

Use Case UC1: StartGame

Primary Actor: User

Stakeholders and Interests:

- User: Wants fast and accurate start of the game.

Preconditions: The game is executed by the user.

Success Guarantee (Postconditions): The game is started from a level according to the choice of the user. The game screen is displayed and the game begins.

Main Success Scenario (Basic Flow):

- 1- User selects "Play Game" button.
- 2- The System asks for the user's name.
- 3- User enters a player name.
- 4- The system presents a dialog with two choices to the user which are start a new game or continue one of the previously saved games.
- 5- The user chooses to start a new game.
- 6- The system loads from XML and presents available levels for the chosen player to start.
- 7- The user selects a level.
- 8- The game is started from the selected level.

Extensions (Alternative Flows):

5-8a – The player chooses to continue one of the previously saved game sessions:

- 1- The user chooses to continue one of the previously saved game sessions.
- 2- The system presents available saved game states for the chosen player.
- 3- The player selects a game session.
- 4- The selected game session is opened and the user continues from where s/he left the game.

5-8b - Return to menu

- 1 – The user chooses to return to menu
- 2 – System closes the start game dialog and returns to the menu

*a - At any time, System fails

- 1- User restarts the game.

Frequency of Occurrence: Could be one for each game playing action.

Use Case UC2: SwapLokums

Primary Actor: User

Stakeholders and Interests:

- User: Wants to swap the two selected Lokums as fast and accurate as possible.

Preconditions: The game is started by using the PlayGame use case.

Success Guarantee (Postconditions): The selected Lokums are swapped and the locations of the Lokums are deleted if necessary. The special Lokum is formed after the swapping if the swapping corresponds one of the special Lokum formation combinations.

Main Success Scenario (Basic Flow):

- 1- User selects the first lokum to be swapped.
- 2- User selects the second lokum to be swapped.
- 3- The system checks if the swapping two lokum is legal.
- 4- The swapping is done.
- 5- The line of three consecutive Lokums formed after the swapping is removed.
- 6- Score is calculated accordingly and updated.
- 7- Lokums above the removed line comes down to fill created space of the removed line, necessary number of new Lokums dropped to the empty squares.
- 8- System presents the new state of the board with new Lokums.

System repeats steps 5-8 until there is no Lokums needed to be removed on the new state of the board.

Extensions (Alternative Flows):

2-8a- Deselection of the first Lokum:

- 1- The first lokum is get deselected.

2-8b- User chooses two non-consecutive Lokums

- 1- System signals an warning to indicate that two lokums are not swappable.
- 2- Lokums are get deselected.

5a- Line of four consecutive Lokums of the same color:

- 1- The line of four consecutive Lokums formed after the swapping is removed.
- 2- Striped Lokum is generated and put to correct position.

5b- Line of five consecutive Lokums of the same color:

- 1- The line of five consecutive Lokums formed after the swapping is removed.
- 2- Color Bomb Lokum is generated and put to correct position.

5c- Five Lokums of the same color forming a "T" shape:

- 1- Five Lokums of the same color forming a "T" shape generated after the swapping are removed.
- 2- Wrapped Lokum is generated and put to correct position.

5d- Only one of the selected Lokums is Striped:

- 1- Either an entire row or column is cleared.

5e- Only one of the selected Lokums is Wrapped:

- 1- The 3x3 area of surrounding Lokums are cleared, the Wrapped lokum falls, and explodes one more time.

5f- Only one of the selected Lokums is Color Bomb:

- 1- All lokums with the same color of the one it is matched with the swapped Lokum.

5g- Both of selected Lokums are Striped:

- 1- Both entire row and column are cleared.

5h- One of the selected Lokums is Striped, other one is Wrapped:

- 1- Both entire 3 consecutive rows and 3 consecutive columns are cleared.

5i- Both of selected Lokums are Wrapped:

- 1- The 6x5 area of surrounding Lokums are cleared, the Wrapped lokums fall, and explode one more time.

5j- One of the selected Lokums is Striped, other one is Color Bomb:

- 1- Lokums matching with the color of Striped Lokum and their row or column cleared.

5k- One of the selected Lokums is Wrapped, other one is Color Bomb:

- 1- Lokums matching with the color of Wrapped Lokum and their 3x3 area of surrounding Lokums are cleared , lokums fall, and explode one more time.

5l- Both of selected Lokums are Color Bomb:

- 1- All lokums are cleared.

6a – If the current level is a time based level and one of the selected lokums is a Time Lokum, then the system adds an additional time to the remaining time.

*a- At any time, System fails

1- User restarts the game.

Special Requirements:

- The colors and the shapes of the Lokums must be distinguished easily.

Frequency of Occurrence: Could be almost continuous.

Use Case UC3: SpecialSwapLokums

Primary Actor: User

Stakeholders and Interests:

- User: Wants to be able to select and swap two non-consecutive Lokums for the next swap

Preconditions: The game is started by using the PlayGame use case. The user have at least one special swaps left for the level.

Success Guarantee (Postconditions): The next swap can be done between any two available lokums on the board.

Main Success Scenario (Basic Flow):

- 1- User selects the special swap mode.
- 2- The system allows the user to select any two available lokums on the board.
- 3- User selects the first lokum to be swapped.
- 4- User selects the second lokum to be swapped.
- 5- The system checks if the swapping two lokum is legal.
- 6- The swapping is done.
- 7- Any possible explosion is exploded after the swapping is done.
- 8- Score is calculated accordingly and updated.
- 9- Lokums above the removed line comes down to fill created space of the removed line, necessary number of new Lokums dropped to the empty squares.
- 10- System presents the new state of the board with new Lokums.

System repeats steps 7-10 until there is no Lokums needed to be removed on the new state of the board.

Extensions (Alternative Flows):

4-10a- Deselection of the first Lokum:

- 1- The first lokum is get deselected.

7a- Line of three consecutive Lokums of the same color:

- 1- The line of three consecutive Lokums formed after the swapping is removed

7b- Line of four consecutive Lokums of the same color:

- 1- The line of four consecutive Lokums formed after the swapping is removed.
- 2- Striped Lokum is generated and put to correct position.

7c- Line of five consecutive Lokums of the same color:

- 1- The line of five consecutive Lokums formed after the swapping is removed.
- 2- Color Bomb Lokum is generated and put to correct position.

7d- Five Lokums of the same color forming a “T” shape:

- 1- Five Lokums of the same color forming a “T” shape generated after the swapping are removed.
- 2- Wrapped Lokum is generated and put to correct position.

7e- Only one of the selected Lokums is Striped:

- 1- Either an entire row or column is cleared.

7f- Only one of the selected Lokums is Wrapped:

- 1- The 3x3 area of surrounding Lokums are cleared, the Wrapped lokum falls, and explodes one more time.

7g- Only one of the selected Lokums is Color Bomb:

- 1- All lokums with the same color of the one it is matched with the swapped Lokum.

7h- Both of selected Lokums are Striped:

- 1- Both entire row and column are cleared.

7i- One of the selected Lokums is Striped, other one is Wrapped:

- 1- Both entire 3 consecutive rows and 3 consecutive columns are cleared.

7j- Both of selected Lokums are Wrapped:

- 1- The 6x5 area of surrounding Lokums are cleared, the Wrapped lokums fall, and explode one more time.

7k- One of the selected Lokums is Striped, other one is Color Bomb:

- 1- Lokums matching with the color of Striped Lokum and their row or column cleared.

7l- One of the selected Lokums is Wrapped, other one is Color Bomb:

- 1- Lokums matching with the color of Wrapped Lokum and their 3x3 area of surrounding Lokums are cleared , lokums fall, and explode one more time.

7m- Both of selected Lokums are Color Bomb:

- 2- All lokums are cleared.

8a – If the current level is a time based level and one of the selected lokums is a Time Lokum, then the system adds an additional time to the remaining time.

*a- At any time, System fails

- 1- User restarts the game.

Special Requirements:

- The colors and the shapes of the Lokums must be distinguished easily.

Frequency of Occurrence: Could be almost continuous.

Use Case UC4: SaveGame

Primary Actor: User

Stakeholders and Interests:

- User: Wants to save the current game session at the current state in order to be able continue from that state again at any time.

Preconditions: The game is started by using the PlayGame use case.

Success Guarantee (Postconditions): The game state is saved under the given player name at the beginning of the game.

Main Success Scenario (Basic Flow):

- 1- User presses the "Save" button.
- 2- The system saves the current game at the current state.

Extensions (Alternative Flows):

- *a- At any time, System fails
 - 1- User restarts the game.

Special Requirements:

- There should be enough place in the memory to save the game state.

Frequency of Occurrence: Could be few times for each game session.

Use Case UC5: GameOver

Primary Actor: User

Stakeholders and Interests:

- User: Wants to start the next level or to return to the game menu for starting another game or to exit the game completely

Preconditions: The game is over with either winning of the player or the losing.

Success Guarantee (Postconditions): The game state is saved under the given player name at the beginning of the game.

Main Success Scenario (Basic Flow):

- 1-The system saves the current session with player name, last level and total score.
- 2-The system presents the game over dialog with next level and return to menu options.
- 3-The user selects to continue to play the next level.
- 4-The system presents the next level.

Extensions (Alternative Flows):

1a – Game is over with a lose:

- 1-The system presents the game over dialog with return to menu.

3-4a – Return menu:

- 1- The user selects to return to menu
- 2- The system closes all dialogs and window and presents the main menu

4a- No next level:

- 1- The system presents the previously won level again.

*a- At any time, System fails

- 1- User restarts the game.

Frequency of Occurrence: For one for each game session.