**Tecnologies**

* SQL DB
* .NET CORE 3.1

**Tools**

* Postman

**Solution Layers**

* Model
* Services
* Controller

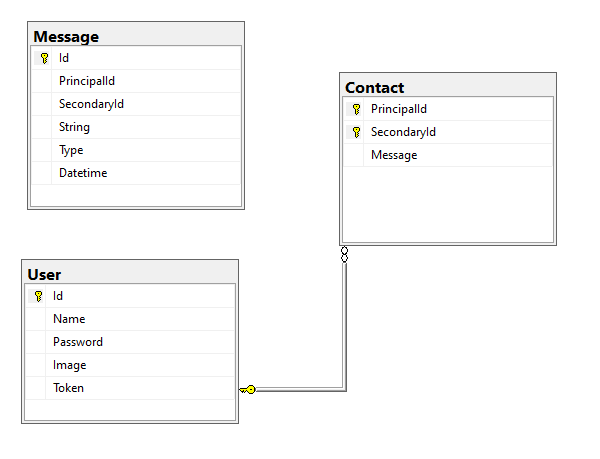
**Design Pattern**

* Singleton
* MVC

**Steps**

1. Create API solution on visual studio.
2. Add nuget packages (Entity, EntityFreamwork.tools, EntityFreamwork.SqlServer, SignalR, Newtosoft.Json)
3. Create database on SQL
4. Create model and context for entity.
5. Initialize migration for entity and database update.
6. Add Json controller in the startup class.
7. Create controller, models controller and service layer.
8. Test with postman.
9. Add signalR folder and class.
10. Add signalR and Cors configuration on startup class.
11. Implement the signalR class on the services layer.

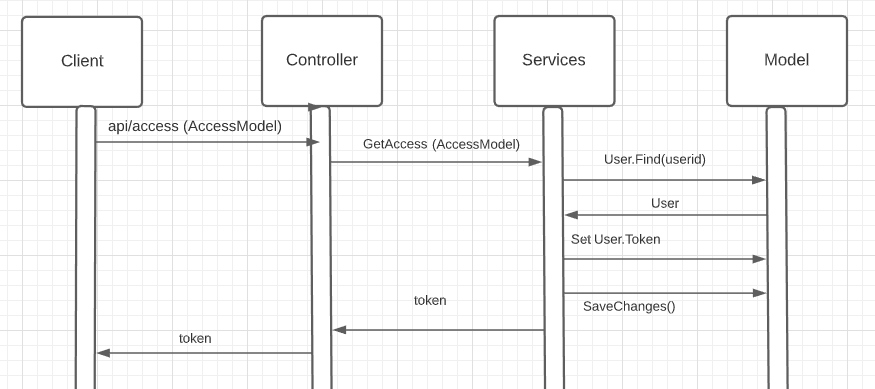
**Data Model**



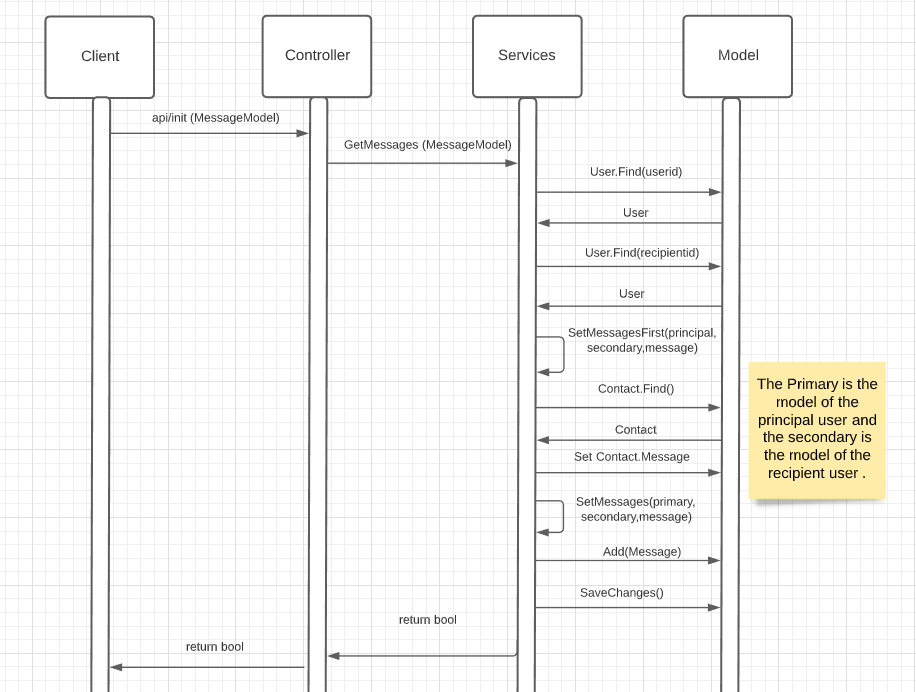
**Note**: The model was made using code first with Entity Freamwork.

**Sequency Diagram**

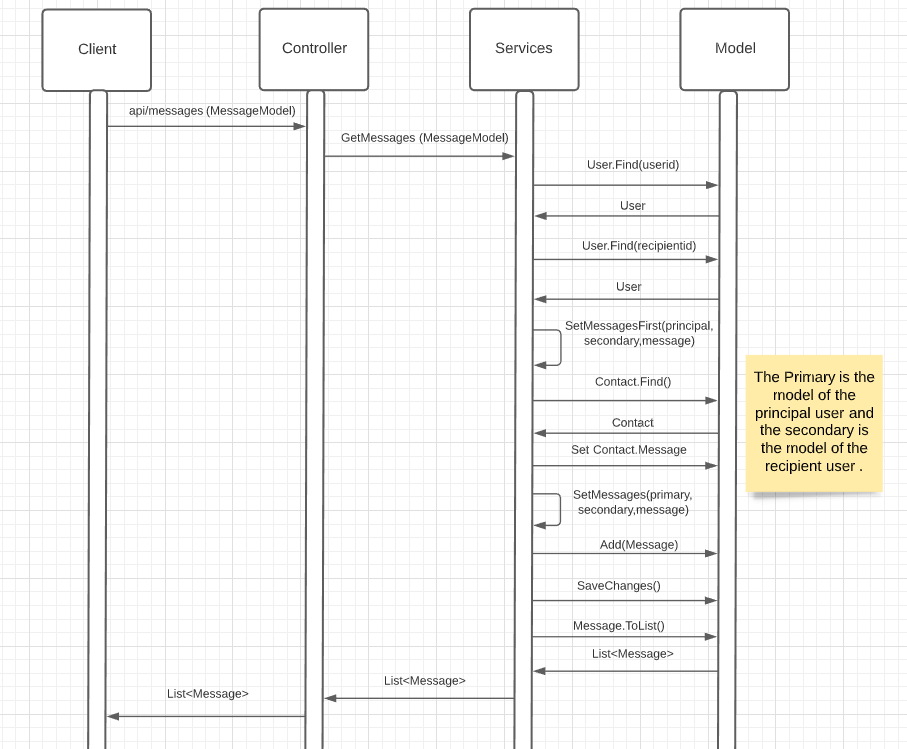
**Access**



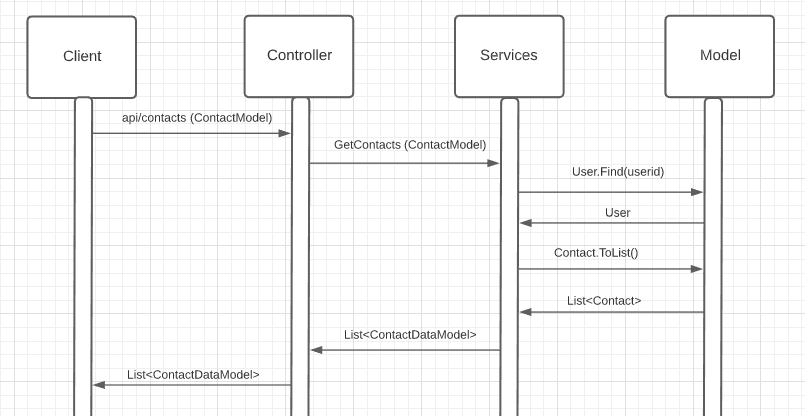
**Initialize**



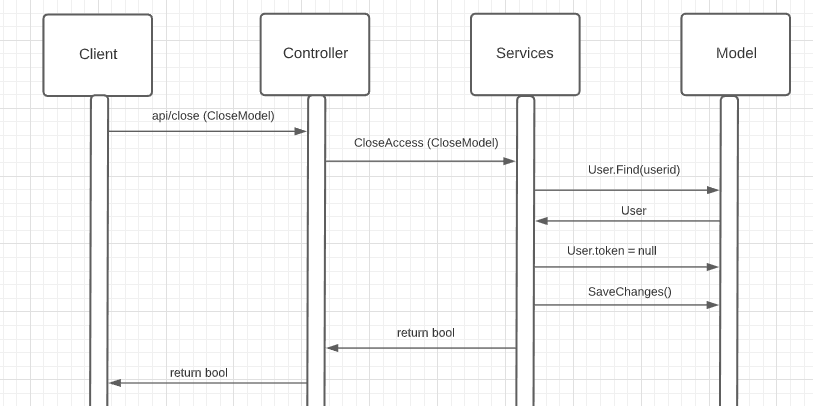
**Messages**



**Contacts**



**Close**



**Flow**

1. The Client ask for the token with the userid and password to initialize connection. The system generates a token for the user and return the same.
2. The client sends the message, user id, recipient id and security code (token). Return a boolean.
3. The client asks for the messages with the user id, a message and the security code. Return a list of the messages in json format.
4. The asks for the contacts of the user sending the user id and the security code. Return a list of the contact in json format.
5. The client sends the user id to finish the connection. The system cleans the users token and responds with a Boolean.