Design

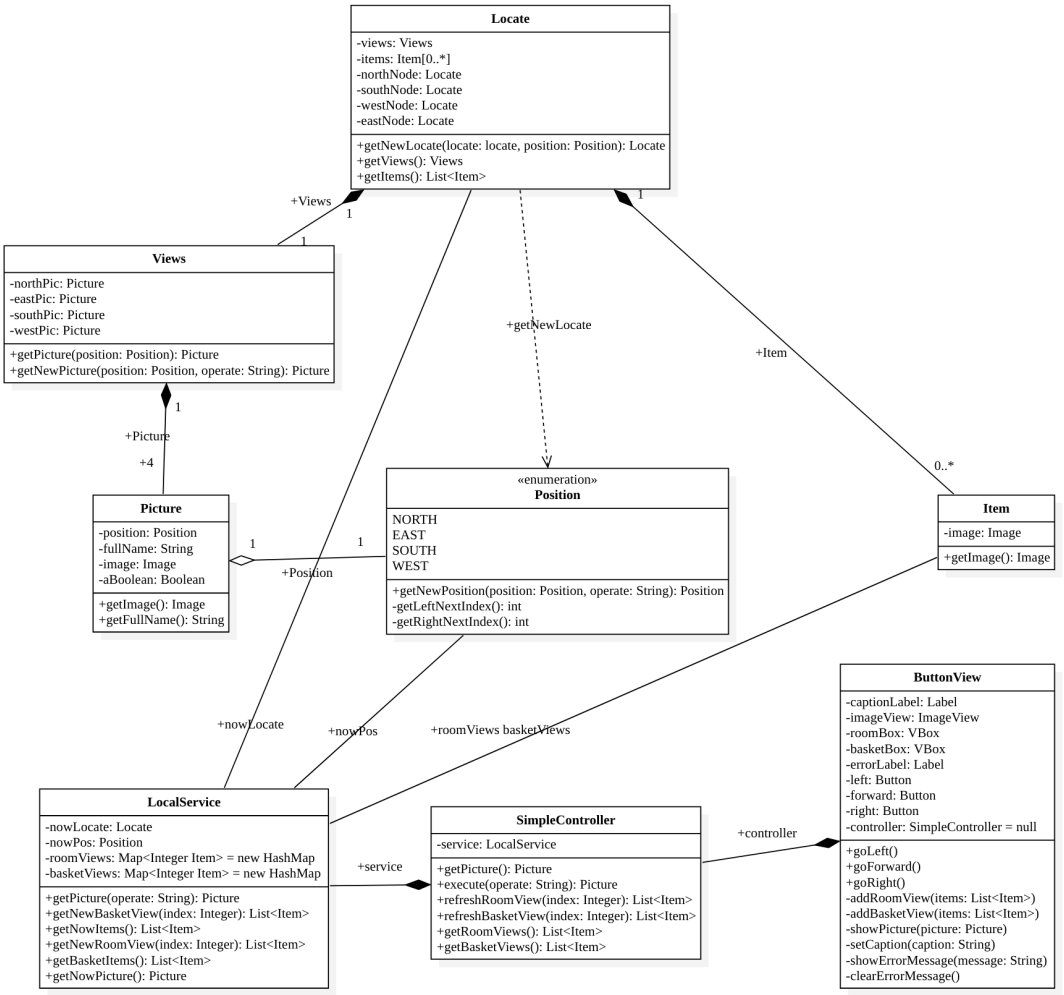
Explain of Class Diagram:

Locate is a class used to describe the characteristics of my bedroom, washroom and kitchen. Each room must have and only one coordinate point (selected from the relatively centered coordinate). The set named Views contains four pictures taken from this coordinate point in four directions. If one of the four pictures in Views exists, the others will also exist. The three attributes of fullName, image, and position contained in the Picture correspond to the full name of the picture, the position of the picture and the description of the direction respectively. Among them, Position is of Enum type where there are only four values used to describe different directions. Item is a description of the items (cats, dogs, etc.) in each room.

Locate includes methods to look for the next room based on the current room and its directions, Views provides methods based on the direction and the user's operation (left, right or forward) to obtain a Picture, and Position provides methods to obtain a new Position based on the current direction and the user's operation. Meanwhile, the method provided by Position is very important and called by a few other methods in the program.

LocalService, SimpleController and ButtonView jointly participate in and implement a complete interactive interface including functions.

Class Diagram:



Explain of Sequence Diagram:

The entire program starts from the Event One (1) which is the initialization process, including the creation of SimpleController and LocalService objects (2, 3) and the drawing of the initial interactive interface (4).

The Event Five (5) is the calling process of each component in the program when the user clicks “left” on the interactive interface to trigger the function of turning left. The request is sent by ButtonView to SimpleController (6) and then forwarded to LocalService for processing (7) and the program returns and displays the Picture step by step (8, 9). The logic of turning right is the same as that of turning left, therefore, there is no repetitive representation in the figure.

The Event Ten (10) is the calling process in the program when the user clicks forward on the interactive interface to trigger the function to switch rooms. The same as goLeft is that it should take out the new Picture for display (11-15). In addition, it also needs to obtain items (cats, dogs, etc.) in the new room for display (16-20).

The Event Twenty-one (21) is the calling process of each component in the program when the user clicks on the item pictures on the interactive interface to trigger the pickup function. The item pictures on the room interface are reduced (22-25) and redrawn (26), and then the items in the basket which is on the right side of the interface will be added (27-30) and redrawn (31).

Sequence Diagram: