Authors:

Richard Langtinn (r.langtinn@gmail.com) student-id: 512961
Ola Hulleberg (ola.hulleberg@gmail.com) student-id: 498711

Ola - Did everything (client communication, server communication, latency calculation code, API, and database+Heroku configuration) except style the forms
Richard - Heroku setup, forms, checking latency, testing the application and file-serving architect (Express static pages)

Documentation:

Our processing layer consists of an endpoint running express with static pages served from the client folder (using express.static() function), and an API route following the REST-spec: create = POST, read = GET, update = PUT, delete = DELETE.

/user endpoint:

filter{} can contain **any/every parameter** derived from **userModel**, but we only use *student_id* in our application.

API will return either *HTTP* status **200** (*OK*) or **500** (*BAD*) depending on the result.

RETURN (every crud operation's return):

```
{
        user: { userModel[] },
        timestamps:     {
                        server_received_timestamp,
                        server_sent_timestamp,
                        server_latency
                },
        error: {}
}
```

CREATE - POST with parameters derived from userModel (Schema):

```
{
        firstname,
        surname,
        student_id,
        age,
        nationality,
        degree
}
```

READ - GET with parameter:

student_id

UPDATE - PUT with filter + parameters derived from userModel (Schema):

```
{
        filter: { userModel[] },
        firstname,
        surname,
        student_id,
        age,
        nationality,
        degree
}
```

DELETE - DELETE with filter:

```
{
        filter: { userModel[] }
}
```

Github:
https://github.com/rlangtinn95/cloud-oblig1.git

Heroku:
https://oblig1ri.herokuapp.com/

Latency:

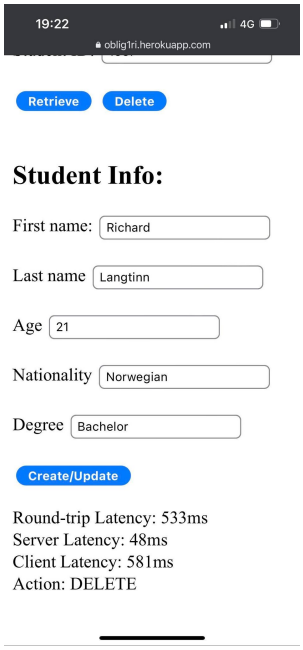
Desktop and wi-fi:

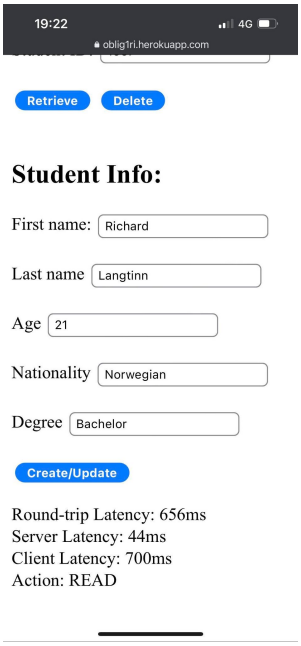
Round-trip Latency: 49ms
Server Latency: 45ms
Client Latency: 94ms
Action: READ

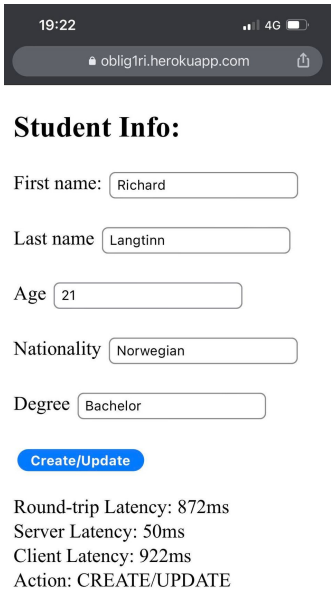
Round-trip Latency: 180ms
Server Latency: 56ms
Client Latency: 236ms
Action: CREATE/UPDATE

Round-trip Latency: 161ms
Server Latency: 51ms
Client Latency: 212ms
Action: DELETE

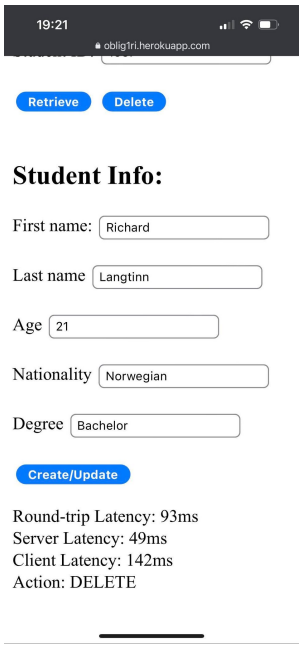
Smartphone and mobile connection (4G/5G):

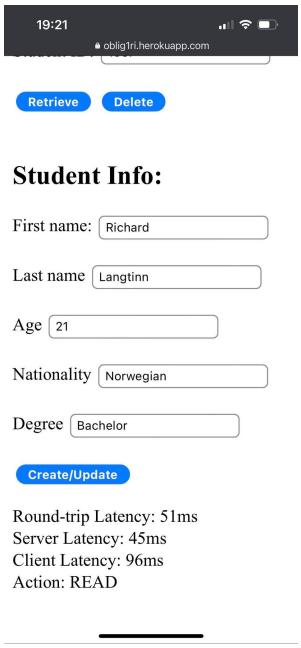


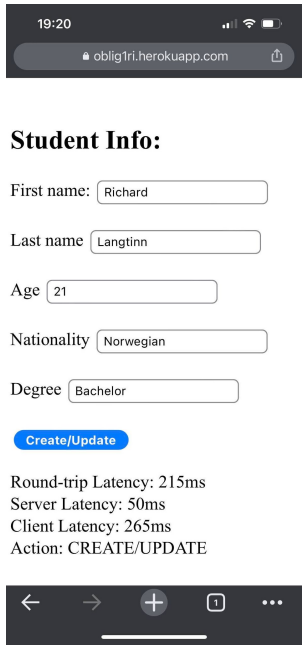




Smartphone and wi-fi:







Conclusion latency:

Server-latency in our situation is to perform actions on the database, it's a database latency. Latency in terms of 4G/5G goes slower because of heroku, but the server-client latency remains the same.