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EU Title: **ISI Transversal Project, Techdays**
EU code: ING 3166
Hourly volume (monitoring): **30h**

Theme: Management and monitoring of construction works

BTP Sarl is a company that operates in the management and monitoring of construction projects. One of its concerns is to be able to monitor the management of inputs and outputs of construction materials. The company will need to be able to easily monitor this material management from a tablet or computer.

The objective is to set up software (more precisely a web application) allowing real-time traceability of construction work monitoring as well as construction project management.

A construction project (construction site) refers to the construction of a house, a building, a road, a bridge, a business, etc. A construction project is linked to a field of health, education, finance, telecommunications, etc. It is identified by a project owner, a project manager (project management), a label, the location, the nature of the work (bridge, house, building, etc.), the start date and the duration of the project. The construction project has the following stages (Started, In progress, Completed, Cancelled).

On a construction site, there is a set of construction equipment and a cash register. The company wants to record the input/output operations of construction materials and know the stock of materials. The input and output are conditioned by the materials in stock. The material is characterized by a code (identifier), the name of the material, the provider, the nature of material (iron, wood, etc.). The cash register is used to record the input and output operations of money relating to the construction site: this may involve the purchase or rental of material. NB: the cash register and the stock are linked.

The recording of an input/output operation of material is supervised by the project manager, this form requires to provide the list of construction materials, their respective quantities, the reason for the operation, the type of operation (input or output), the person in charge (who can be the store manager), the registration date. NB: please save the contact (name, telephone number, and profession) in order to reuse it later.

Just like the recording of a cash in/out transaction is supervised by the project manager. The request for such an operation consists of filling in the following information: the type of operation (input/output), the reason (which can be linked to construction material if it is a purchase), the amount , the contact of the person, the date of registration.

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Regarding the Construction Work Monitoring, it will be a question of taking photos directly from the device's Camera. The collection of photos taken is considered a photo gallery accessible only via the application. For each photo, allow the project manager to associate an illustrative text.

The administrator can manage a set of users (project managers). Users represent the people in charge of managing a construction site. The administrator can create one or more construction sites to which he associates a project manager. The project manager can only see the projects for which he is assigned. The administrator is the only one authorized to modify or delete a construction site.

Expressions of needs

- The administrator will be able to manage construction sites, users and their assignments;
- The user is responsible for managing (registration, consultation, modification and deletion) the construction materials (including their quantity) and the cash register;
- The user will be able to import construction materials from an Excel file;
- The user is responsible for managing requests/needs for building materials. During the request process, the form will only present the material that is available in a list;
- The user will also be able to filter the list of materials and equipment;
- The project manager has a dashboard from which he can monitor the inflow and outflow of construction materials on different sites;
- The project manager has a dashboard to monitor the progress of the construction sites in terms of percentage. Here the project manager after taking a photo can assign a score out of 100. This score must be proportional to the deadline set and configured by the administrator;
- Consult the list of construction materials as well as the quantity remaining in the bank (in stock);
- Record the entry and exit of construction equipment;
- Recording an entry (construction material) is considered a purchase which will be taken into account in the Fund;
- The possibility for the project manager to record the progress of the worksite via photos, a commentary describing the activities, and the wording of the task at each project period;
- Ergonomically, the application must be intuitive, fluid and simple to use;
- The administrator will need to have an overview of each project manager's dashboards;

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Detailed objectives:

This project will cover:

- Define a needs analysis document (specifications)
- Define a design document
- Define an implementation document
- Define a test document

Deliverables

- Analysis document (needs analysis and specifications) – *semester 1*
- Design document – *semester 1 and 2*
- Test Specification Document – *Semester 2*
- Implementation – *semester 2*
- The database in SQL format – *semester 2*
- User Guide – *Semester 2*
- Source codes – *semester 2.* NB: **the source codes will be hosted in a directory in the form sji_btp2025_isi3_en** .
- Web services documentation – *semester 2* .

Contact persons :

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