

Lab Project

Development of a web service application and client library

From now to the end of the course, during the lab sessions, you will work on a practical project.

The project will be done in **couples**. You can freely choose how to form the groups.

The idea of the project is to apply the various concepts we are learning during the course to develop a web service application and a client library. During the lab sessions you will have the possibility to work on the project and integrate the new topics seen during the lectures.

Each group can choose the application domain they prefer (e.g. formula 1, wheather, tennis, ...), but there cannot be two or more groups working on the same domain.

1 Development

The application to be develop must be composed of a backend web service and a client library, able to interact with the service.

The backend web service has the following requirements, it must be able to:

- read data from a data source of your choice (files, database, ...)
- provide basic read/write operations on the data source (e.g. get the f1 driver with name Hakkinen, create a new driver, get the list of races, ...)
- provide additional useful operations on your data set (e.g. data aggregation, statistics, custom queries, ...)
- developed using the flask framework

The client library must be able to allow a user (developer) to easily interact with your web service to perform all the exposed operations. Furthermore, it must be also able to generate some diagrams (e.g. plots) with the data obtained by the webservice.

The project has the following requirements, it must:

- be managed using the provided GIT repository
- be object oriented (class based) and make the most out of the programming related topics discussed during the course
- manage external dependencies using a tool such as pip, pipenv or conda
- be fully unit tested
- be built/distributed as a wheel package (client library only)

The number and complexity of the operations you intend to provide both for the web service and client must be discussed and approved during the initial phase of the project.

As in a real-life project, expect the possibility of small requirements changes by your customer.

2 Grading

Delivrables

1. Demo application that uses the client library features to interact with the web service
2. Source code of all the implemented components, versioned on the provided GIT repository on the `master` branch
3. Project documentation (more details about the expected structure/content will be given)
4. Presentation + demo (30 minutes per group), done during the last week of the semester

Grading

The grading will consider multiple aspects:

- correct implementation of the features according to the project requirements and constraints
- quality of the code (correct usage of the concepts seen during the course)
- quality and completeness of the documentation
- content and form of the presentation and demo

3 Submission

The deadline for the submission of the project deliverables is **Sunday, 16th of January, 23:59**