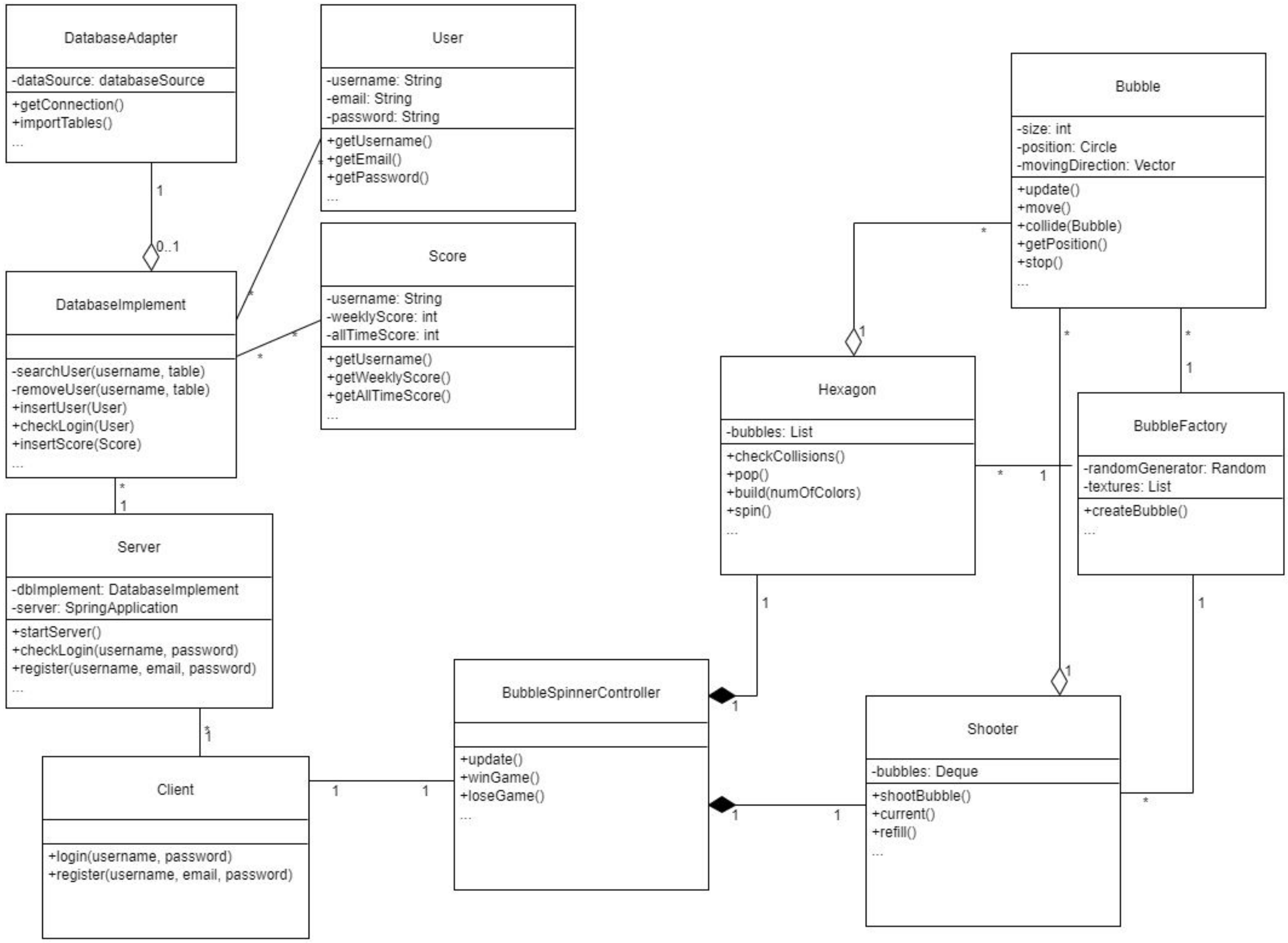
Exercise 1 - Class Diagrams

Class Diagram



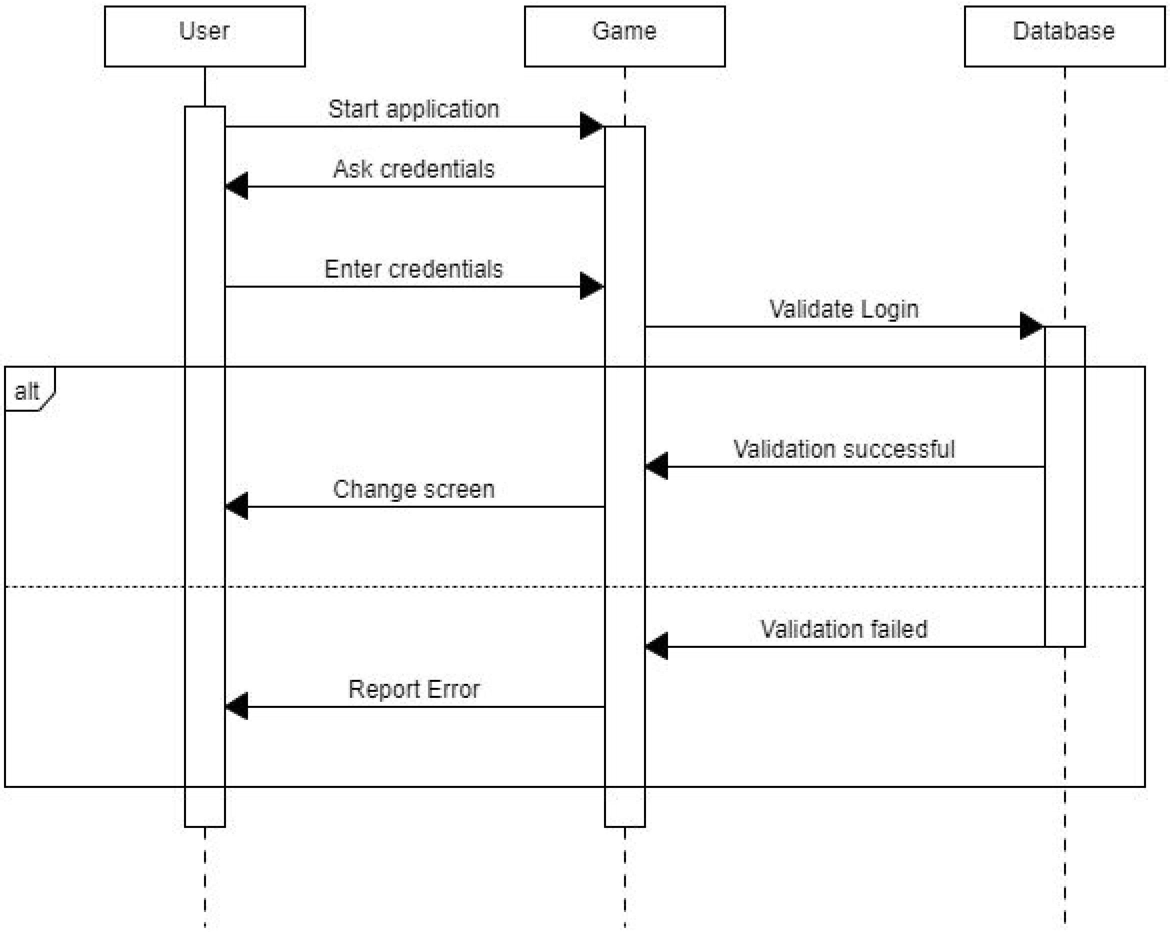
In order to authenticate the user we need to check his credentials with the ones stored in the database, the classes DatabaseAdapter and DatabaseImplement will establish a connection and query the database respectively. We have a Server that communicates with the database and answers to JSON POST requests made by the Client.

The main logic of the game happens in the BubbleSpinnerController which uses the update() function to poll all the entities in the game, it is composed of a hexagon and shooter structure which are the two main elements in the game.

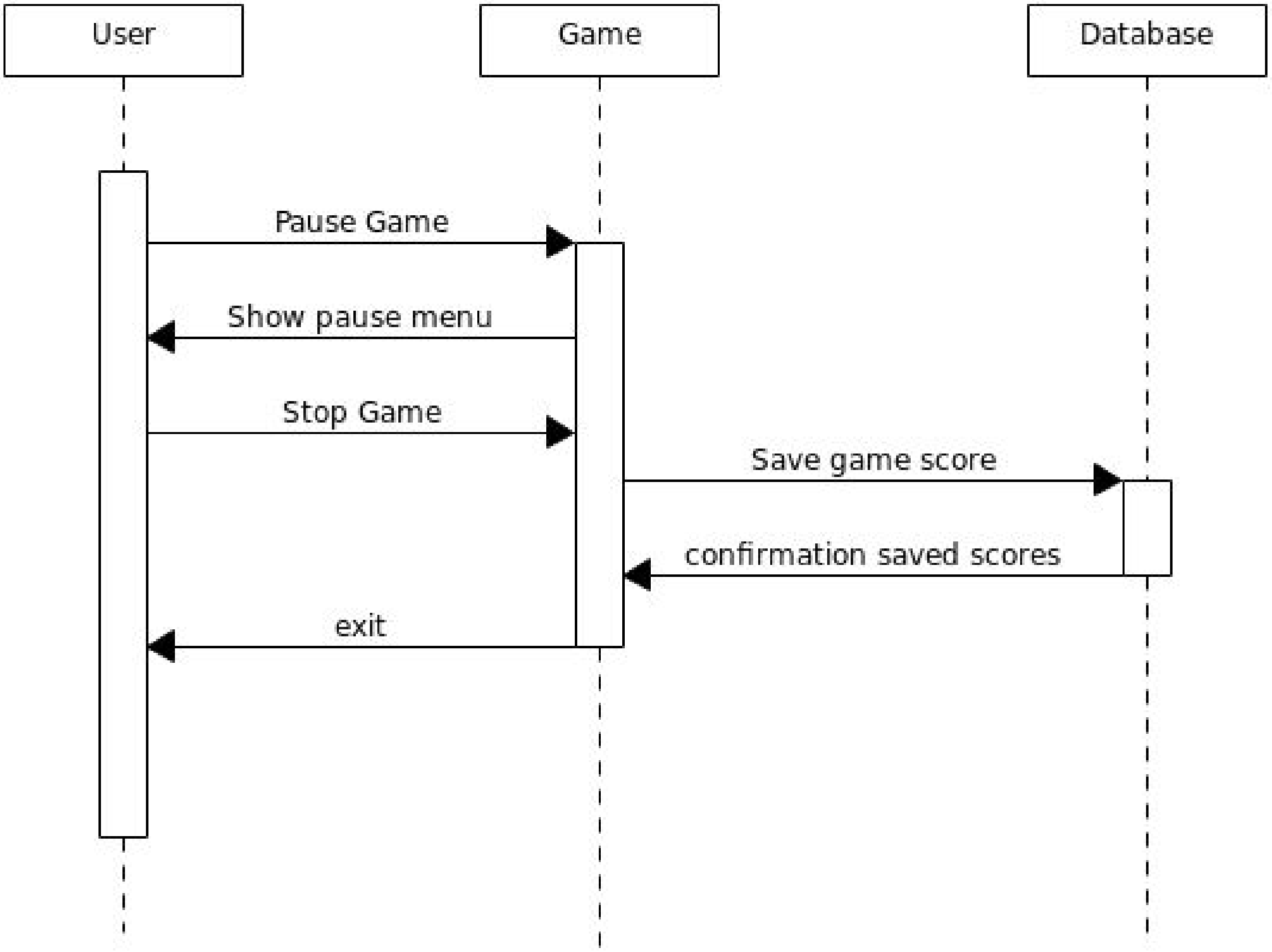
The shooter holds the bubbles at the top and his able to shoot a bubble towards the hexagon or refill them if the ones available are less than a threshold. The hexagon is the central structure of the game which is able to check for collisions in case a moving bubble approaches it and if the bubbles match in color it will pop them from itself. All the Bubble objects that are used by the hexagon and shooter are created by the BubbleFactory which uses a random generator to always give a different set of bubbles. Each Bubble object holds information about its state, position and offers utility function for the previous structures.

Exercise 2 - Sequence Diagrams

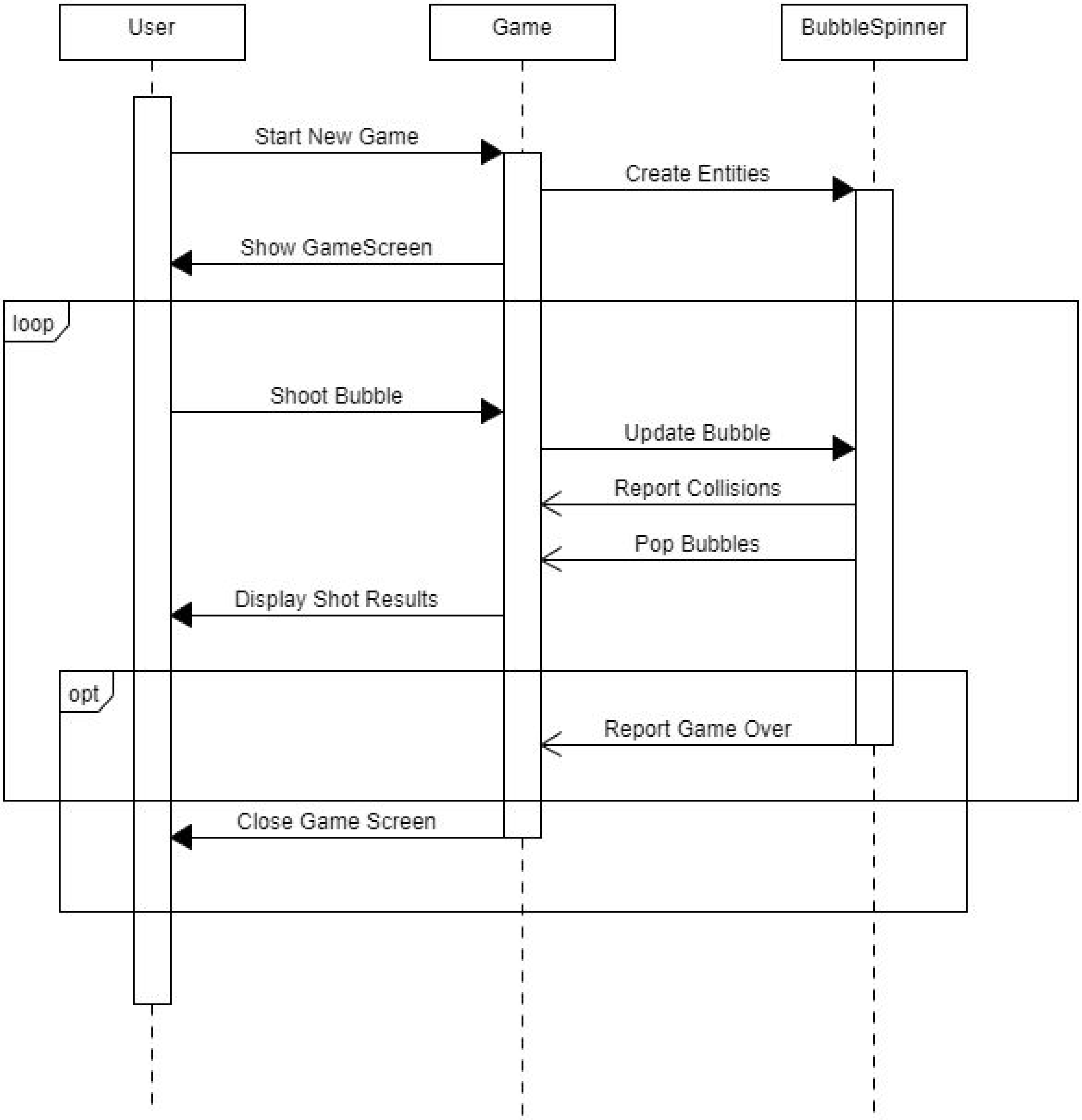
Login Sequence Diagram



Exit Game Sequence Diagram



Main Game Loop Sequence Diagram


User
Game
BubbleSpinner
Start New Game
Create Entities
Show GameScreen
loop
Shoot Bubble
Update Bubble
Report Collisions
Pop Bubbles
Display Shot Results
opt
Report Game Over
Close Game Screen