

Sede Regional San Carlos

Computer Engineering Department

Componentes y comunicaciones en internet

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First programmed project: Audits

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# Problem Description

The application to develop will evaluate the state of the institution assets, to do this the user will must indicate its location guided by the path: headquarters, building and room. Once a path is marked, the assets list will be ready to be evaluated.

It will allow evaluate all the assets within the selected room by using different indicators. Once a revision is done, the user will be enabling to choose if the audit is ready or pending to be evaluated later.

It also will have a history where all completed audits can be seen and continue with the uncompleted ones, the way to identify them will be by using an especial color or an icon.

In synthesis, the application will have 4 main views: the login for authenticate the users, the main view where rooms will be selected, the audits history view and by last the view where audits are managed.

# Problem Solution

## Design

The first part was the design. We had to think the way in which we wanted to show the four views. As soon as you enter the site you find the Login view, with just a few controls to enter the username and password, and click or tap a button to continue.

Next we needed to show a Main view. In this one, there should be two options: one for entering a new audit, and another one to navigate to the history view. The creation of a new audit would be through a dialog window. Here you could choose a headquarters, then a sub-list of buildings. Subsequently, a list of rooms grouped by floor would show up whenever a building is chosen. Finally, the button to create the audit will become enabled. Once clicked/tapped, the button will navigate to the Audit View to be modified.

In the Audit view you can see a list of assets. Each one is editable though a series of controls, including: a check to make sure the asset is in the room, a slider to select a score from 1 to 10, a switch to select a state (good or bad) and a comment. The audit can also save a comment.

From the History view, you can see the list of all the audits that are pending and completed. The list also shows relevant information about every audit, including the date it was created and the place (headquarters, building and room). From this list, the user can navigate to each audit. There’s also the option of removing it. In touch-supporting devices, the slide left or slide right gesture will prompt the user, while when there’s no touch support, a button will be shown.

## Data

Everything is saved within a JSON object, declared in the audit JavaScript file. The structure is as follows:

* Headquarters
  + Name
  + Buildings
    - Name
    - Rooms
      * Name
      * Floor
      * Assets
        + ID
        + Score
        + State
        + In-room
        + Comment

The exception to this is the audit list, which is declared separately. Each audit has information about the Room it is assigned to.

## Non-functional requirements

The software is developed with mobile support by using JQuery Mobile library, version 1.3.0.

It also includes a css file that contains different media queries as part of the responsive design to show an adequate user interface in each device.

# Result Analysis

The final results are presented in the following table; each part has a state column that indicates how complete it is.

|  |  |
| --- | --- |
| Functional and non-functional requirements | State |
| Login part | Completed |
| Main part | Completed |
| Audits part | Completed |
| History part | Completed |
| Responsive Design | Completed |
| Runs on different browsers | Completed |

All the functional parts indicated include the view part and do the list of requested conditions.

# Conclusions and Recommendations

The project realized has been important for us to know more about the web development, to learn the available mobile technologies and the different components that the Internet provides.

By researching about jQuery, jQuery mobile frameworks and responsive design we have learned different techniques and acquire the basic knowledge to understand some part of the current mobile and web development.

It also could contribute with the Computer Engineering School or in general for the entire institute, because the administrative control of the assets in an institution is very important to do, so an application like this could help to do that control easier.

According with the given time to develop the application, it was the necessary to complete all the requirements.

# Cited literature

CSS Media Queries for iPads & iPhones, used to get the media queries needed for the responsive design. <http://www.stephentgilbert.com/mediaqueries/>

Responsive design device resolution, reference used to know different device screen resolutions for the responsive design. <http://spirelightmedia.com/resources/responsive-design-device-resolution-reference>