Final project guidelines

The task

After giving an individual presentation on the tools (see the presentation guidelines), the final project consist in developing a microservice system and create a DevOps pipeline for its continuous integration and deployment with testing, monitoring, logging, ...

Nothing is written in stone and for special reasons and motivations the project can be personalized for the different individuals or groups.

It is recommended that the project is performed in small groups (Amazon 2 pizza rule!). The formation of groups is decided in a randomic way.

The groups can propose a project to develop. Good candidate projects are those that involve the development of microservices, and use tools for the continuous integration/deployment, testing, monitor, logging, security of the system. The tasks to perform to have a minimal viable project are discussed with the lecturer, that can authorize it.

If a group has no idea or the proposal presents weaknesses, a standard project will be assigned ex officio.

To pass the exam the students has to: * conclude a successful presentation of the tools, * fulfill the task required on the agreed project, * write in the group the project report (see details below) * write the individual contribution report (see details below) * discuss the project

Please remember to not undermine the development of the Dev(Sec)Ops pipeline. You will have to find the right balance between developing all the features and the pipeline. In case of problems, you are always welcome to discuss the tradeoffs with me to better understand what to prioritize.

Code

You have to hand in in a single zip file all the code and the documentation developed to run the system, run and set up the CI/CD pipeline.

Clear instructions for running the project and setting up the pipeline must be included in a separate README.md file included in code zip file.

Moreover, in the zip file you should also include * a document called "USER_STORIES" to list the user stories developed for your application. * a document called "PROJECT_TASKS.md" in which you report the status achievement of all the tasks originally assigned marking them as complete, partially complete, not done.

All the members of the group must upload the same zip file.

Guidelines for the project report

Project Report

All the member of the group must write a unique and shared report detailing the work perform to implement the project. The report must not exceed 20 pages excluding citations and the first page. A template for the group report is available with a suggestion for the structure. The report should be submitted in PDF and named "group_report_NUMBER.pdf" where NUMBER is your group number.

Individual Contribution Report

All the students have to write an individual contribution report. The report must not exceed 2 pages excluding citations and the first page. A template for the individual report is available with a suggestion for the structure. The report should be submitted in PDF and named "individual_report_NAME_SURNAME_GROUP.pdf" where NAME, SURNAME, and GROUP should be replaced by your name, surname, and group number.

Discussion

The students will have an oral discussion to clarify some points on the project. The discussion will be structured first as a group presentation for a demo of the developed project. The demo presentation should visualize at least the execution of a user story, the description of the architecture and the pipeline, and discuss important properties (e.g., scalability, availability, security, ...). This group discussion should indicatively last 30 minutes (20 min presentation, 10 min questions). The group discussion will be followed by a 5/10 minutes individual questions and answers session.