Team redpanda: Sprint0

University of Toronto Mississauga, CSC207 Assignment 3

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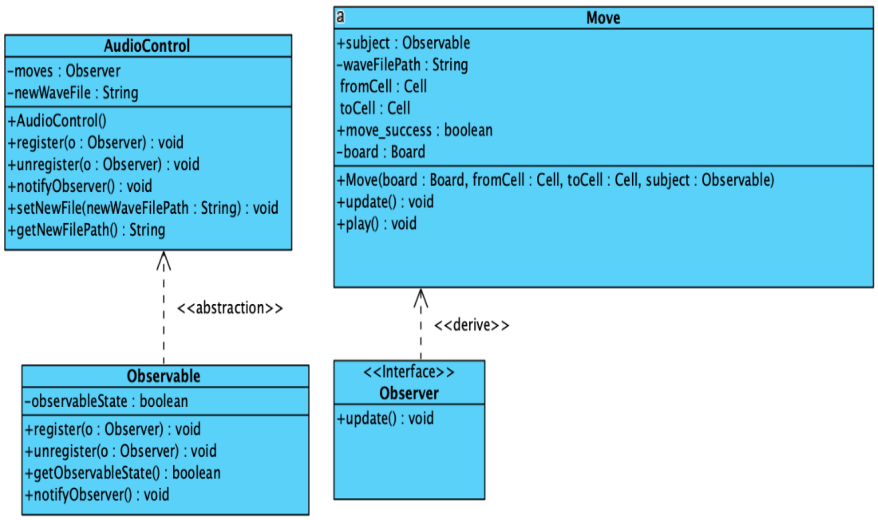
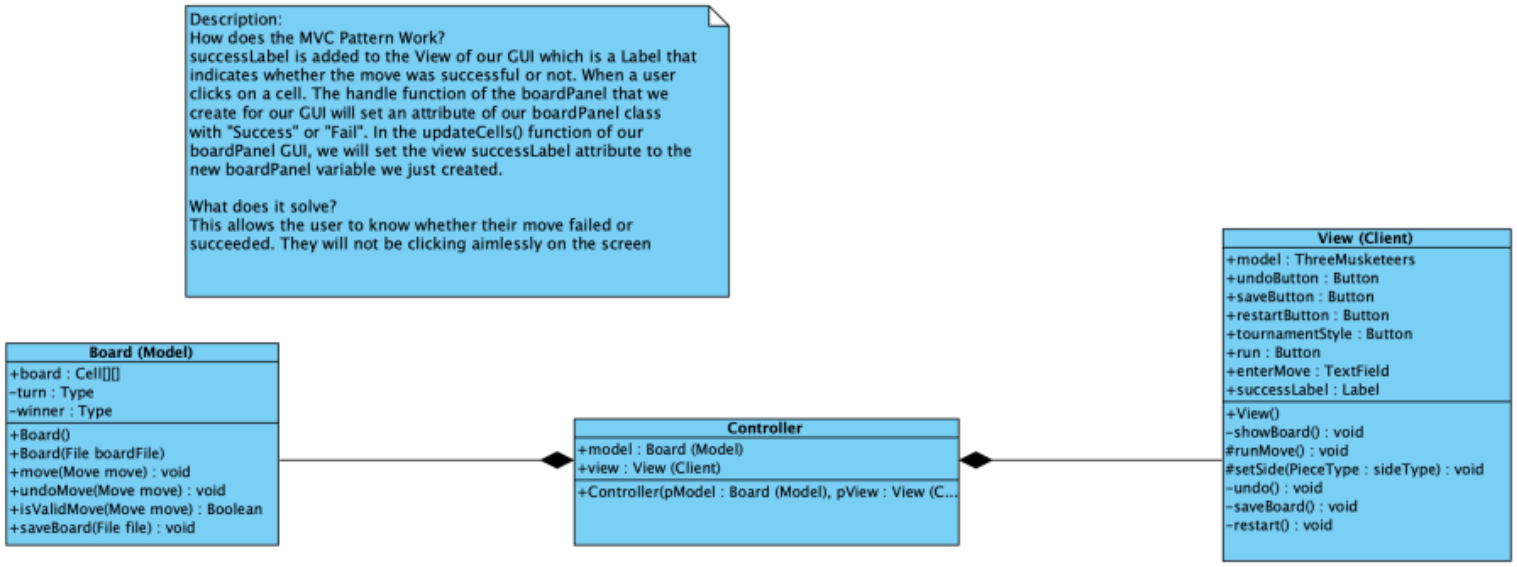
1. Observable pattern



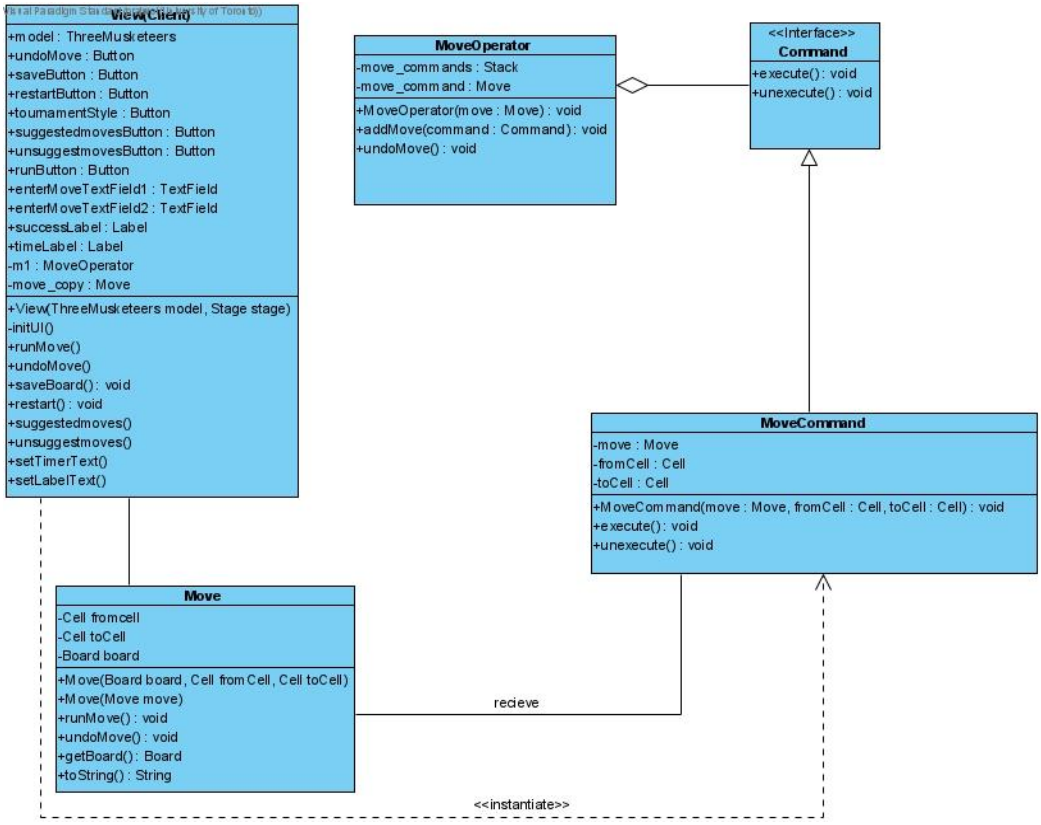
Description:
How does the Observer Pattern Work?
The Observable AudioControl updates each Move by updating its waveFilePath attribute with the String path present in the Observable newWaveFile attribute. It does so by calling notifyObserver()

What does it solve?
It simply adds entertainment value to the game, as most games have sounds. Whenever any piece on the board moves, a sound is made.

2. MVC pattern



3. Command Pattern

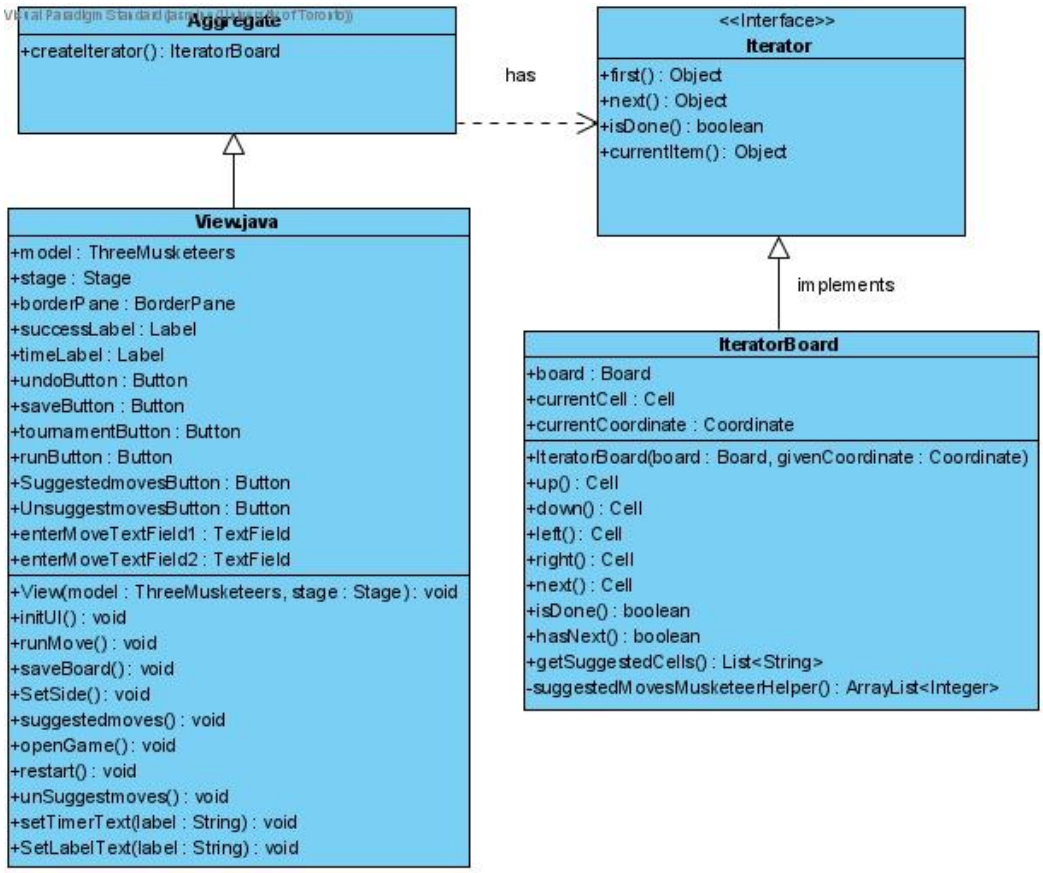


What does it do :
The Command Pattern is used here to run and undo move commands in the board.

How does it work:
Here, the view(client) asks for a command to be executed when the user presses the buttons, run or undoMove. Then, a MoveCommand is created from the user inputs. The MoveOperator(Invoker) takes the new MoveCommand, encapsulates it, adds it to the move_commands list and calls the execute method and then the Move class performs the operations. When the undo operations are called the invoker removes the last performed move.

What does it solve:
It allows for encapsulating the commands and storing them in a list, or undoing the last command.

4. Iterator Pattern

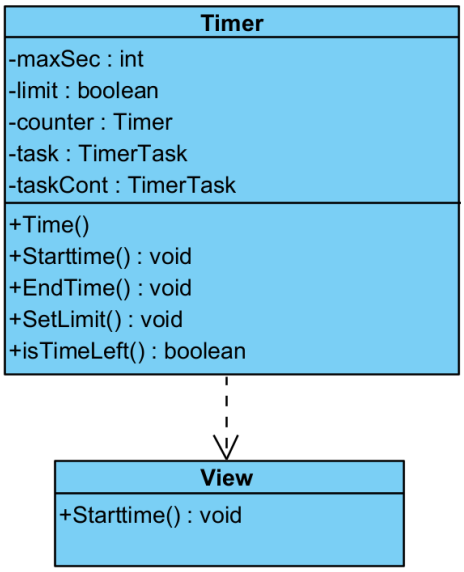


Description:
What does it do?
The Iterator Pattern allows the traversal of the board using a pointer, whict is a Cell in the board.

How does Iteration Pattern Work?
When initialized, the IteratorBoard class has a Board object and Coordinate Object. In the constructor, the current Cell is derived using the current Coordinate. For each method that takes a Piece, Cell, Coordinate, currentItem returns that Cell and next returns the next Cell. In addition, for a given Piece in the board, the function getSuggestedCells() return a List of strings that contain the Coordinates (i.e. A4) of the suggested Cells that the current Piece can move to. In general, the Iterator pattern contains methods that allow traversal of a Collection (i.e. first(), hasNext(), next()).

What does it solve?
It allows the user to get suggestion(s) for their next move for the Coordinate

5. Singleton Pattern



Timer Implementation

What does it do?

The timer counts up from 0 seconds, and continues to count until instance of game is over. Shows the total seconds on GUI.

How does the singleton pattern work?

It simply starts with the creation of the timer object in the timer class, which would have many functions that will be implemented. The view class would contain the GUI elements that would use the Starttime() function to run the instance of the time object to display on the user interface.

6. Prototype Pattern