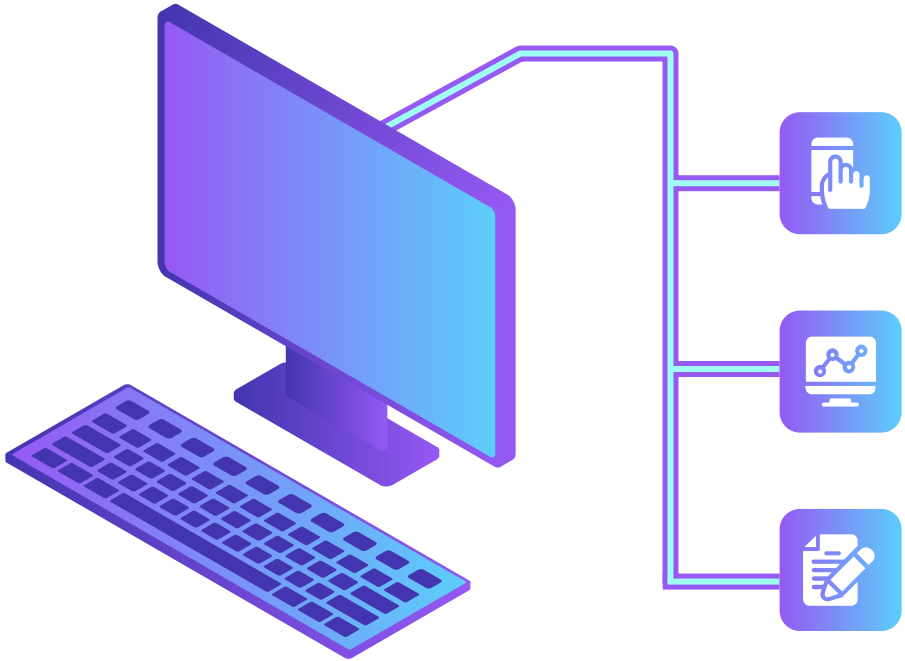
Software Containerisation

Group 31

Efe Beydoğan, Ole Timmers & Laura Duits

Quiz App



Take example quizzes

Users can click on a course to make an example quiz.

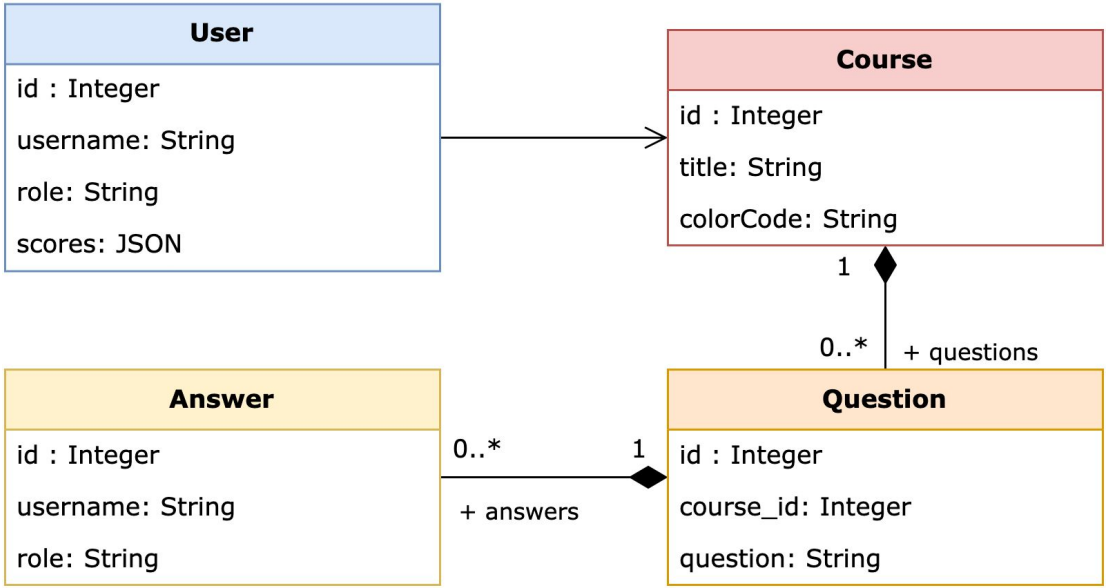
Login to keep track of progress

If the users are logged in, they can keep track of their highest score.

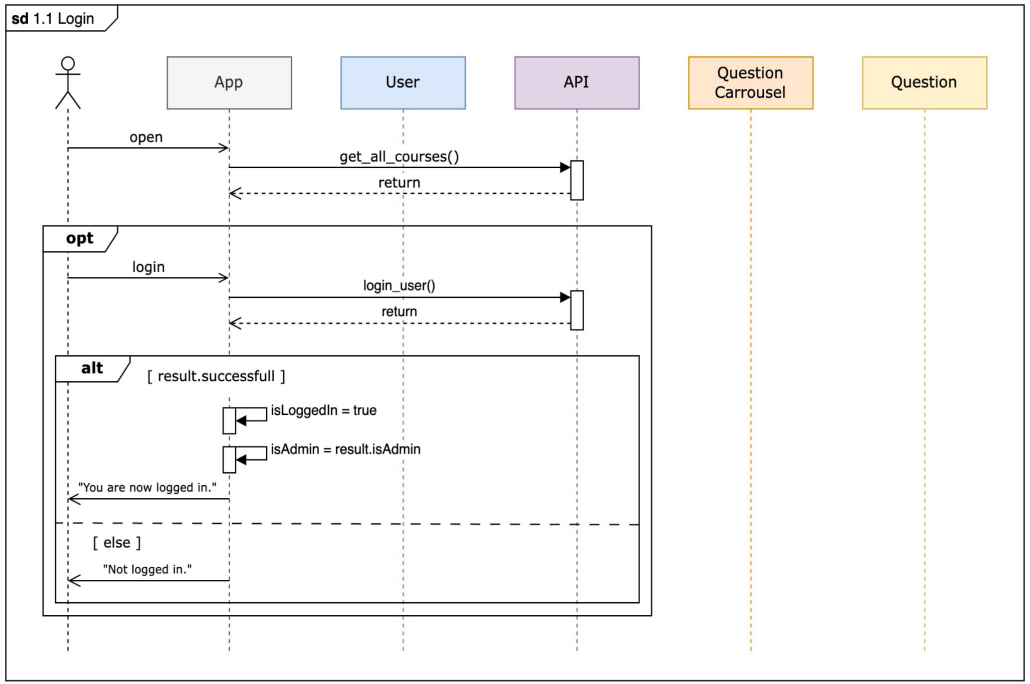
Add new learning material

Admin's can add new courses, questions and answers.

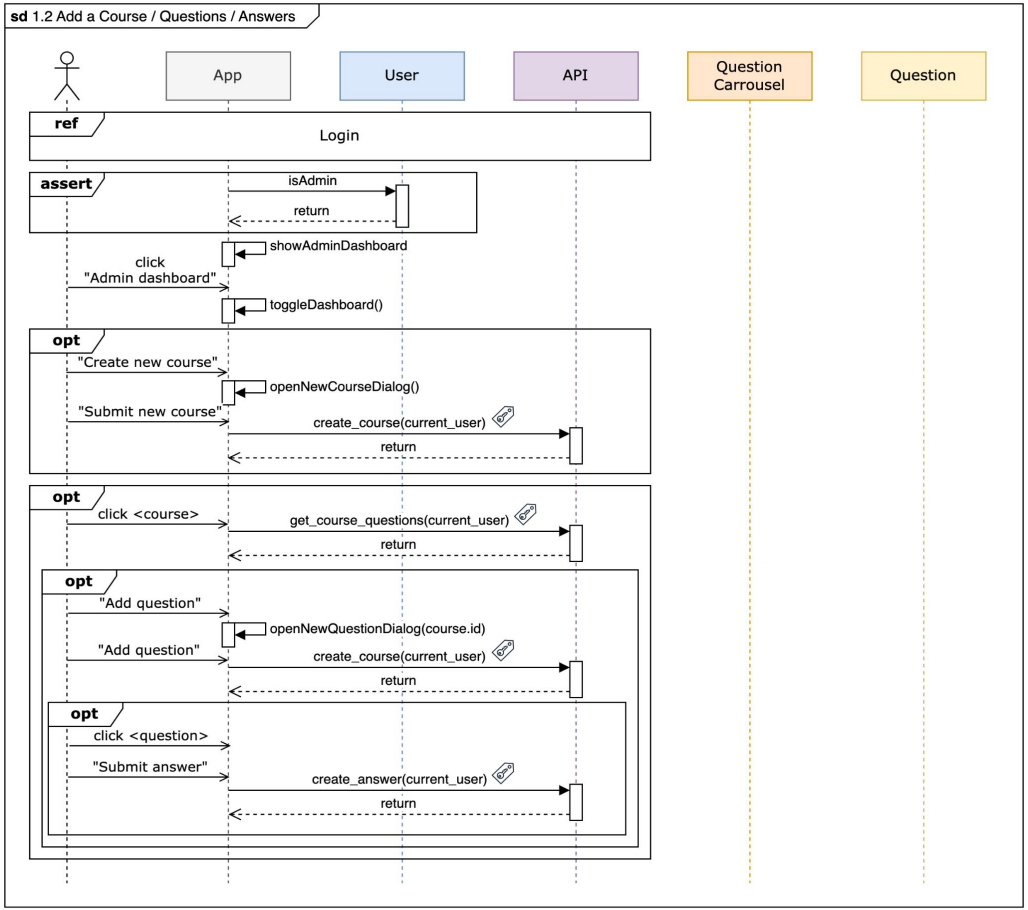
Application Architecture (1/4)



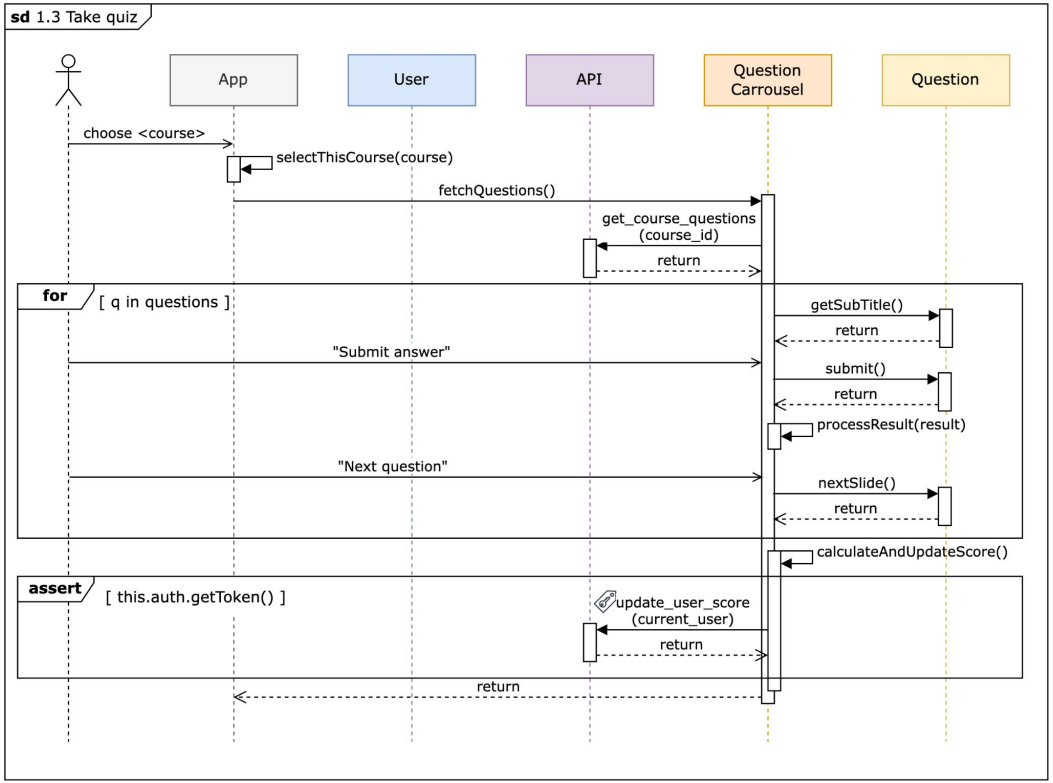
Application Architecture (2/4)



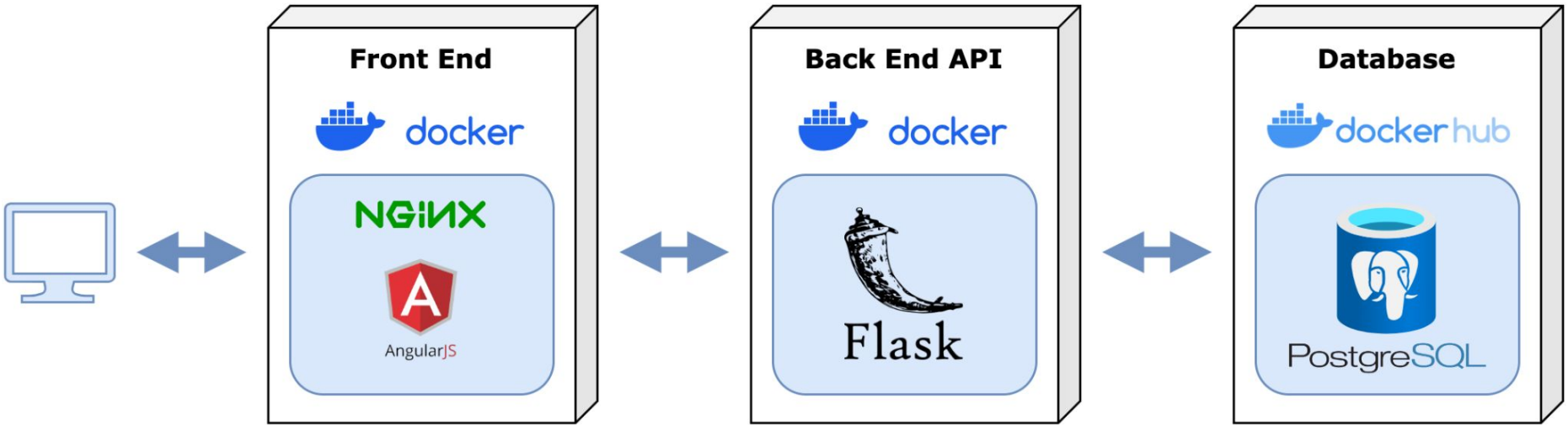
Application Architecture (3/4)



Application Architecture (4/4)



Docker Artefacts



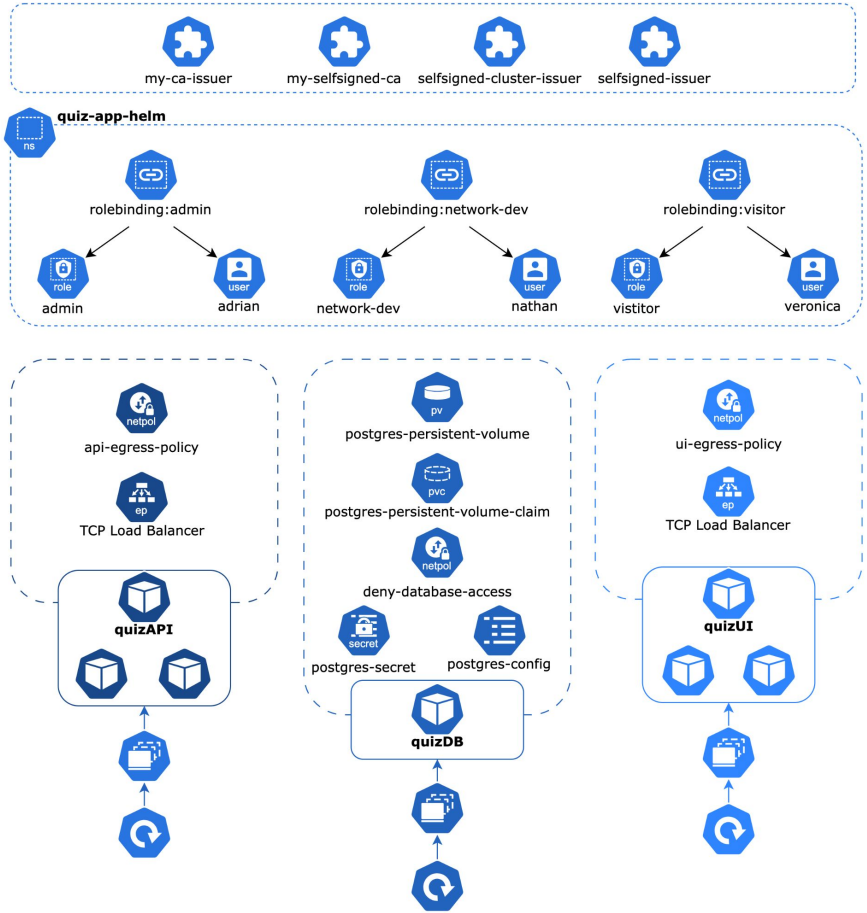
Frontend Dockerfile

```
# Use official node image as the base image
FROM node:20.11.0 as build
# Set the working directory
WORKDIR /frontend
# Copy the package*.json file inside the container so it can tell npm what packages to install
COPY package*.json ./

# Run the installation of all the packages required in package*.json
RUN npm install

# Copy the source code of the application into the /app folder of the container
COPY . .

RUN npm run build

# Stage 2, create a container with nginx
# that serves the files created in the previous build
FROM nginx:stable
# We copy the files that were created in the previous build to the folder where nginx expects them
COPY --from=build /frontend/dist/quiz-place/ /usr/share/nginx/html
EXPOSE 80
# We copy the nginx configuration file form the host to the nginx installation
COPY /nginx-custom.conf /etc/nginx/conf.d/default.conf
```

Backend Dockerfile

```
1.  FROM python:3.6-slim-buster
2.
3.  WORKDIR /backend
4.
5.  ENV FLASK_APP=app.py
6.
7.  ENV FLASK_RUN_HOST=0.0.0.0
8.
9.  ENV FLASK_ENV=development
10.
11. COPY requirements.txt ./
12.
13. RUN pip install -r requirements.txt
14.
15. COPY . .
16.
17. EXPOSE 5000
18.
19. CMD ["flask", "run"]
```

Kubernetes Artefacts



GitHub Repository

Kubernetes Files