Architecture Specification and Prototype (EAP Component)

LBAW . Databases and Web Applications
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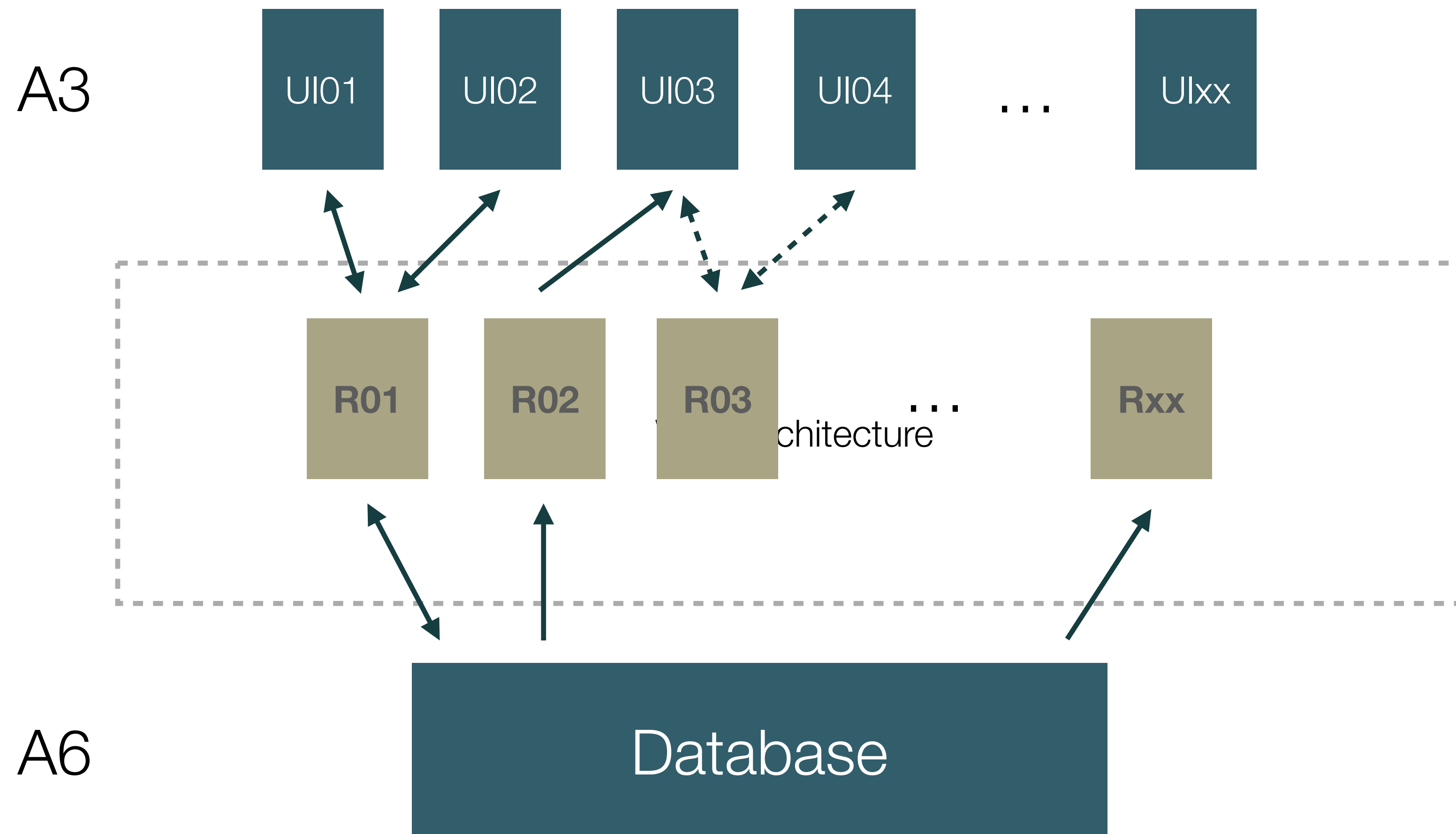DEI, FEUP, U.Porto

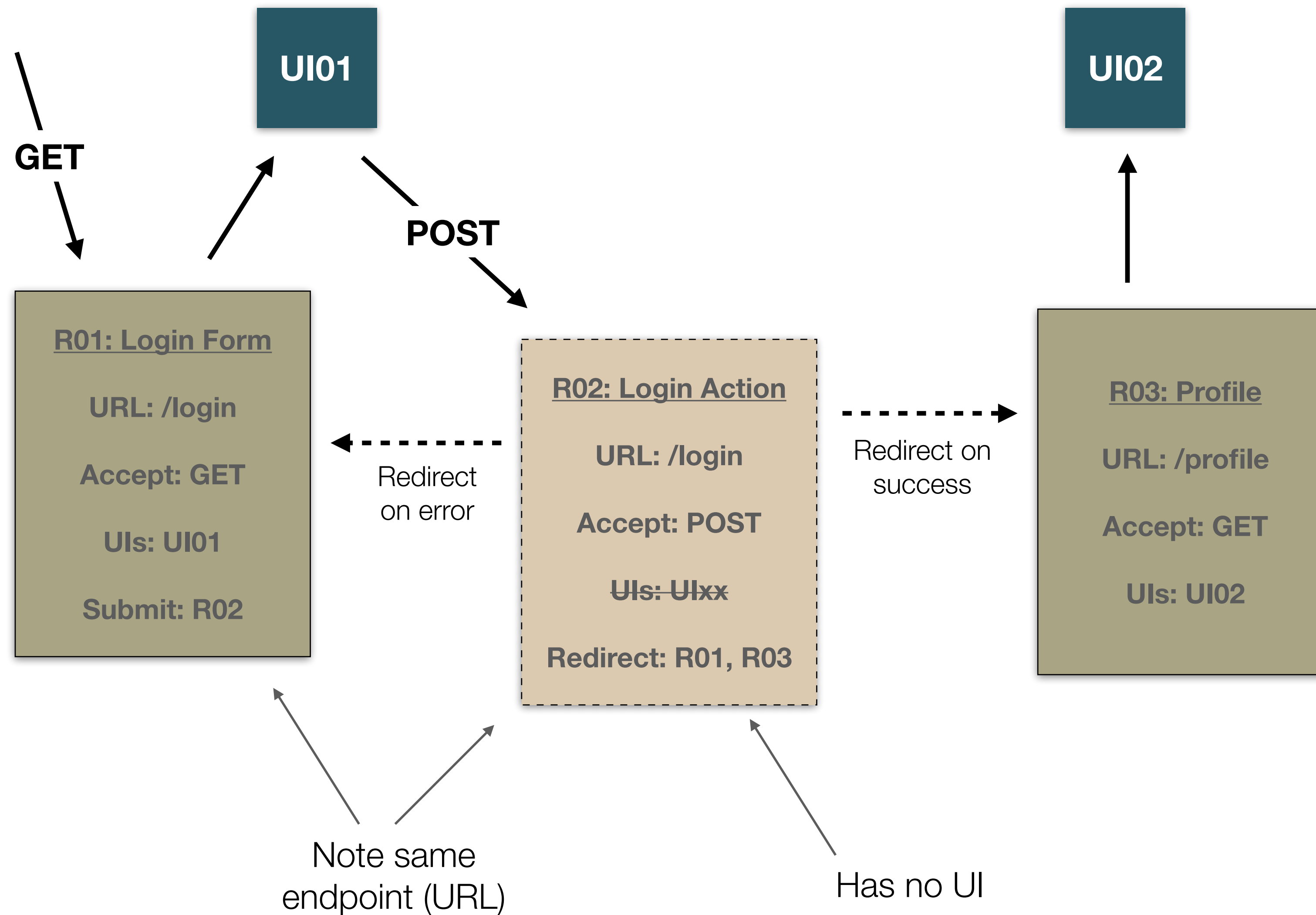# Architecture Specification and Prototype (EAP)Component

EAP: Architecture Specification and Prototype

➜ Decide on the web architecture to support the previously defined views (A3).

➜ What is going to be the mapping between views and requests.

➜ Two (extreme) examples:

➜ In a document-oriented web site, each view corresponds to a resource, i.e. we have each resource producing each view (1-1 mapping).

➜ In single page web application (SPA), only one document is output by the server, i.e. we have 1 resource producing N views (1-N mapping).

A7: Web Architecture

A3

UI01 UI02 UI03 UI04 … UIxx

R01 R02 R03 … Rxx

A6 Database

A7: View Action Pattern

UI01

UI02

GET

POST

R01: Login Form

URL: /login

Accept: GET

UIs: UI01

Submit: R02

R02: Login Action

URL: /login

Accept: POST

UIs: ~~UIxx~~

Redirect: R01, R03

R03: Profile

URL: /profile

Accept: GET

UIs: UI02

Redirect on error

Redirect on success

Note same endpoint (URL)

Has no UI

A7: Web Architecture

A7: Web Architecture

➡ Elements of the A7 artefact:

　➡ ... presents an **overview of the web resources to implement**.

　➡ ... establishes the **conditions of access to resources (permissions)**.

　➡ ... defines a **catalogue of web resources**, including:

　　➡ expected URL;

　　➡ HTTP methods and parameters supported;

　　➡ possible responses;

　　➡ for resources with a user interface, a reference to A3 is included.

A7: MediaLibrary - Overview

1. Overview

An overview of the web application to implement is presented in this section, where the modules are identified and briefly described. The web resources associated with each module are detailed in the individual documentation of each module.

M01: Authentication and Individual Profile	Web resources associated with user authentication and individual profile management, includes the following system features: login/logout, registration, credential recovery, view and edit personal profile information.
M02: Works	Web resources associated with library items, includes the following system features: items list and search, view and edit item details, and delete items.
M03: Reviews and Wish list	Web resources associated with reviews and wish list, includes the following system features: add review, list reviews and delete reviews; add items to wish list and remove items from the wish list.
M04: Loans	Web resources associated with loans, includes the following system features: view loans, add loans and edit loans.
M05: User Administration and Static pages	Web resources associates with user management, specifically: view and search users, delete or block user accounts, view and change user information, and view system access details for each user. Web resources with static content are associated with this module: dashboard, about, contact, services and faq.

A7: MediaLibrary - Permissions

2. Permissions

This section defines the permissions used in the modules to establish the conditions of access to resources.

PUB	Public	Users without privileges
USR	User	Authenticated users
OWN	Owner	User that are owners of the information (e.g. own profile, own itens)
ADM	Administrator	Administrators

A7: MediaLibrary - Modules

3. Modules

This section documents each web resource of each module, indicating the URL, HTTP methods, the possible parameters (mandatory or optional), body request, interfaces with the user (referring to the A3 artefact), or JSON responses in the event of AJAX call to the API.

Module M01: Authentication and Individual Profile

Endpoints of Module Authentication and Individual Profile

- **R101: Login Form** [/login]
- **R102: Login Action** [/login]
- **R103: Logout Action** [/logout]
- **R104: Register Form** [/register]
- **R105: Register Action** [/register]
- **R106: View Profile** [/users/{id}]
- **R107: Edit Profile Form** [/users/{id}/edit]
- **R108: Edit Profile Action** [/users/{id}]
- **R109: Password Reset Form** [/password/reset]
- **R110: Password Reset Action** [/password/reset]

A7: MediaLibrary - Resources

R104: Register Form

URL	/register
Description	Page with a form to register a new user account.
Method	GET
UI	UI07
SUBMIT	R105
Permissions	PUB

A7: MediaLibrary - Resources

R105: Register Action

URL	/register	
Description	This web resource inserts the user into the system. Redirects to the user profile page on success and the register form on failure.	
Method	POST	
Request Body	+name: string	Name
	+email: string	Email
	+password: string	Password
	?picture: file	Profile picture
Redirects	R106	Success
	R104	Error
Permissions	PUB	

A7: MediaLibrary - JSON

4. JSON/XML Types

The structure of the JSON formatted answers must be documented as illustrated below.

JSON202: Search Works: {work}[]

```json
{
  "work": [
    {
      "id": "1",
      "title": "Rihanna - Unapologetic",
      "obs": "Good pop music album.",
      "year": "2012",
      "owner": "Joana Lima",
      "type": "MP3"
    },
    {
      "id": "15",
      "title": "Mr. Bean",
      "obs": "The best comedy movie.",
      "year": "1995",
      "owner": "Manuel Teixeira",
      "type": "DVD"
    }
  ]
}
```

A8: Web Architecture

A8: Vertical Prototype

➔ The A8 artefact:

　➔ corresponds to the implementation of two or more simple user stories;

　➔ is used to validate the architecture presented;

　➔ also serves to gain familiarity with the technologies used in the project.

➔ It must:

　➔ be based on the LBAW Framework and

　➔ include work on all layers of the architecture: user interface, business logic and data access.

➔ The US implemented must be specific of the group's project. Adapting the provided authentication system is required but not considered part of those US. The US must include at least a form, an action, an AJAX request, search, and update to the database.

A8: Vertical Prototype

➜ LBAW framework stack: PostgreSQL and Laravel.

  ➜ Laravel setup on the local machine;

  ➜ PostgreSQL and pgadmin as Docker containers (same);

➜ Deployment using Docker Hub, with an image at "lbaw21xx/lbaw21xx".