



OST
Ostschweizer
Fachhochschule

Flashcards

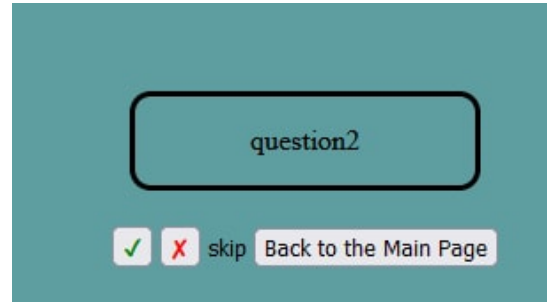
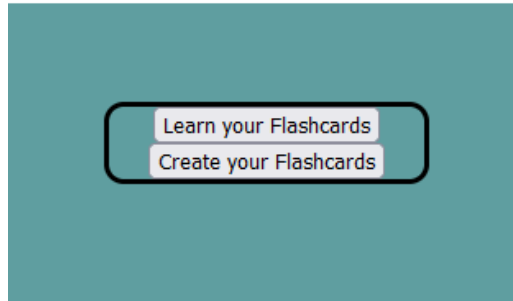
Challenge Task

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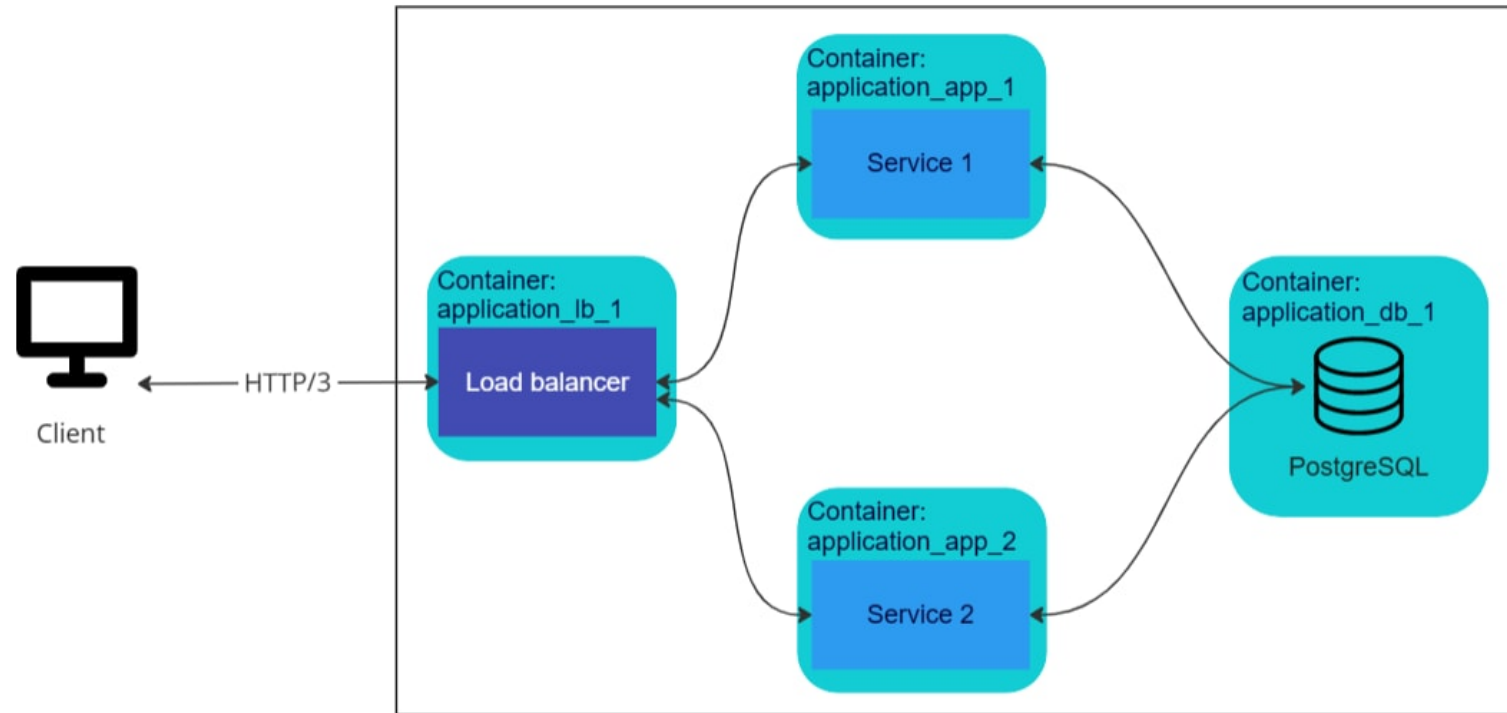
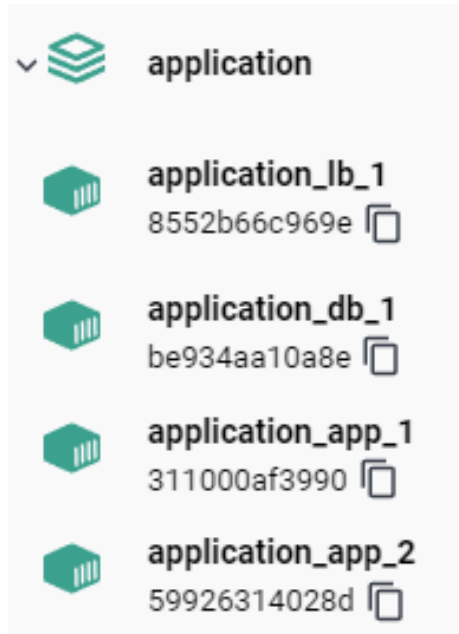
Distributed Systems FS 23

Flashcards



- Lernkarten um Unterrichtsinhalt einfach zu lernen und Wissen zu prüfen
- Grundfunktionalität vorhanden, beliebig erweiterbar

Architektur



Technologien

Applikation

- Frontend
 - JavaScript
 - HTML
 - CSS
- Backend
 - Node.js
 - Express
 - AJAX



Technologien

Database

- PostgreSQL Image von Docker Hub
- Speichert die Flashcards
- Nutzt database-seed File um Datenbank zu erstellen, falls noch keine Datenbank auf dem Host vorhanden ist



Distributed Systems

- Load Balancer: Caddy
- HTTP3: Caddy



```
#Caddyfile
localhost:443 {
  header Alt-Svc: h3=":443"; ma=86400
  reverse_proxy * {
    to http://application_app_1:3001
    to http://application_app_2:3001

    lb_policy cookie mycookie
    lb_try_duration 1s
    lb_try_interval 100ms
    fail_duration 10s
    unhealthy_latency 1s
  }
}
```

- Docker



```
1 version: '3.8'
2 services:
3   lb:
4     image: caddy:latest
5     volumes:
6       - ./Caddyfile-http3:/etc/caddy/Caddyfile
7     ports:
8       - "7070:7070"
9       - "443:443"
10      - "443:443/udp"
11     restart: unless-stopped
12
13   app:
14     build: .
15     depends_on:
16       - db
17     volumes:
18       - ./usr/src/app/
19       - ./usr/src/app/node_modules
20     deploy:
21       replicas: 2
22
23   db:
24     image: postgres:15.2
25     restart: always
26     environment:
27       - POSTGRES_USER=user
28       - POSTGRES_PASSWORD=someVERYg8dPassword
29       - POSTGRES_DB=lernkarten
30     ports:
31       - "5432:5432"
32     volumes:
33       - ./database-seed.sql:/docker-entrypoint-initdb.d/database-seed.sql
34       - ./database:/var/lib/postgresql/data
```

DEMO