**SOA – project documentation**

The application was developed as an online booking system for movies in different theaters from the country.

First, a user needs to create an account and login in order to see the movies and be able to buy tickets to a specific movie.

After login, the user can view the list of available movies, along with some details about the movies (title, location, price, etc) and has the option to buy a ticket to a movie. When purchasing a ticket, the application makes a simulation of sending the user the details of the bought ticket (kind of like receiving a confirmation email).

The backend is composed of 6 microservices each of them having a specific role and a serverless AWS lambda function. The authentication service is responsible with login/signup features, the movies service is responsible of movies management, the tickets service is responsible of buying tickets, the booking confirmation service receives the purchased tickets, generates the booking details and sends them to the server notifications service responsible of simulating sending a notification to the user with the details, and lastly nginx that acts as a reversed proxy, load balancer and API gateway that helps route requests from clients to the appropriate microservices. The AWS lambda function is used for formatting the booking details data. The tickets service communicates with the booking confirmation service using Kafka event streaming. The booking confirmation service communicates with the server notification service through a RabbitMQ queue.

The frontend is a separate microservice and contains pages for: login, sign up, view the list of movies and buy a ticket to a specific movie.

The application uses Docker for creating the images and deploying the containers.

A diagram of the whole system can be seen below:

A diagram of a company

AI-generated content may be incorrect.

Frontend service components diagram:

A diagram of a computer program

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C4 Context Diagram:

A diagram of a puzzle

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C4 Container Diagram:A diagram of a company

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