

SUPERVISED AND EXPERIENTIAL LEARNING

(Master in Artificial Intelligence, UPC-URV-UB)

Spring semester, Course 2022/2023

May 4th, 2023

Practical Work 3 (PW3, Teamgroup): a CBR prototype for a synthetic task: planning / design / configuration in a concrete domain

A CBR planning/design/configuration prototype system should be developed in a *team-group of four people*. The domain could be chosen by the team, **upon agreement with the professor**. It could be oriented to a design or configuration or temporal planning domain (cooking recipes, cocktail preparation, robot planner, travel planner, architectural design, etc.).

Deliverable

The Delivery (ZIP file) must contain the following items:

1. **Documentation (max. 20 pages with 11-point letter size):**
 - a. **Technical document** about the development of the work (**a separated pdf file**)
 - i. **Introduction**
 1. Basic principles of the CBR engine project. The general ideas of the CBR engine implemented, from a technical point of view.
That means explaining what are the general implementation guidelines of your project (which kind of Case Library structure, which kind of case structure, etc., without giving more details).
 2. Chosen application domain
 - ii. **Requirement Analysis of the CBR engine Project.** The requirements include both the *user requirements* (main functionalities of the system that user needs, i.e., what the system must do?) and the *technical requirements* of the system (maximum time response of the system, maximum memory size of the system, etc.)
 - iii. **Functional Architecture of the CBR engine Project**, describing the input, the output, the different components of the system and their interactions with a diagram and a brief explanation of each component.
 - iv. **Proposed CBR engine Project solution design:**
 1. Description of the Case Structure and Case Library structure designed.
 2. Description of the Methods implementing each CBR cycle step (retrieval, adaptation, evaluation and learning)

- v. **Testing and evaluation of the CBR system**
 - vi. **Discussion of results**
- b. **User manual (another pdf file)**
 - i. **Description of the CBR engine system goals**
 - ii. **Start-up/Shutdown of the system**
 - iii. **Description of the different functionalities of the system**
 - iv. **Examples of use in the concrete application**
- 2. Presentation slides of the CBR system (13 slides): a summary of the important features of each part of the documentation.
- 3. Software source code of the CBR system conveniently commented
- 4. Executable file of the system, or/and precise instructions to execute it.
- 5. Folder containing the original dataset/s (input data of the system) used for testing
- 6. File README.txt specifying the structure and contents of the Delivery ZIP file, including comments on the contents of the different files

The Delivery of the PW3 (documentation and software code of the project) is due on **June 14th, 2023**, and must be sent through the Racó.

Qualification

The qualification of this work will take into account both the quality/functionality of the software delivered (correctness, efficiency, scalability), the robustness of the code, the written documentation delivered, and the public presentation of the work.

PW3 is due on June 14th, 2023

Public Presentation of PW3 by all team-works will be on June 16th, 2023, from 10-13 in a room to be determined