

# Indoor Map System

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Advised by

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# Introduction and Background

**As** smartphone and wireless internet access becomes popularized, the demand of smartphone utility applications has grown rapidly for the last decade. It is clear that the navigation application is the world's deep hunger.



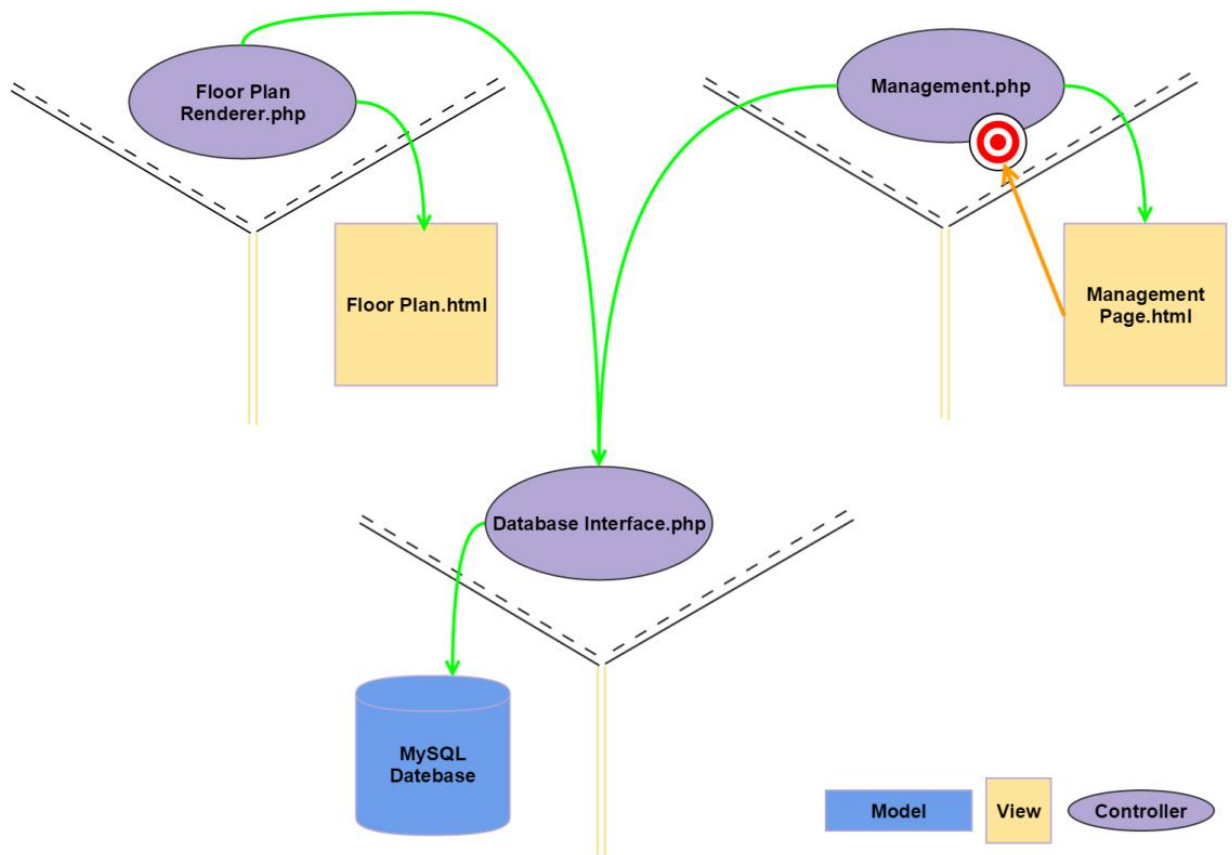
**However**, taking a closer look, the indoor map side is still very much untouched and is open for new applications to come in. In Hong Kong, all shopping malls have certain kind of indoor map. **If a shopping mall wants an indoor map system, it has to make its own from ground zero.**

This **Indoor Map System** is developed to cater such gapping. This **HTML5** based system provides users to create their own 3D map in no time!

## Objectives

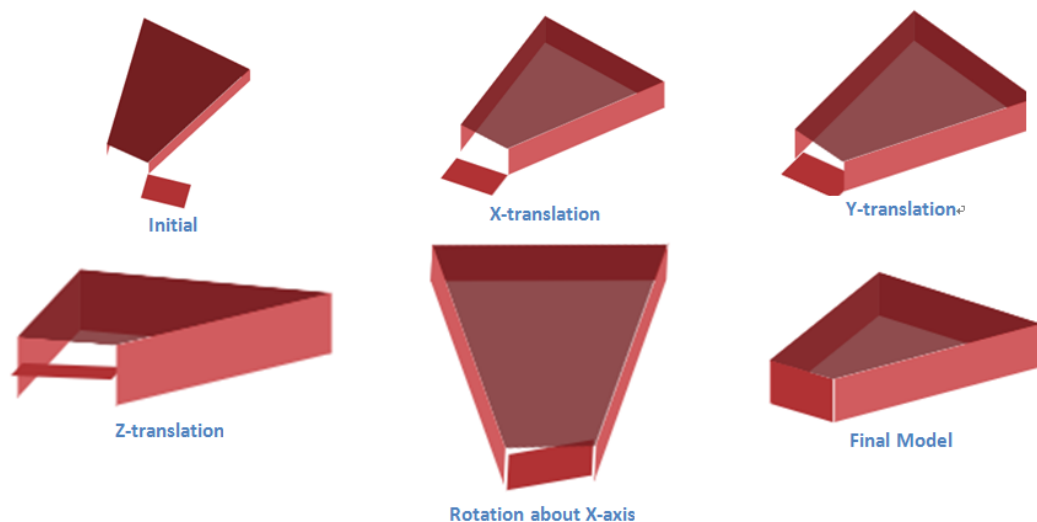
- **Provide** a **management system to input and modify the data** and set of the indoor map database
- **Generate** an **interactive indoor map webpage** according to the data in indoor map database
- **Prove** the indoor map system works by **applying it to a physical building**

The diagram shows a brief **MVC** design of the system:

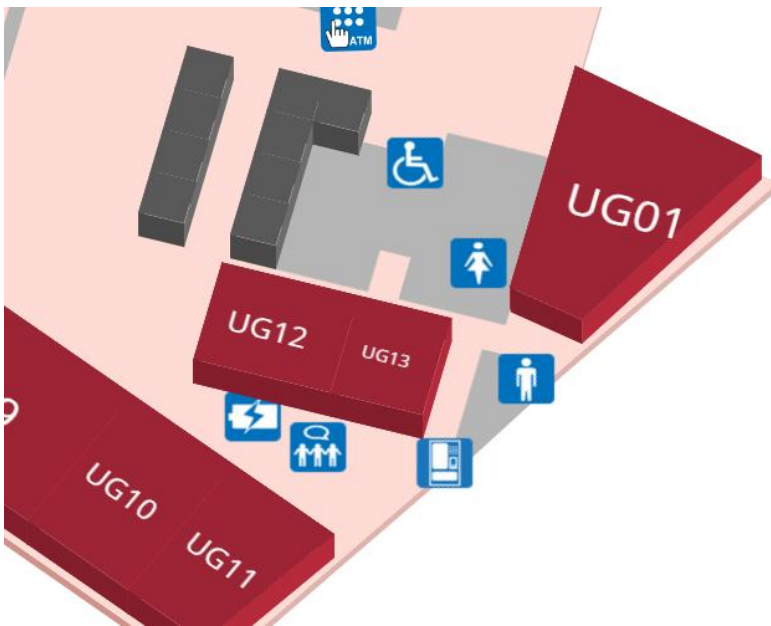


## Polygon 3D Modeling in HTML

The basic idea of constructing 3D model is as similar as making a paper dice. Some of the sides will be flipped upward in order to construct the height of the dice. Similarly, some of the 2D elements will be “flipped” in certain degrees so to form the height of a 3D model. Such “flipping” is actually a **transformation process**, rotation and translation, held within a 3 dimensional spaces.



# 3D Floor Plan Viewer

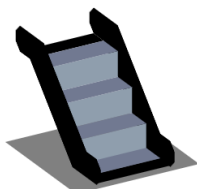
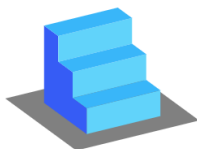


The picture at the left is the result after rendering. The 3D map included different objects. Those objects are: **Room, Lift, Stair, Lift, Escalator and Legend.**

## Customizable 3D Map Objects

All the 3D objects are **customizable** in the map making system. This provides **flexibility** to users for creating their **own desired 3D map**.

### Access



Lifts	
Top:	<input type="color" value="#ff0000"/>
Side A:	<input type="color" value="#ff0000"/>
Side B:	<input type="color" value="#ffa500"/>

Stairs	
Main:	<input type="color" value="#0000ff"/>
Step A:	<input type="color" value="#00bfff"/>
Step B:	<input type="color" value="#00bfff"/>

Escalators	
Main:	<input type="color" value="#000000"/>
Step A:	<input type="color" value="#808080"/>
Step B:	<input type="color" value="#808080"/>

Update