EXAM PROJECT - DATA SEMANTICS FOR ARTS **Semantic Web and Linked data**

**Each project can be carried out by a single student or a group of up to 3 students.

STEP 1

The project will be first presented in class and evaluated using peer review. The output is a report with requests for revisions, if any.

All the project members need to be present the day the project is presented and contribute to the presentation.

If a student does not attend classes, (s)he can skip this step and submit the project without the benefit of peer review and of revision suggestions

STEP 2

The project will be revised according to the review, uploaded on AulaWeb at least two days before the exam, and briefly presented the day of the exam.

Each member can take the exam in the session (s)he prefers.

The exam project must contain the design document and the developed code, as well as the link, if available online. Everything must be compressed into a zip file.
The file should be named as follows: year-surnames of group members.zip.

GOAL: building a website composed of one or more pages annotated according to the principles of the Semantic Web, whose content can be **processed by a software agent**, other than humans, and used other services or simply to store and query them, in one of the fields of the Cultural and Creative Sectors (e.g., museums, music, digital libraries, etc.).

1. **DESIGN**: **Identification of requirements and definition of specifications**

   - Identification of the **target, in terms of potential software agents that will process the content** of the site
   - Identification of annotation objectives, i.e. identification of the content of the website that you want to be processable by software agents.
   - Analysis of **ontologies and vocabularies** available on the Web to annotate the contents identified in the above step
   - Choosing the available ontologies and vocabularies (Schema is also fine)
   - Identification of any content of your website that requires the creation of a new ontology or the extension of an existing one with concepts from other ontologies

- ***Output***:
    - Detailed design document that reports all the steps above
    - Summary presentation (using power point or google presentations)

2. DEVELOPMENT

- **Website Creation**: create a website consisting of one or more pages.
- **Creating a new ontology or extending existing ones**
    - Use Protégé or other tools for the creation of the T-Box
    - Define the IRI of the ontology
    - Export the ontology to a language of your choice

      Note: the ontology must not contain individuals since the instances will be the contents of the web pages themselves suitably structured and annotated.

- **Annotate the webpages using JSON-LD**
    - Note: Use concepts from both the existing ontologies and the newly created ontologies, appropriately declaring the IRI of the ontologies and their respective prefixes, and then using the prefixes to refer to the terms of each ontology.

      Note: URIs must be absolute URIs

- **Testing**
    - check the correctness of the pages using the available testing tools

- **Create SPARQL queries to retrieve useful content from the dataset (i.e., the annotated webpages)**

- ***Output***:
    - The vocabulary/ontology
    - The annotated website
    - A text file with some SPARQL queries and the description of their intended meaning
    - A report of the tests and queries carried out
    - summary presentation for the oral exam (using power point or google presentations)