Projet de Groupes
M.Sc. 1

Année Académique 2020-2021

Évaluation de Rattrapage

SUMMARY

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.

2.1 Project 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. Forma-Green 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.

3.1 Data 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
    - Technical documentation explaining your choices and/or implementation choices/details including in particular a network map for the architecture
    - 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)
    - The client can check members data after scanning the code

- 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

Bonus features (30 points)