2SC6490 – Development of a sensor monitoring system

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Language of instruction: FRANCAIS
Campus: CAMPUS DE RENNES
Workload (HEE): 40
On-site hours (HPE): 27,00

Description

In partnership with other students of the campus following the thematic sequences "Smart Building" and "Health" STs, the objective is to develop the information system that will enable the collection and processing of data from sensors, and to provide services for the regulation. The educational objective is to perceive the specificities of the development of applications in the cloud et to discover the interest of design choices to facilitate the software evolution, and the benefits of an AGILE organization.

Quarter number
ST5

Prerequisites (in terms of CS courses)

- Information System and Programming
- Algorithm and complexity

Syllabus

From a technical point of view, we will aim to develop by a team a complete infrastructure for collecting, processing and displaying data from sensors. Data from other project groups in other STs will pushed and hosted on a local server but will then be pushed onto a cloud-like infrastructure. At this stage, no treatment is performed. The data is then re-extracted and can be processed to be projected into a final data model suitable for presentation. This data will be stored in a database to be implemented by the development team. This data is then presented via a REST API to the part of the team developing the application frontend.

Class components (lecture, labs, etc.)
Students will be divided into a project team organized around a project leader (which can change every day). At the beginning of the day, each project team will be given features to be provided at the end of the day. In addition, every day, minor improvements will have to be made in order to respond as quickly as possible to the needs expressed by students from other STs during a meeting bringing together all the ST students concerned.

To support the EI, it is expected:

- a computer room that can accommodate up to 25 people
- access to a Cloud Computing infrastructure
- possible VPNs to connect the different software components

Grading
Oral presentations

Resources

- computers
- sensors for testing and from other STs

Learning outcomes covered on the course

- Understand and model the client requests
- Implement as a team a solution answering the client requests

Description of the skills acquired at the end of the course

- C4.1 Analyse customer needs, the constraints of other stakeholders as well as include societal challenges.

Evaluated by a presentation of the global solution fully integrated with the development of other ST.

- C7.1 Persuade at the level of core values; to be clear about objectives and expected results.

Evaluated by a non technical presentation of the global solution in coordination with other ST.

SCIENCE AND ENGINEERING CHALLENGE N°7 COURSES