

The goal is to implement a backend for mobile and web applications to **store and retrieve location and user data**.

Mobile app will always send location data in a JSON format:

```
{
  "userId": "2e3b11b0-07a4-4873-8de5-d2ae2eab26b2",
  "createdOn": "2022-02-08T11:44:00.524",
  "location": {
    "latitude": 52.25742342295784,
    "longitude": 10.540583401747602
  }
}
```

Suppose we have ~100 active mobile app users, and each of them sends their location data every minute of every day.

Web app will perform the following operations on this backend:

1. Save or update user data:

```
{
  "userId": "2e3b11b0-07a4-4873-8de5-d2ae2eab26b2",
  "email": "alex.schmid@gmail.com",
  "firstName": "Alex",
  "secondName": "Schmid"
}
```

2. Get user data with latest location (if exists) by user-ID, response should be:

```
{
  "userId": "2e3b11b0-07a4-4873-8de5-d2ae2eab26b2",
  "email": "alex.schmid@gmail.com",
  "firstName": "Alex",
  "secondName": "Schmid",
  "location": {
    "latitude": 52.25742342295784,
    "longitude": 10.540583401747602
  }
}
```

3. Get user locations by date time range, response should be:

```
{
  "userId": "2e3b11b0-07a4-4873-8de5-d2ae2eab26b2",
  "locations": [
    {
      "createdOn": "2022-02-08T11:44:00.524",
      "location": {
        "latitude": 52.25742342295784,
        "longitude": 10.540583401747602
      }
    },
    {
      "createdOn": "2022-02-08T12:05:00.124",
      "location": {
        "latitude": 52.25700491800493,
        "longitude": 10.528306568625961
      }
    }
  ]
}
```

Since requests from the web app will be generated by users clicking in the web-UI, the number of incoming requests will be fewer, compared to the number of requests coming from the mobile app.

The backend must be implemented using Spring or Micronaut, written in Java or Kotlin. Other third-party libraries are allowed as well. It would be nice to have tests (unit/integration) and documentation (Javadoc, README.md, etc...). Try to use common best practices wherever you can.

Please do not send your assignment via email, instead share a link to the project hosted on GitHub or a similar site.