**1 Project Overview**

You are a member of an association, Forma-Green. Forma-Green reintroduces plants in schools, universities, training schools, training centers, This association allows each member to receive discounts in partner shops against a participation allowing the installation and maintenance of green spaces. Forma-Green contacts you so that you take charge of their project of digitalization of the system of the management of the members and the green spaces.

**2 Project Specifications**

The main goal of this project is to develop the management system interface. You can create a precise documentation for the architecture.

**2.1Project management**

You will produce a document allowing Forma-Green to follow the progress of the project. Establish a provisional budget, a schedule, and your technological choices.

**2.2 Managing members**

Members are registered via a paper/cardboard card system and an excel file.

FormaGreen wants a digital system, allowing to manage the members, to follow the subscriptions (donations), the validity dates of the subscriptions, the edition of barcode and/or QR Code on the subscribers' cards. The members can be lambda people and training centers.

**2.3 Web interface**

Forma-Green wants to display via a web and/or mobile application the customer's file (by scanning the barcode/QR-Code).

Forma-Green also wishes to be able to display the list of all the establishments where green spaces are installed.

The web interface must allow to display on a map the vegetalized points.

**2.4 Risk management**

The implementation of such a system is always risky, Forma-Green would like to be reassured:

• Produce a documentation with the description of the architecture set up...

• Make a list of all the risks that may occur, how you avoided some of them, how you overcame others, who would be in charge of these risks.

• You can perform a penetration test of your system.

**3 Functional Analysis**

You must start the project by analyzing the data to be managed.

**3.1Data Structure Define the data structure for:**

• Member

• Volunteer

• Forming structure

• Green area

• Partnership

**3.2 Data security**

High availability and redundancy cannot prevent certain damage that your infrastructure may suffer.

In case of ultimate emergency, you'll have to implement a backup plan in a third data center (server) located outside the association.

This backup must take place every day at 4AM and must include a dump of the entire database(s) and every file used.

The physical part of the saving is delegated to a third part who just asks you to copy every data that must be saved on a frontal server in its data center.

• Secure data by defining security rules

• Define the backup rules and frequency

• Define the rules to guarantee the availability of information

**4 Software Development**

You are free to use any language/libraries/platform you want for the app.

**5 Deliverables**

Students should include the following elements in their final delivery:

• A zip archive with the project source code. The source code must also come with the build system used (Project file, auto-tools, libraries...), if any.

• Project documentation

o Technical documentation explaining your choices and/or implementation choices/details including in particular a network map for the architecture

o User manual (must be understandable by the client)

The first document is an academic document. Addressed to the reader as a teacher, not as a client. These documents can be in French or in English, at your convenience.

**6 Graded Items**

The project will be graded as follow, on a 230/200 scale:

**Specification and Documentation (50 points)**

• Complete Requirement Specification with your work plan (10 points)

• Risk analysis (20 points)

• User documentation (10 points)

• Technical documentation (10 points)

**Architecture (30 points)**

• Secure system architecture (written, designed) (30 points)

**Interface (20 points)**

• Web or mobile interface (20 points)

o The client can check members data after scanning the code

o The members can see the list of partners and gifts (like L214 partnerships)

**Management system (100 points)**

• Membership management (40 points)

• Add / delete a member (10 points)

• QR-Code and/or barcode for a member (10 points)

• Edit a member (identify the volunteers, donors, …) (10 points)

• Check the “subscription“ validity date (10 points)

• QR-Code / barcode reading system (30 points)

• Green areas identification / list (30 points)

• Map to find the vegetalized centers (15 points)

• List of all the training centers / schools + Name of the representative (15 points)

• Add / edit / remove a school