PRODUCT DESIGN DOCUMENT   
  
  
Problem Statement : **IoT Customer Management**

**Statement of Goals :** The IoT Service Provider wants to set up an Apartment Complex hierarchy.  
As a Service provider, he should be able to set up the dynamic hierarchy and manage it efficiently

**Intended Audience :** End users who are IoT Service providers to make an Apartment Complex and manage it efficiently**.**

Assumption

1) For UI – A frontend application needs to be created that would do the following task:

i) After creating Apartment, the Block field would be enabled  
 ii) After creating Block, the Floor field would be enabled  
 iii) After creating Floor, the Door field would be enabled

2) We would delete the Apartment with all its hierarchy directly, we would not delete its children like block, floor, door before deleting the Apartment.  
So UI would have a field to delete the whole Apartment.

3)H2 Database is used so initially all the tables would be empty.

Functional Description  
The Product lets the user to create an Apartment hierarchy and manage it.  
Steps to create an apartment :  
  
Step 1) User first create the Apartment (by providing “apartment\_d” and “apartment\_name”).  
  
Step 2) User then creates the block corresponding to that particular apartment (by providing “block\_id” ,corresponding apartment’s “apartment\_id” and “block\_name.

Step 3) User then creates the floor corresponding to that particular block (by providing “floor\_id”, corresponding block’s “block\_id” and “floor\_name”).

Step 4) User then creates the door corresponding to that particular block (by providing “door\_id”, corresponding floor’s “floor\_id” and “door\_name”).

Please refer below the class diagram for the relationship and hierarchy among each other:

The creation would be from ApartmentBlockFloorDoor  
Deletion would be only from Apartment.  
  


User Interface  
Exposed endpoints are :  
1) UI - [**http://localhost:8080/swagger-ui.html**](http://localhost:8080/swagger-ui.html)2) H2 Console **-** [**http://localhost:8080/h2-console**](http://localhost:8080/h2-console)

Future Scope:  
1) Individual children can also be deleted without deleting the parent(bidirectional relationship)  
2)An UI for the above backend

VERSION  
The version of the document is V2.