Distributed Systems (2022-2023)
Assignment 2: Microservices

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Course Layout

- **Theoretical exam (50%)**

- **Two assignments : Webservices & Microservices (50%)**
  - Introductory session
  - Self-contained & equally weighted

Assignment 2 : Microservices

- **Goal :**
  - Learn how to decompose a scenario in microservices
  - Learn how to implement a microservice architecture using Docker / Podman

- **Requirements:**
  - Decompose a scenario in microservices
  - You should make graceful failure possible
  - Implement a microservice architecture using Docker / Podman

Assignment 2 : Microservices

- **Good to know :**
  - Toy problem, so **don’t focus on real-world problems**
    - i.e., **no** security, SQL injections, … **required**
  - You will be provided a UI script, take a look at it before implementing
  - Don’t reinvent the wheel, check Dockerhub for useful images

Assignment 2 : Microservices

- **Requirements :**
  - Given a set of Features:
    - Decompose in Microservices
    - Determine data storage needs for each microservice
    - Determine connections between microservices
  - Implement Features using Docker.
  - You should use REST for all communication between microservices!

Assignment 2 : Microservices

- **Tools :**
  - python3 (using Flask & Flask-RESTful)
  - Docker & Docker-compose / Podman & Podman-compose
  - *Any* database dialect
- **Deliverables:**
  - Report of the decomposed scenario (in PDF format).
  - Report the endpoints of implemented features (similar to Assignment 1).
  - Docker architecture implementing selected features.
  - Small demo of your microservice architecture.

Submission

- **The Lab**
  - Deadline: 16 May 2023 - 23:59.
  - Create zip as “DS-Assignment2-Snumber-LastName.zip” including solution files.
    - i.e., DS-Assignment2-s0164228- Vandersmissen.zip
  - The report should be in the PDF format (add your name).
  - Submit through Blackboard.
  - Copying or showing solutions among students is not allowed.
  - Each student works individually.
  - You should explain and comment each part of your code.
- **Demo:**
  - Demo: 24 May 2023
  - PS: detailed information will be announced later.

Questions?

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