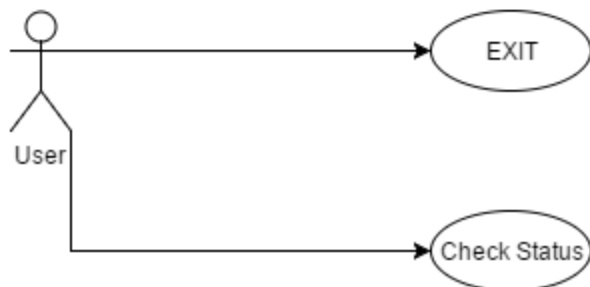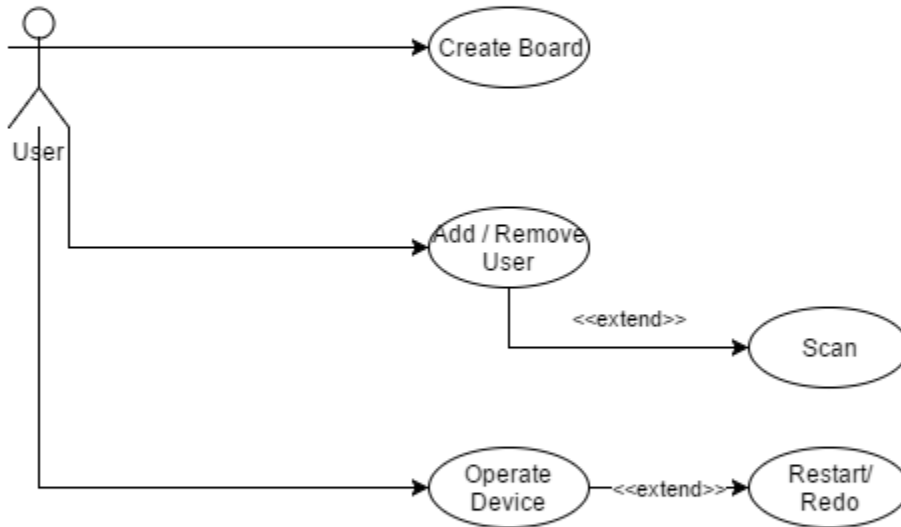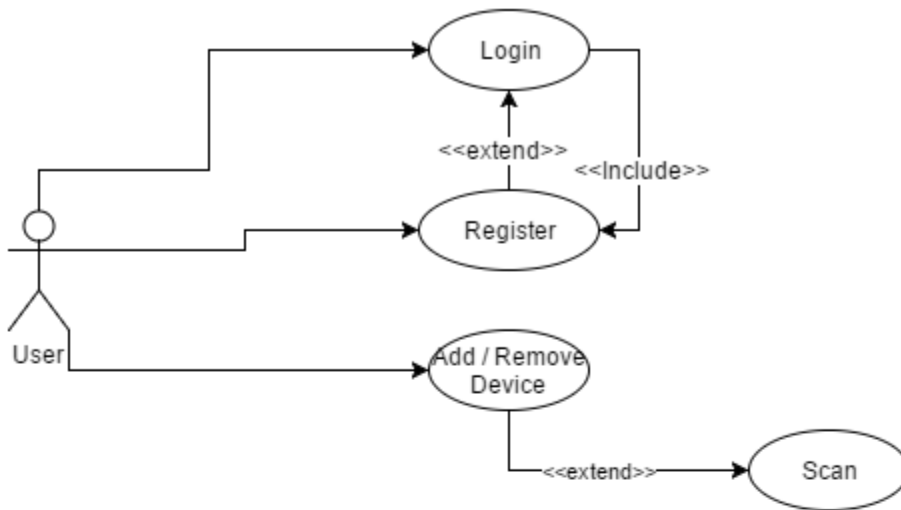**Functional Requirements**

A Smart home control system (SHCS) is a system which is controlled by a mobile phone application or a web application, and at the same time controls, monitors and coordinates home appliances such as air conditioner, microwave oven, garage doors, TV , indoor/outdoor lights, home security system, etc.

In order to activate home appliances and to allow use of home appliances, the SHCS needs mechanisms for communication between the different devices in the system, and for coordination among the various processes running on such devices.

Use Cases

- Login
    - The use case Login enables users to enter SHCS
- Register
    - The use case Register enables anyone to make an new account within SHCS
- Add/Remove Board
    - The use case Add/Remove Board enables users to add a new board or remove an existing board.
- Add/Remove User
    - The use case Add/Remove User enables users of type admin to add or remove other users to use their board.
- Add/Remove Device
    - The use case Add/Remove Device enables users to add or remove devices into/from board in SHCS
- Operate Device
    - The use case Operate Device enables users to operate on any device connected in SHCS
- Scan
    - The use case Scan is an extension of the use cases Add/Remove Device and Add/Remove Users and it capable to find devices and users connected to SHCS.
- Restart/Redo
    - The use case Restart/Redo is an extension of the use case Operate. When the SHCS could not conduct the command that the user sent, it shall detect and fix the error or restart the device to make it function normally. And the operation will be conducted once more. Besides, the SHCS shall inform the user about this exception.
- Check Status
    - The use case Check Status means that the SHCS keeps a record of the state of all the connected devices. It keeps updating their states from time to time. When users require the state information of some device through remote systems, the SHCS send the latest state of that device to the remote system that requested.
- Exit
    - The use case Exit enables any user to exit SHCS

Use Case diagram

Use Case Table

No.	Actor	Use Case Name	Goal
1	User	Login	Allow user to have access on his SHCS account
2	User	Register	Allow anyone to create an new account on SHCS
3	User	Add/Remove Board	Allow user add a new board on his account or remove an existing board from SHCS
4	Admin user	Add/Remove User	Allow user of type admin to add other users on his own board.
5	User	Add/Remove Device	Allow user to add/remove any device into/from SHCS
6	User	Operate Device	Allow user to use any device connected to SHCS
7	User	Scan	Allow user to search users or devices connected to SHCS.
8	User	Restart/Redo	Allow user to redo an operation occurred previously on a device or restart a device if device couldn't conduct the user command.
9	User	Check Status	User can have information on all devices connected to SHCS recent status.
10	User	Exit	Allow user to exit from SHCS.