



Engenharia Informática, 2014/2015

Aplicações para a Internet

Project Specification

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Project Portfolio Platform

The information available in the Moodle platform is part of this project specification.

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1 Introduction

This project's primary objective is to consolidate the knowledge acquired in the curricular unit of Internet Applications. For the implementation of this project, students should demonstrate that they know how to apply relevant competences in the development of internet applications.

This document defines the application requirements and specifications relevant for the project implementation. Related questions should be posted in the corresponding forum, available at moodle's curricular unit page (available at <http://ead.ipleiria.pt/ucs201415/mod/forum/view.php?id=93584>). Answers provided by the lecturers on this forum are considered part of the project specification.

The next section presents the motivation for the proposed theme and the following section its objectives. The remaining sections present the requirements, data model and grading details.

Note: This document may be subject to updates and corrections, which will be made available on the Moodle platform.

2 Motivation

The portfolio of projects performed by an institution is one of its most important business cards. Presenting the projects carried out and their success demonstrates the know how of an institution and may help in the uptake of new projects. For this reason, it is important to keep updated records of completed projects and relevant information about them, whether they are news published by the media, or positive notes and observations on the projects.

The Informatics Engineering Department (DEI) implements several projects per year: final course projects, research projects and projects for external entities. The information about the different research projects is only gathered on a need to use basis. This approach results in projects being left out or not being fully presented, because of the information missing, such as videos or posters.

The web application proposed in this document includes the necessary functionality to register, update and publicly promote the information about projects of an institution. The projects implemented at the DEI will provide the test scenario for the implemented application.

3 Project Goals

This document presents a web application that is able to register and disseminate a portfolio of projects. The application should include the following features, which are detailed in the following sections of this document:

- User management (administrator, editor and author);
- Approve content to include in the portfolio of projects;
- Create, edit and remove a project's technical sheet;
- Insertion and removal of multimedia content to the portfolio of projects;
- Insertion and approval of public comments to a project;
- Project tagging;
- Search and list of projects;
- Dashboard with elements waiting for approval (technical sheets, multimedia contents, comments and tags).

Access to the different features is controlled by the user's roles. There are 3 roles that can be assigned to a user account:

- Administrator: user that can manage users of the platform, including assigning roles to users;
- Editor: user that has the power to approve content produced by authors;
- Author: user that may insert, update or remove content on the platform. All content changes performed by an Author require the approval of an Editor to take effect¹.

Comments to projects also require the approval of an Editor to become effective.

¹If an author is both an Editor, changes are automatically approved-

4 Structure Overview

This section presents an overview of the platform to be developed. The exact pages layout, the adopted colour scheme and the used typography and graphics are decided by each group. However, bear in mind that the institution used as case study (IPLeiria) already has a brand that should be adopted.

The pages of the website to be developed should have a consistent visual and behaviour. Thus, all pages should share structural elements and graphical elements such as the header and the footer.

All approved content on the platform can be made public and only authenticated users can add, edit or remove content related to the projects (except for comments that can be submitted by unauthenticated users).

4.1 Initial (“Landing”) Page

The Initial Page is publicly available and should include the following content:

- Projects highlights (can be implemented as a carousel of 3 to 6 projects' images);
- Most recent projects (short list of projects that had their contents updated);
- Authentication area;
- Search field (results should be presented in a “projects browser”);
- Access to projects browser.

The group is free to include additional content that they may find relevant (for example, a “tag cloud”).

4.2 Projects' Browser

The projects' browser lists all of the projects (over several pages) with search and filtering mechanisms. Filters should reflect the fields in the “technical sheet” and tags associated with the projects.

The list of projects must be sortable at least by title (alphabetic order), date (most recent first) and responsible person's name (alphabetic order). Projects with images associated must include a thumbnail in the list.

4.3 Project Detail

The Project Detail presents the “technical sheet” of the project and related multimedia content, tags and approved comments. This content may be broken down into several pages as long as all of them have a clear identification of the project they are associated with. For example, the first page of a Project Detail may include only one or two pictures and a link to a photo or video gallery. The photo and video gallery should have the project clearly identified.

The Project Detail also allows visitors (registered and unregistered users) to submit comments about the project and to request a contact. Contact requests generate an email to the persons listed as responsible by the project.

Authenticated users with the Author role may submit content to be associated with this project, such as:

- Posters (png, pdf);
- Photos;
- Youtube URLs;
- Documents and news;
- External references (links to pages external to the project).

The Author of a content associated with a project may only edit or remove his/her own content, nevertheless, such update is subject to the Editor's approval. The insert and editing of content may be presented on a separate "page".

Any content inserted, edited or removed by an authenticated user with the role of Editor is "automatically" approved. Furthermore, editors may remove or edit content created by other authors.

4.4 User Management

This page is only accessible to users with Administrator role. Other users do not have access to this page (neither through menus/links, nor through direct URL access).

The User Management page allows an Administrator to create, edit, delete ² or disable any user account. The main content of this page is the (paged) list of users, sortable, and with a search filter. The edit account, reset of password and account deletion ³ functionalities should be available from the list entries.

4.5 Account Creation / Edit

This page is only accessible to users with the Administrator role. Other users do not have access to this page (neither through menus/links nor through direct URL access).

This page allows administrators to add users to the system or edit information about a user account. Information about the user account has the following fields (all fields not specified as optional are mandatory):

- Name;
- Email address;

²Only user accounts with no associated project content may be deleted

³Account deletion requires the confirmation of the operation

- Account password⁴;
- Institution (defaults to Instituto Politécnico de Leiria);
- Position (student, professor, etc.);
- Profile photo (optional);
- Enable/disable status;
- Alternative email (optional);
- Profile URL (optional link to a personal profile presentation such as institutional home page, LinkedIn, etc.).

4.6 Project Technical Sheet Creation / Editing

This page is only accessible to users with the Author role. Other users do not have access to this page (neither through menus/links nor through direct URL access).

This page allows authors to submit new projects to the portfolio for approval. If the user is an Editor, the Technical Sheet is automatically approved. The technical sheet should include the following fields (all fields not specified as optional are mandatory):

- Project name;
- Acronym (optional);
- Project type (e.g. final course project, external research project, etc.)
- Project description;
- Thematic area;
- Responsible persons (must be a user of the platform, and by default is the person that submits the technical sheet);
- Project team elements (optional);
- Institutions involved (when adding team elements, their institution should be added as well);
- Starting date;
- Conclusion date (optional);
- Keywords (optional);
- Used Software (optional, can include all relevant that apply, such as OS, libraries, etc.);
- Used Hardware (optional, all relevant that apply);
- Observations (optional).

⁴The password fields may be left blank when editing a user if the password is to remain unchanged

4.7 Project Tagging

This functionality is only accessible to users with the Author role. Other users do not have access to it (neither through menus/links nor through direct URL access).

Authors may submit existing or new tags to projects for approval by the Editor. If the user is also an Editor, the tag is automatically approved.

4.8 Author's Dashboard

This page is only accessible to the users with Author role that do not have an Editor role (these users have access to the Editor's Dashboard). Other users do not have access to this page (neither through menus/links nor through direct URL access).

This page allows authors to have easy access to contents submitted by themselves, but that are not yet approved or that was refused (refused content may have a justification). This paged list shows the contents and may be sorted and filtered.

4.9 Editor's Dashboard

This page is only accessible to the users with Editor role. Other users do not have access to this page (neither through menus/links nor through direct URL access).

This page allows editors to have easy access to contents submitted by Authors, but that are not yet approved. This paged list shows the contents to be approved and may be sorted and filtered. A list of refused contents is also available.

4.10 Account Browsing

All visitors can browse the accounts of the platform. The list of users should be paginated, filtered by text and sortable. Each user entry presents the user's name, institution, position, photo (if available), link to the personal url (if available), contact request and the "show projects" option (will direct users to 4 Projects' Browser, filtered by the requested account).

5 Functional Requirements

This section presents the functional requirements of the project as user stories. Many of these user stories may be considered “epic” and should be broken down by the development team.

The user stories presented bellow are grouped by user role and do not imply neither relevance nor order of implementation. Numbers are for reference only.

5.1 Unauthenticated user and all roles

This sub-section presents the requirements common for all site visitors. The following user stories considers a “site visitor” as either an unauthenticated or an authenticated users. The following user stories apply to all visitors:

US 1.1 As a site visitor I want to access an Initial Page so that I get to know the featured projects, last updated projects and can search projects;

US 1.2 As a site visitor I want to be able to browse through projects based on applicable filters, with a customizable order and loading a limited number of projects per interaction;

US 1.3 As a site visitor I want to access the project details and related content (such as technical sheet, images and videos) from any project reference;

US 1.4 As a site visitor I want to be able to submit a comment to a project;

US 1.5 As a site visitor I want to be able to request a contact from the responsible of a project;

US 1.6 As a site visitor I want to be able to view user accounts on a filtered, sortable and paged list so that I can access each account's projects;

US 1.7 As an unauthenticated user I want to be able to authenticate myself with valid credentials so that I can access functionalities available to my role(s);

US 1.8 As an authenticated user I want to be able to logout so that further access to the platform is made as an unauthenticated user.

5.2 Administrator Role

This sub-section presents the user stories for users with the Administrator role.

- US 2.1 *As an administrator I want to be able to create new user accounts;*
- US 2.2 *As an administrator I want to be able to edit existing user accounts so that account details, password and status can be changed;*
- US 2.3 *As an administrator I want to be able to list users so that I can edit, delete or disable each user's account.*

5.3 Author Role

This sub-section presents the user stories for users with the Author role.

- US 3.1 *As an author I want to be able to create a new technical sheet for a project;*
- US 3.2 *As an author I want to be able to submit new content (images, documents, existing tags, new tags, videos and external links) to a project so that editors can approve the content;*
- US 3.3 *As an author I want to be able to submit changes or removal requests to content that I have submitted so that editors can approve the changes;*
- US 3.4 *As an author I want to be able to list my pending content submissions and changes requests so that I can remove that submission or change request⁵;*
- US 3.5 *As an author I want to be able to list my refused content submissions and changes requests so that I can remove that submission or change request⁶.*

⁵Cancelling a submission or a change request do not require the approval of an Editor

⁶Cancelling a submission or a change request do not require the approval of an Editor

5.4 Editor Role

This sub-section presents the user stories for users with the Editor role.

US 4.1 *As an editor I want to be able to view all content submitted for approval with different sorting options and with the option to filter the listed contents so that I can approve or reject the content;*

US 4.2 *As an editor I want to be able to specify the reason for a content rejection so that the author may know the base for my decision;*

US 4.3 *As an editor I want to be able to edit any content, either submitted for approval or already approved;*

US 4.4 *As an editor I want to be able to remove any content, either previously approved or refused.*

6 Non Functional Requirements

The platform to be implemented has the following non functional requirements:

- The developed web application must run on one of the vagrant “boxes” provided during this curricular unit;
- The response provided to the web client must be HTML5 compliant and each development team is free to adopt any client technologies that meet this requirement;
- Although not a requirement, groups should consider to use a Version Control System (e.g. git) to assist in the development workflow.

7 Data Structure

The reference data structure for the specified platform is presented in Figure 1 . The data structure presented reflects the system requirements defined in this document. The SQL script to create this reference database schema and other related files are available on the Moodle platform.

This reference data structure includes the following entities:

- user: a user of the system with a role that can be Administrator (4), Editor (2) or Author (1);
- project: maintains most of the information present in the Project Technical Sheet. A project may have multiple members and may be associated with multiple institutions;
- media: media associated with a project (image, YouTube, PDF, etc.);
- tag: tags to be associated with projects;
- institution: name of the institution to be associated with users and projects;
- comments: comments made to a project.

Additionally, tables “project_tag”, “project_user” and “institutions_project” implement M:N relationships between these entities.

Note that entities “project”, “media” and “comment” have a column “replaces_id” that is to be used when an “author” user (that is not an “editor”) edits a content. The “updated” content generates a new record that must be approved by an “editor”. Once approved, the old record can be removed from the database.

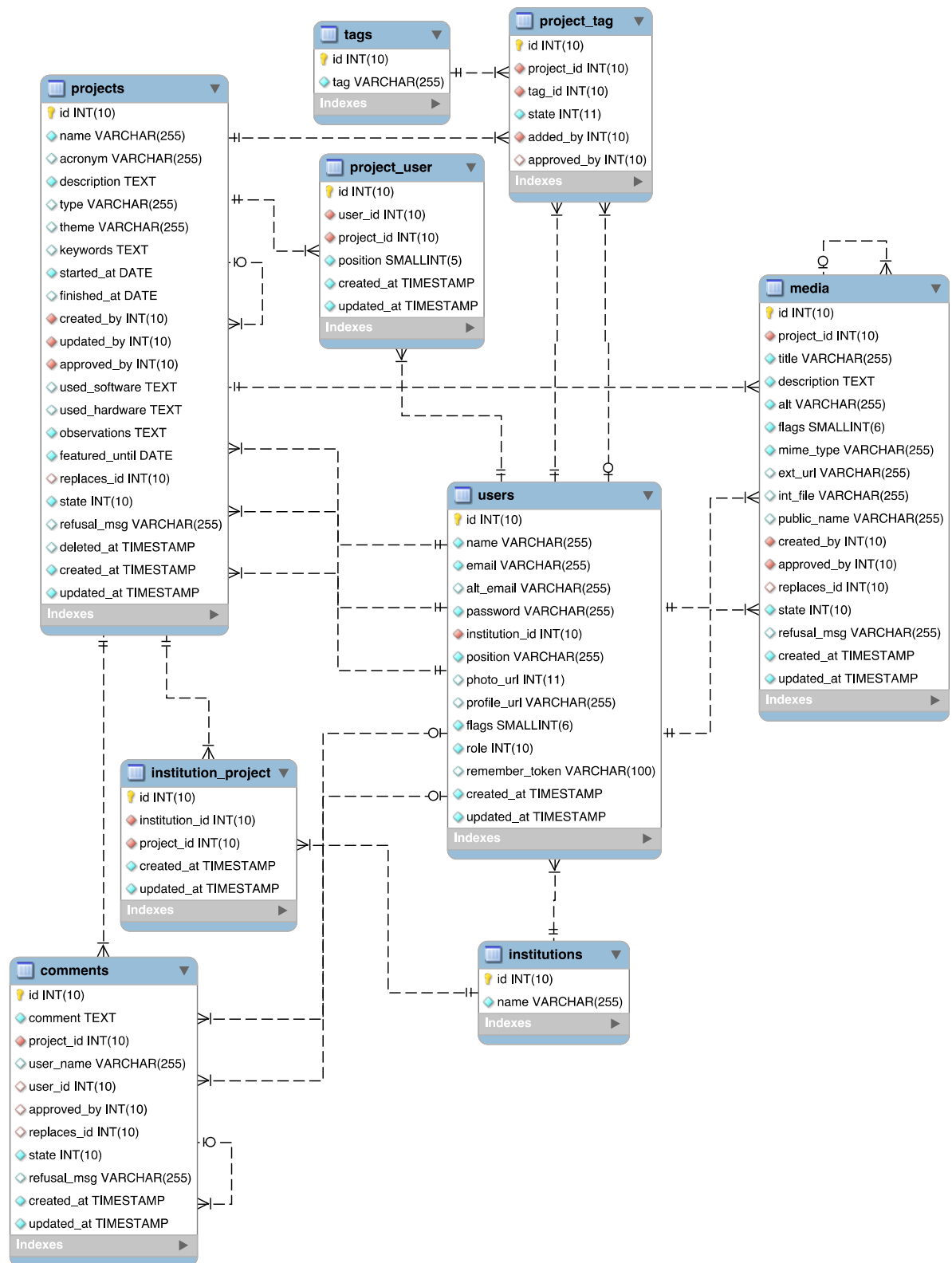


Figure 1: Application ER Model

8 Project Grading

The goal of this project is to consolidate the ability to develop a web application and to be able to follow and implement the accepted requirements. Therefore, any project to be subject to evaluation must completely implement at least 25% of all user stories. Projects that do not achieve this threshold will have the default classification of 0 (zero).

All user stories listed in section 5 Functional Requirements have the same weight and contribute to 80% of the project mark (please note that some user stories are more complex than others, so take some care when defining the order of implementation).

The remaining 20% of the final mark will be distributed the following way:

- 5% Adoption of security features (prevention for XSS, SQL injection, etc...);
- 5% Consistent look and layout for the platform (the evaluation of each functional requirement also takes into account the layout used);
- 5% Quality of technical implementation (project and code structure, comments, etc);
- 5% Extras: extra functionality or adoption of techniques and technologies not taught.

The final mark results from the project mark (as described above), reduced by all penalties that apply:

- A project that does not adopt the MVC pattern has a penalty of up to 25% from the project's note;
- A project that does not comply with PSR-1, PSR-2⁷ and PSR-4 has a penalty of up to 25% from the project's note.

⁷Projects that use the Laravel framework should comply with its coding style, available at <http://laravel.com/docs/5.0/contributions#coding-style>

9 Project Rules

1. Each project group must be composed by three students of the same laboratorial class. Groups of a different size, or with students from different laboratorial classes, will only be accepted with the approval by the responsible for the Curricular Unit.
2. Each project group will have a group code that will be defined by the lecturers of the Curricular Unit.
3. Every web pages of the project must comply with HTML5 and CSS3 standards, and they should be validated as such (<http://validator.w3.org/> and <https://jigsaw.w3.org/css-validator/>).
4. The project must use an MySQL database, with the name `portfolioDB_XXX`, where XXX is the group code.
5. For testing purposes, every password must follow the format: `role123`. For example, for the administrator profile it is necessary to create a user “administrator@portfolio.pt” with the password “administrator123”. This procedure must be done for the remaining profiles, with the exception of the anonymous profile.
6. The project must be delivered for evaluation until the day specified in the course evaluation calendar, at 23:59.
7. The project delivery will be made using the Curricular Unit area on the Moodle platform. It must be made in a single 7ZIP, RAR or ZIP file and its name must obey to the format `gxxx_num1_num2_num3.YYY`, where XXX is the group code, *num1*, *num2* and *num3* are the student numbers of the group elements, and *YYY* is the proper file extension.
 - a. This file must include not only all of the files of the web site, but also an SQL script that allows generating the project's database. This script must have the name `portfolio_XXX.sql`, where XXX is the code group.
 - b. A project's report (with the maximum of 3 pages) should also be included. This report should summarize all of the proposed implemented features, all of the features that the group considers an extra and any implementation aspect that is relevant and that proves the technical quality of the project. The report should present a table with the following information: totally implemented, partially implemented and unimplemented user stories.
 - c. The maximum size allowed for the file is 50 MB
8. After the delivery of the project, there will be a presentation and evaluation as specified in the calendar of course evaluation. The time for the presentation will be defined by the Curricular Unit lecturers. This evaluation is individual and the student's performance may have an influence on his/her final grade.