Sample Lab Test 2:

Type: Individual Test
Length: 2 days.
Total mark: 40
Submission: code as zip file and readme.doc that contains links of deployment if any

Requirements:

Texas Instruments company needs to build a system to monitor air and water quality.

The system includes a number of sensors with information: sensor type (pH, CO, etc), unit (0-7, m2/l), status (good bad).

Each sensor will send its data value to a REST API every 5 minutes.

Users can see data in a dashboard:

- Latest data by each sensor
- Data in a period (from date to date)
- Charts: a line chart that shows how value is changed over time.

1. Design this system using ReactJS and SpringBoot, PostgreSQL
   - Data needs to arrive a kafka message queue before inserting to database
   - When a user reads data, data will be served from a redis cache.
2. Deploy it into a cloud platform
3. Write a short report (3 pages max) to explain your work.

Marking rubrics: Total 40

- Frontend: 15
- Backend: 15
- Design, Quality, Non-functionalities: 10