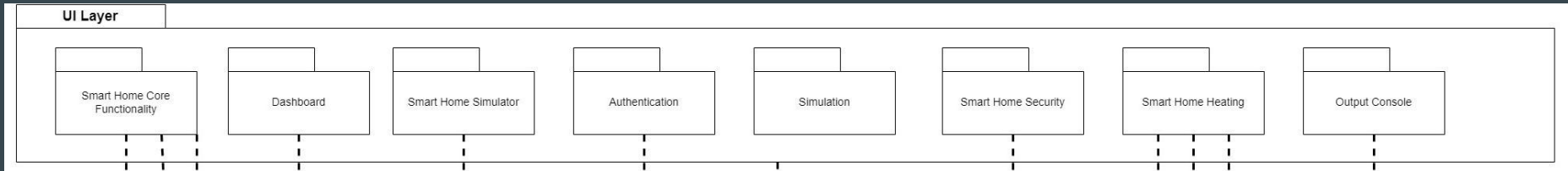
Security Module Detailed View



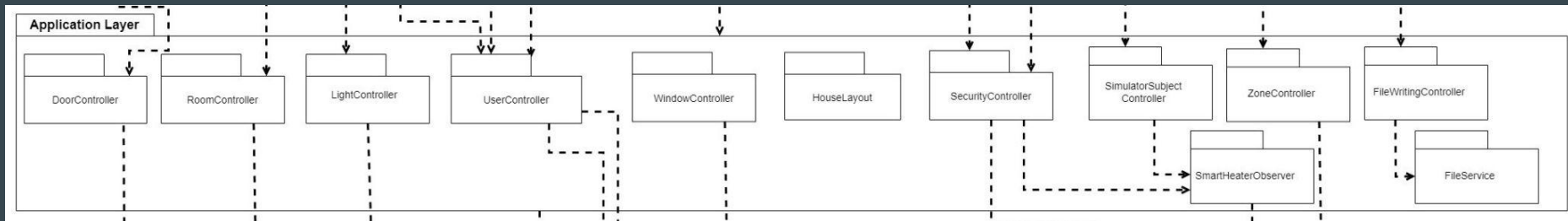
Architecture - Layered



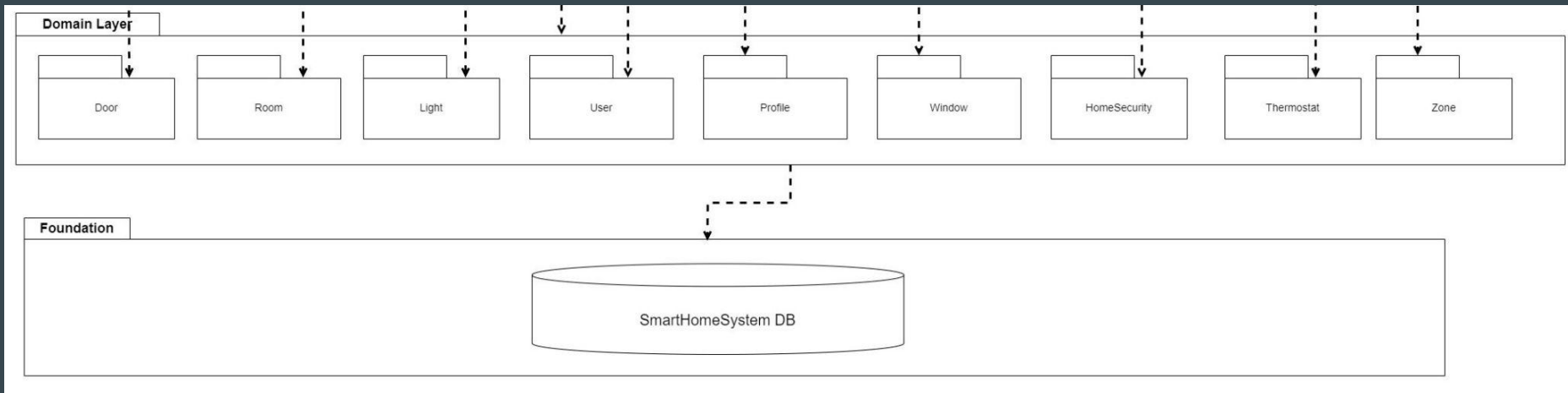
UI Layer



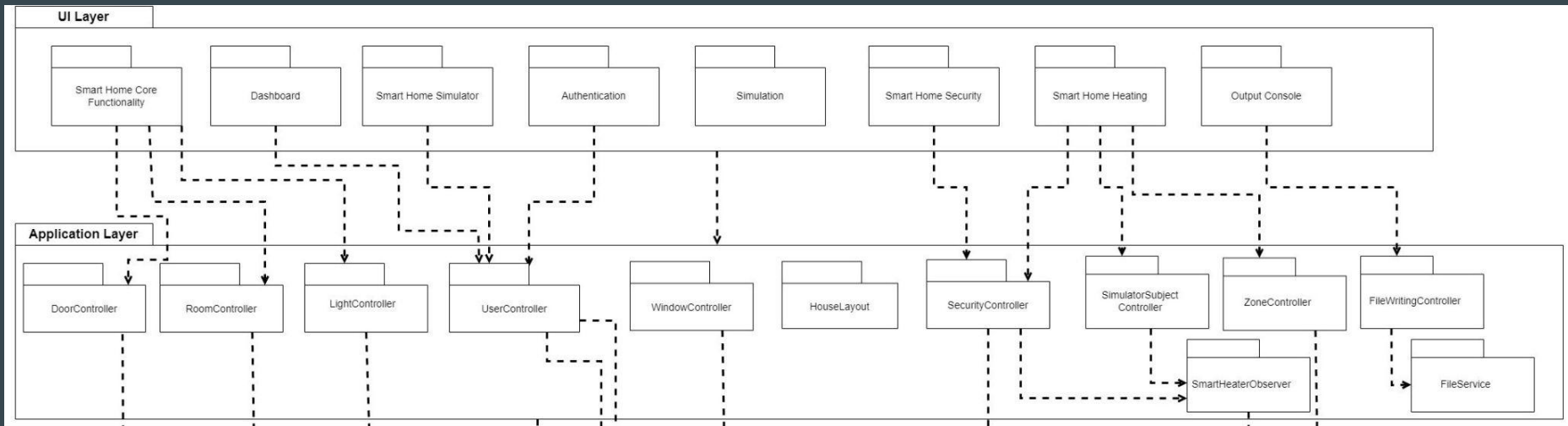
Application Layer



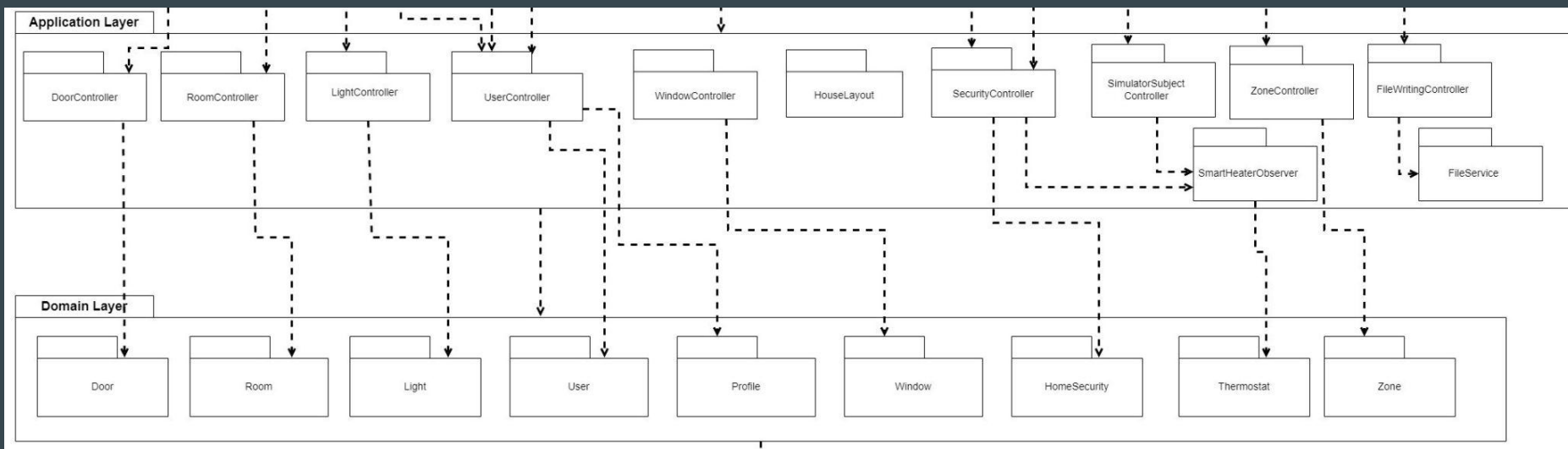
Domain and Foundation Layer



UI and Application Layer Relationships



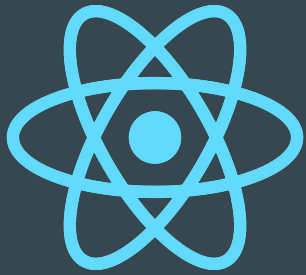
Application and Domain Relationships



Product Overview:

Languages and Frameworks

Frontend: ReactJS Framework, Vite, TypeScript, CSS



Backend: Java, Spring Boot framework, PostgreSQL



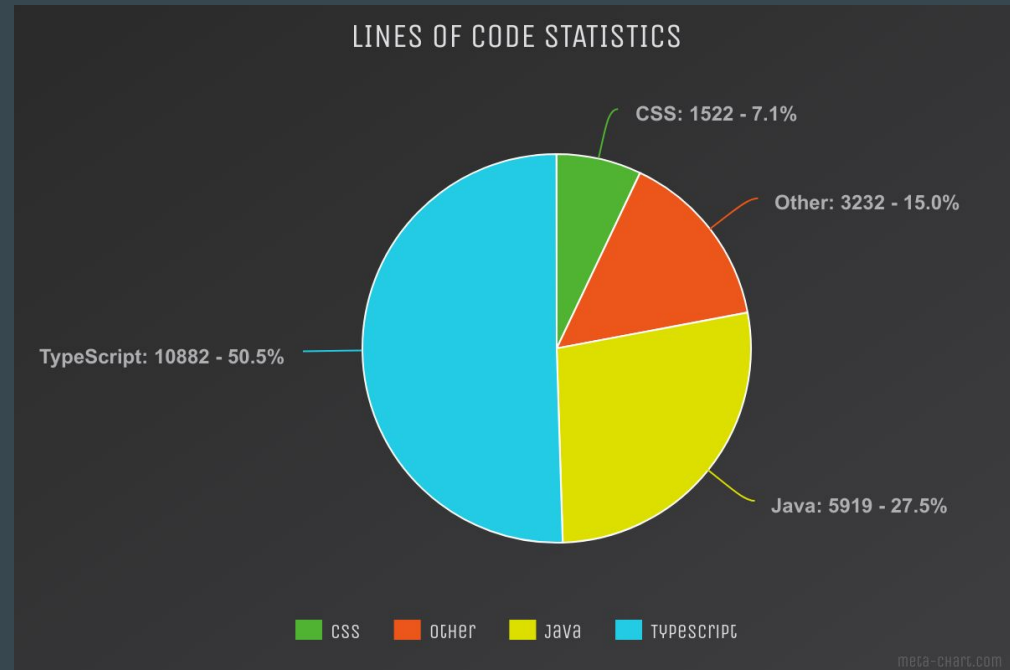
Product Overview: Lines Of Code

Total Lines: 25655

Blanks: 3567

Comments: 533

Lines of Code: 21555



Demo

- SHP Module Functionality

Thank You