Chat System for Client Support

Student: Vaduva Calin-Liviu

Grupa: 30644

Table of content

1. Assigment Specification

Develop a chat system to offer support for the clients of the energy platform if they have questions related with their energy consumption. The chat system should allow communication between the clients and the administrator of the system

Functional requirements

The client application displays a chat box where clients can type messages.

- The message is sent asynchronously to the administrator, that receives the message together

with the client identifier, being able to start a chat with the client.

- Messages can be sent back and forth between the client and the administrator during chat

session.

- The administrator can chat with multiple clients at once.
- A notification is displayed for the user when the other user reads the message.
- A notification is displayed for the user (e.g., typing) while the user from the other end of

communication types its message.

2. Architecture design

For implementing the requirements I used Docker for the local deployment of the application, I created an image each for backend, frontend and postgres and I ran the application in a docker container. If the running process is started, the application can be accessed from the browser at http://localhost:4200 without running the application from the IDE. For the clients connection I created a Web socket with SignalR, so when the client send a message to admin we send it through the web socket connection and will be displayed in the message box from the admin page, and vice versa. Through websockets we create the connection wich send the message seen or when one of the clients is typing.
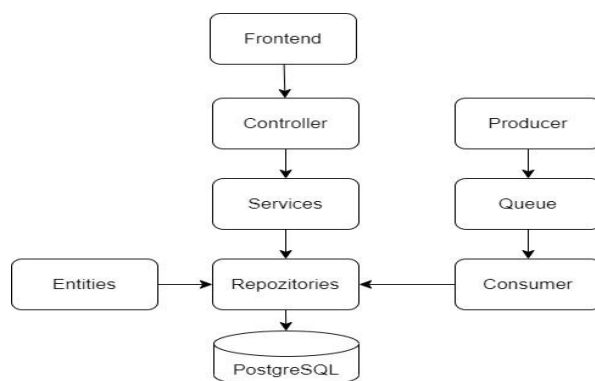
3. UML Deployment
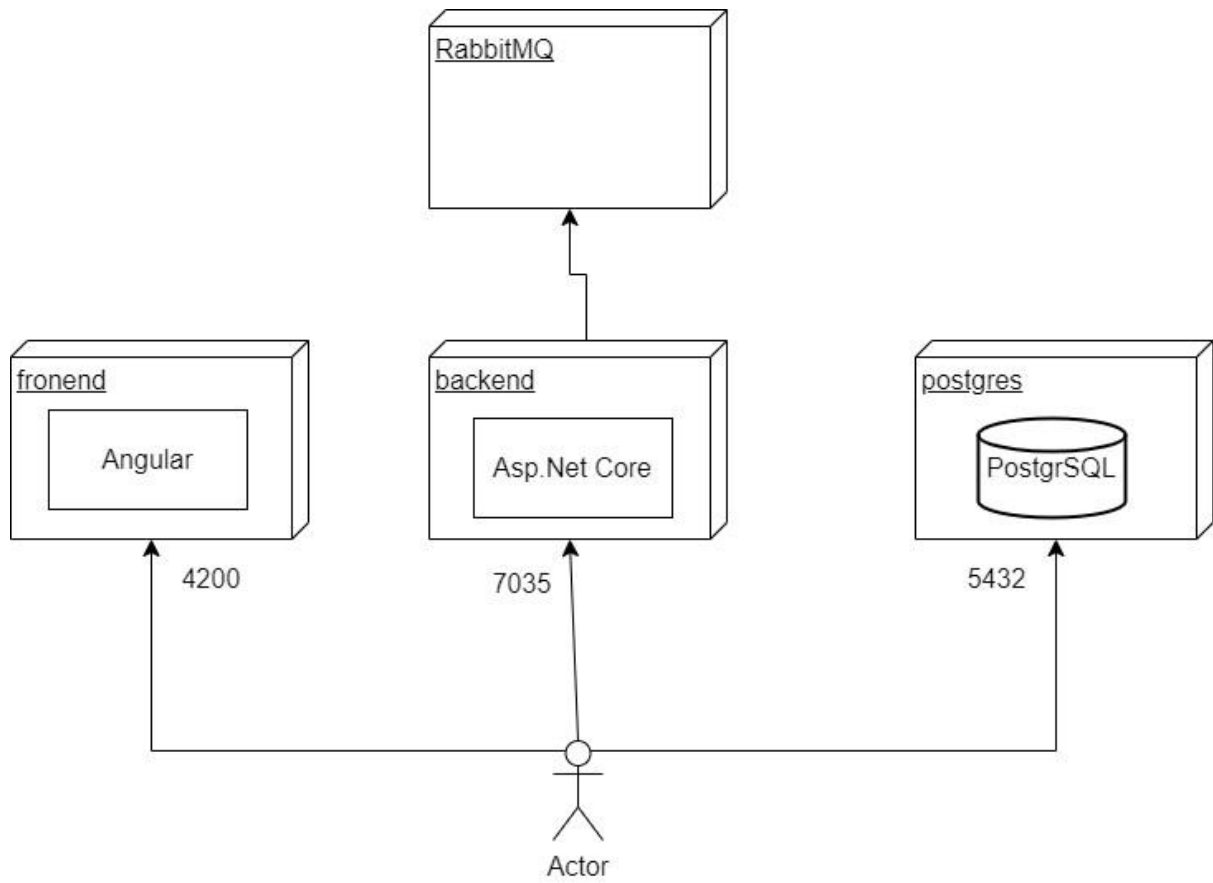
4. Database design

For the database design I created a table for the users with the fields id for identification, name, role for identification between Client and admin, password and username for login.

For the table devices I created the Id as primary key, and fields like description, address, the maximum consumption of a device and the userId which is for the identification of the owner of the created device.

The table Energy is for the energy consumption of each device it has a Id, timestamp for the day and hour at which the consumption was taken and the deviceId for identification of the device.