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1. Introduction.

The Autonomous University of Madrid (UAM) has reported the numerous problems it has on detecting faults that arise on its campus and its facilities, whose reparation usually takes excessive time and is poorly organised. A late detection of faults in the facilities delays its reparation, stopping its users to continue using them as normal and complicating the maintenance staff labour. Regarding the wishes of the campus users and realising the maintenance problems it has, the UAM has organised a contest to choose the best project proposal that solves them.

This is where our organization, Triforce, enters the scene: we have analyzed the problem exhaustively and designed a web application, Fault Manager Lite (FML), that meets all the requirements expected, solves the problems and also includes new extra features that makes it even more useful.

1.1. Purpose.

The purpose of this Software Requirements Specification (SRS) document is to provide a

detailed description of the functionalities of the FML system. This document will cover each of the system’s intended features, as well as offer a preliminary glimpse of the software application’s User Interface (UI).

1.2. Methodology.

The methodological procedure followed for preparing the SRS of the software system FML we have developed includes the following techniques:

* Deep analysis of the information given by the UAM: the potential maintenance problem it has, the causes that lead to this problem and various aspects we must consider before proceeding to the next step (web application; works on PCs, tablets and smartphones; target users; basic purpose).
* Application of the technique of brainstorming to generate general ideas for the application. Brainstorming was then applied to these general ideas in order to give shape to them. The results of the brainstorm carried out are cleaned up in the Annex A. This step resulted on the detection of 5 subsystems.
* Research on the Internet about other similar systems, analyzing the functionality of these systems and describing them in a structured way by specifying their advantages and disadvantages, and extracting good ideas to incorporate to our own project, increasing its market value. These ideas also helped putting the final touches to our ideas from the brainstorm.
* Interview with one member of the UAM's technical staff. In this interview we clarified the obscure ideas we still had, and modified some of our previous ideas to adapt them to the answers given. The answers to the interview were well-considered; as the technical staff will be the main user of our application, their point of view is important to us.
* Departing from the ideas obtained, defined the requirements (functional and non-functional) of the application and design attractive mock-ups that fulfil them. These mock-ups are only a demo and may change in the final version of the application.

2. Product Description.

FML is based on the jolly cooperation between the users of the facilities of the UAM campus and the maintenance staff in charge of them.

As the users will be the ones that will detect the sooner faults on the facilities the campus offers them, they are also the most suitable to report the problems they are having, in order to getting them fixed as soon as possible. With the FML web application, it will only take less than a minute to fill the form and send it to the maintenance staff.

Using the reports of faults detected in the campus, the maintenance personnel will stop losing its precious time revising the installations looking for faults and will be able to focus on the repairs. Apart from this benefit, the maintenance staff will also have a better way to coordinate efforts, as the FML will provide an automatic assignment system to assign repairs to each of the members avoiding overloading any of them and taking into account their distance to the problem, saving time on displacements.

In summary, the users will be able to easily report faults on facilities they are using in order to have them fixed in the less time possible, while the maintenance personnel will multiply its current performance as the majority of their resources will stop being wasted on revisions, but on repairs. We state that the FML web application is the answer to the UAM problems, as we will show you with this SRS.

2.1. Goals and Functionality.

Our main goal is the development of an extreme-functional, bug-free web application, that runs either on PCs, tablets or smartphones and facilitates the labour of the maintenance staff of the UAM.

Based on the jolly cooperation between the members of the UAM community (students, teaching and research staff and administration and services personnel) and the maintenance personnel of the facilities and installations of the UAM campus, this app has been designed to solved the potential maintenance problems that the UAM has declared to have.

The problems we aim to alleviate with this app include the following:

* Difficulty of detecting faults on facilities of the campus.
* Late detection of the problems, which implies late repairs of them.
* Excessive resources and time wasted on revisions looking for potential faults.
* Bad coordination between members of the technical staff.
* Frequently overloading of some repairmen because of bad coordination.
* Inability of a repairman to instantly inform that a fault has just been solved.
* Difficulty of the users to report faults to the maintenance services.
* The report system lacks of mobility functionality.
* Lack of real-time visualization of pending and finished repairs.
* Lack of real-time visualization of assigned tasks.
* No faults history.
* No statistics of faults.

The FML system has been designed to resolve these problems making use of a user-friendly interface, avoiding unnecessary or distracting buttons or effects. This system has been divided in several modules listed below, each of those offering one specific functionality and, in conjunction, solving the problems listed above:

* Task Manager:
* Report System:
* Notifications and Messaging System:
* Users and Profile Managers:
* Faults History and Statistics:

There are several applications 'on the market' which are similar to our proposed app in some way or another and they could represent real and competitive alternatives to ours. However, none of these web applications can offer all the features FML offers (furthermore, we plan on adding some features which are not currently available in any of these applications), so our system is indeed the best solution proposed to solve the problems the UAM maintenance staff has to deal with. After our research of the Internet, a comparison of these competitors applications is gathered in Annex B.

2.2. Initial Catalog Requirements.

The analysis of the project and general requirements, the brainstorming applied on this project and the research performed on other similar applications, led us to a precise definition of requirements that our application, Fault Manager Lite, will have to meet in order to be the desired solution that our client, the Autonomous University of Madrid, needs:

2.2.1. Functional Requirements.