

Assignment-3

Sequence diagram of Tetris game

Description:

A sequence diagram is that depicts a particular scenario of a use case, the events that external actors generate, their order and possible inter-system events.

The above sequence diagram has instances such as clock, player, game control, game board, tile and information panel.

The clock cycle begins and the tile starts falling from the top.

First the control enters into the first loop and performs following functions:

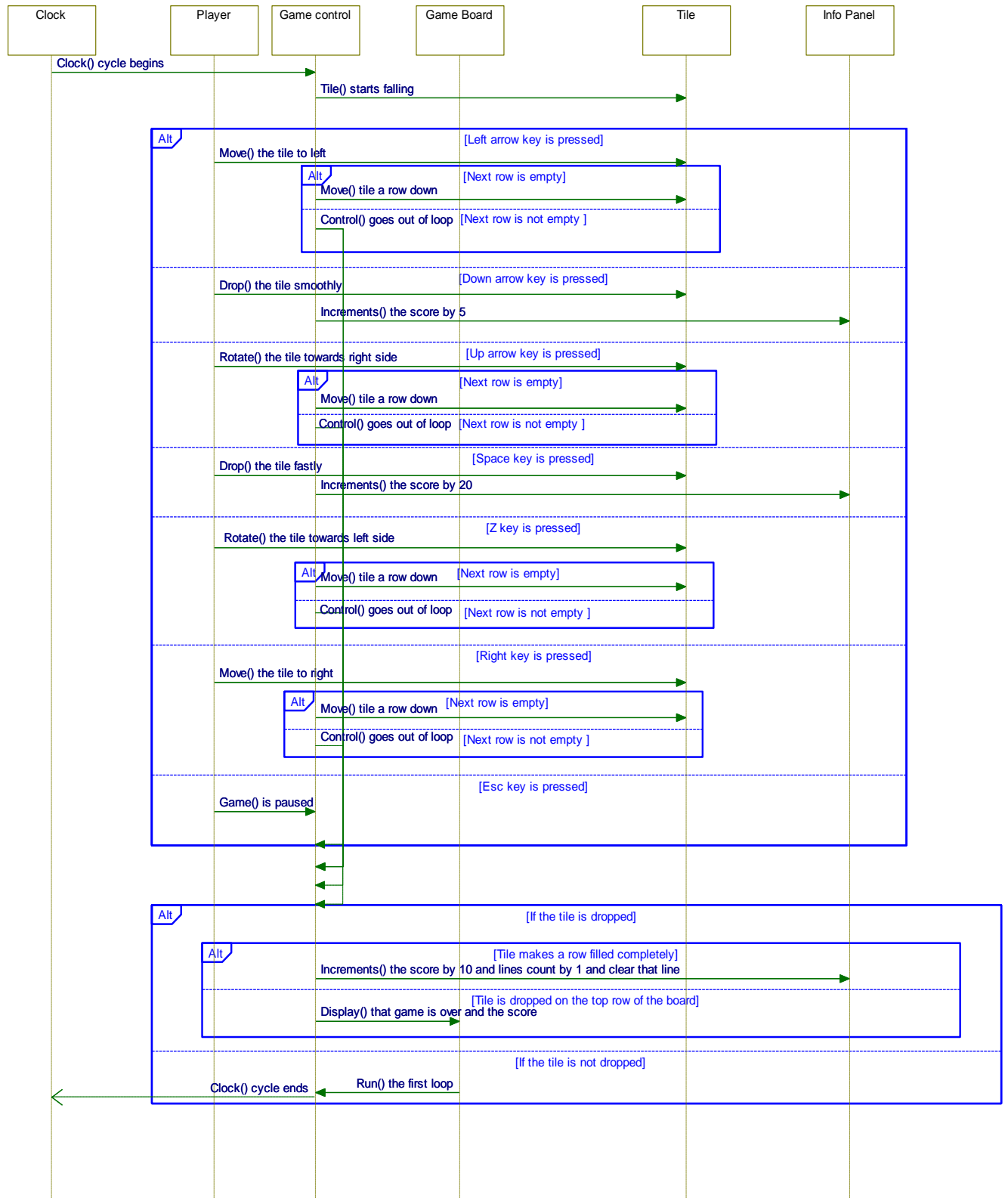
- If the left arrow key is pressed by the player then the tile is moved left and if the next row is empty then the tile is moved a row down else the control is moved out of the first major loop and comes out of this loop.
- Else if the down arrow key is pressed then the tile is dropped smoothly and the score is incremented by 5 and comes out of this loop.
- Else if up arrow key is pressed then the tile is rotated towards right and if the next row is empty then the tile is moved a row down else the control is moved out of the first major loop and comes out of this loop.
- Else if space key is pressed then the tile is dropped hardly and the score is incremented by 20 and comes out of this loop.
- Else if Z key is pressed then the tile is rotated towards left and if the next row is empty then the tile is moved a row down else the control is moved out of the first major loop and comes out of this loop.
- Else if the right arrow key is pressed then the tile is moved right and if the next row is empty then the tile is moved a row down else the control is moved out of the first major loop and comes out of this loop.
- Else if Esc key is pressed then the game is paused and comes out of this loop.

Now the control enters into second loop and performs following functions:

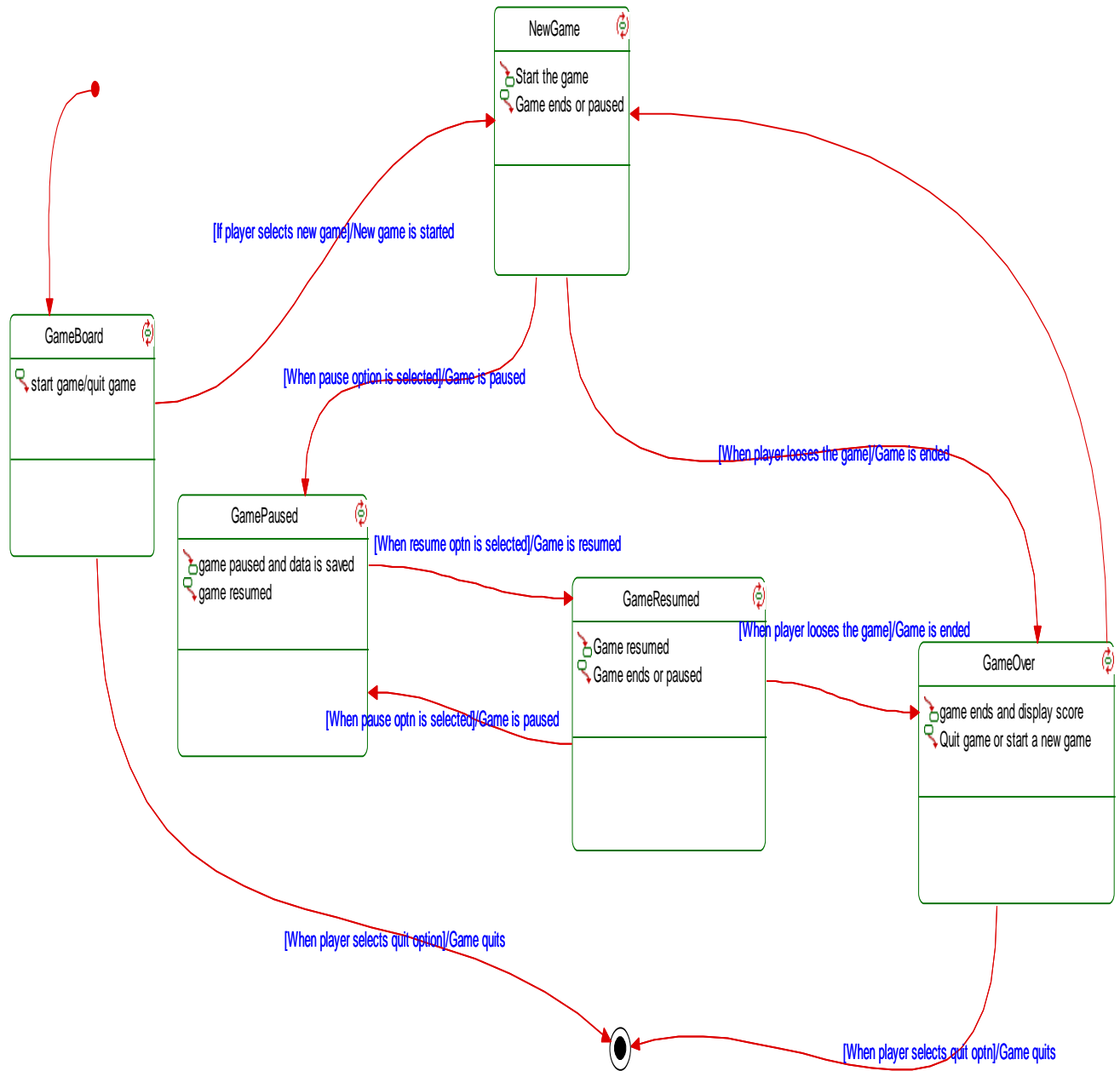
- If the tile is dropped and
 - ◆ If the dropped tile makes a row filled completely then increments the score by 10, lines count by 1 and clear that line and comes out of this loop.
 - ◆ Else if the tile is dropped on the top row of the board then display on the game board that the game is over and the final score and comes out of this loop.
- Else if the tile is not dropped then control should execute first loop.

This clock cycle ends at this point and the next clock cycle starts.

Diagram:



State diagram for Tetris game



Description:

- This state diagram has 5 states such as NewGame, GameBoard, GamePaused, GameResumed, GameOver.

- Transition from GameBoard to NewGame will occur when player selects new game.
- Transition from NewGame to GamePaused , when pause option is selected.
- Transition from GamePaused to GameResumed and GameResumed to GamePaused will occur when resume and pause options are selected.
- Transition from NewGame, GameResumed to GameOver will occur when player loses the game.
- States GameBoard and GameOver terminate when player quits from game.