EAP: Architecture Specification and Prototype

A7: Web Resources Specification

Goals:

- Clearly define the modules and web resources of the system.
- Specify access permissions for users based on their roles.
- Provide an OpenAPI specification for all web resources.

1. Overview

> Identify and overview the modules that will be part of the application.

Module	Content
M01: Authentication	Web resources associated with user authentication. Includes features such as login/logout and registration.
M02: Individual Profile	Web resources for managing individual profiles. Includes features to view and edit personal profile information.
M03: User Administration and Static Pages	Web resources for user management, including view, search, and ban users. Also includes static pages: about, contact, and FAQ.
M04: Shop	Web resources associated with shop items. Includes item listing, search, and viewing item details.
M05: Shopping Cart	Web resources for managing the shopping cart, including viewing the cart, adding items, and removing items.

2. Permissions

> Define the permissions used by each module, necessary to access its data and features.

Acronym	Name	Description
PUB	Public	Users without privileges
USR	User	Authenticated Users and Unauthenticated Users
OWN	Owner	User that are owners of the information (e.g. own profile, own items, own comments)
ADM	Administrator	System administrators

3. OpenAPI Specification

> OpenAPI specification in YAML format to describe the vertical prototype's web resources.

> Link to the `a7_openapi.yaml` file in the group's repository.

```yaml
---
openapi: 3.0.0
info:
  version: "1.0"
  title: LBAW Porto's Bookshelf WEB API
  description: Web Resources Specification (A7) for Porto's Bookshelf
servers:
  - url: http://lbaw.fe.up.pt
    description: Production server
externalDocs:
  description: Find more info here.
  url: https://web.fe.up.pt/~ssn/wiki/teach/lbaw/medialib/a07
tags:
  - name: "M01: Authentication"
  - name: "M02: Individual Profile"
  - name: "M03: User Administration and Static pages"
  - name: "M04: Shop"
  - name: "M05: Shopping Cart"
paths:
  /login:
    get:
      operationId: R101
      summary: "R101: Login Form"
      description: "Provide login form. Access: PUB"
      tags:
        - "M01: Authentication"
      responses:
        "200":
          description: Ok. Show Log-in UI
    post:
      operationId: R102
      summary: "R102: Login Action"
      description: "Processes the login form submission. Access: PUB"
      tags:
        - "M01: Authentication"
      requestBody:
        required: true
        content:
          application/x-www-form-urlencoded:
            schema:
              type: object
              properties:
                username:
                  type: string
                password:
                  type: string
                required:
                  - username
                  - password
      responses:
        "302":
```

```
                description: Redirect after processing the login credentials
                headers:
                  Location:
                    schema:
                      type: string
                    examples:
                      302Sucess:
                        description: Sucessful authentication. Redirect to product page
                        value: /products
                      302Error:
                        description: Failed authentication. Redirect to login form
                        value: /login
  /logout:
    post:
      operationId: R103
      summary: "R103: Logout Action"
      description: "Logout the current authenticated user. Access: USR, ADM"
      tags:
        - "M01: Authentication"
      responses:
        "302":
          description: Redirect after processing logout.
          headers:
            Location:
              schema:
                type: string
              examples:
                302Sucess:
                  description: Sucessful logout. Redirect to login form
                  value: /login
  /register:
    get:
      operationId: R104
      summary: "R104 : Register Form"
      description: "Provide new user registration form. Access: PUB"
      tags:
        - "M01: Authentication"
      responses:
        "200":
          description: Ok. Show Register UI
    post:
      operationId: R105
      summary: "R105: Register Action"
      description: "Processes the new user registration form submission. Access:
PUB"
      tags:
        - "M01: Authentication"
      requestBody:
        required: true
        content:
          application/x-www-form-urlencoded:
            schema:
              type: object
              properties:
```

```yaml
                name:
                  type: string
                username:
                  type: string
                email:
                  type: string
                password:
                  type: string
            required:
              - name
              - username
              - email
              - password
      responses:
        "302":
          description: Redirect after processing the new user information.
          headers: null
          Location:
            schema: null
            type: string
            examples: null
            302Success:
              description: Successful authentication. Redirect to products page.
              value: /products
            302Failure:
              description: Failed authentication. Redirect to login form.
              value: /login
  "/users/{id}":
    get:
      operationId: R201
      summary: "R201: View user profile"
      description: "Show the individual user profile. Access: USR"
      tags:
        - "M02: Individual Profile"
      parameters:
        - in: path
          name: id
          schema:
            type: integer
          required: true
      responses:
        "200":
          description: Ok. Show User Profile UI
  "/users/{id}/purchaseHistory":
    get:
      operationId: R202
      summary: "R202: View users purchase history"
      description: "Show the users purchase history. Acess: OWN"
      tags:
        - "M02: Individual Profile"
      parameters:
        - in: path
          name: id
          schema:
```

```yaml
            type: integer
          required: true
      responses:
        "200":
          description: Ok. Show user purchase history UI
  /products:
    get:
      operationId: R401
      summary: "R401: View products list"
      description: "Show the list of products. Acess: PUB"
      tags:
        - "M04: Shop"
      responses:
        "200":
          description: Ok. Show products list UI
  "/products/{id}":
    get:
      operationId: R402
      summary: "R402: View products details"
      description: Show the information about a product. Access PUB
      tags:
        - "M04: Shop"
      parameters:
        - in: path
          name: id
          schema:
            type: integer
          required: true
      responses:
        "200":
          description: Ok. Show products details UI
        "404":
          description: Error. Product was not found
  /search:
    get:
      operationId: R403
      summary: "R403: Search for products/authors"
      description: Show the products/authors that match the specified search
criteria.
        Access PUB
      tags:
        - "M04: Shop"
      parameters:
        - in: query
          name: name
          description: Search for product/author name
          schema:
            type: string
        - in: query
          name: category
          description: Select category from a list of options
          schema:
            type: string
            enum:
```

```yaml
                - Fiction
                - Non-fiction
                - Sci-Fi
                - Romance
                - Mystery
                - Fantasy
                - Biography
        - in: query
          name: min_price
          description: Minimum price for product
          schema:
            type: number
            format: float
        - in: query
          name: max_price
          description: Maximum price for product
          schema:
            type: number
            format: float
        - in: query
          name: min_review_score
          description: Minimum review score for product/author
          schema:
            type: number
            format: float
            minimum: 0
            maximum: 5
        - in: query
          name: max_review_score
          description: Maximum review score for product/author
          schema:
            type: number
            format: float
            minimum: 0
            maximum: 5
      responses:
        "200":
          description: Ok. Show search results.
          content:
            application/json:
              schema:
                type: array
                items:
                  type: object
                  properties: null
                  id:
                    type: integer
                  name:
                    type: string
                  author:
                    type: string
                  category:
                    type: string
                  price:
```

```yaml
                        type: number
                        format: float
                    average_review_score:
                        type: number
                        format: float
  "/shoppingCart/{id}":
    get:
      operationId: R501
      summary: "R501: View Shopping Cart"
      description: Show the products present in the Shopping Cart and its
quantity.
          Access OWN
      tags:
        - "M05: Shopping Cart"
      parameters:
        - in: path
          name: id
          schema:
            type: integer
          required: true
      responses:
        "200":
          description: Ok. Show Shopping Cart.
  /checkout:
    get:
      operationId: R404
      summary: "R404: Checkout"
      description: "Execute the checkout so the order is completed. Acess: USR"
      tags:
        - "M05: Shopping Cart"
      responses:
        "200":
          description: Ok. Show checkout page
    post:
      operationId: R405
      summary: "R405: Checkout processment"
      description: "Checkout is processed. Acess: OWN"
      tags:
        - "M05: Shopping Cart"
      requestBody:
        required: true
        content:
          application/x-www-form-urlencoded:
            schema:
              type: object
              properties:
                shippingAdress:
                  type: string
                NIF:
                  type: string
                cardNumber:
                  type: string
      responses:
        "302":
```

```
              description: Redirect after the checkout
            headers:
              Location:
                schema:
                  type: string
                examples:
                  302Sucess:
                    description: The checkout was sucessful. You will now be
redirected to the main
                       page
                    value: /products
                  302Failure:
                    description: The checkout was not sucessful. You will now be
redirected to the
                       checkout page
                    value: /checkout
/faq:
  get:
    operationId: R301
    summary: "R301: View FAQ page."
    description: Show the contents of the FAQ page. Access PUB
    tags:
      - "M03: User Administration and Static pages"
    responses:
      "200":
        description: Ok. Show FAQ page
/contacts:
  get:
    operationId: R302
    summary: "R302: View Contacts page."
    description: Show the contents of the Contacts page. Access PUB
    tags:
      - "M03: User Administration and Static pages"
    responses:
      "200":
        description: Ok. Show Contacts page
/about:
  get:
    operationId: R303
    summary: "R303: View Contacts page."
    description: Show the contents of the About page. Access PUB
    tags:
      - "M03: User Administration and Static pages"
    responses:
      "200":
        description: Ok. Show About page
```

> ...
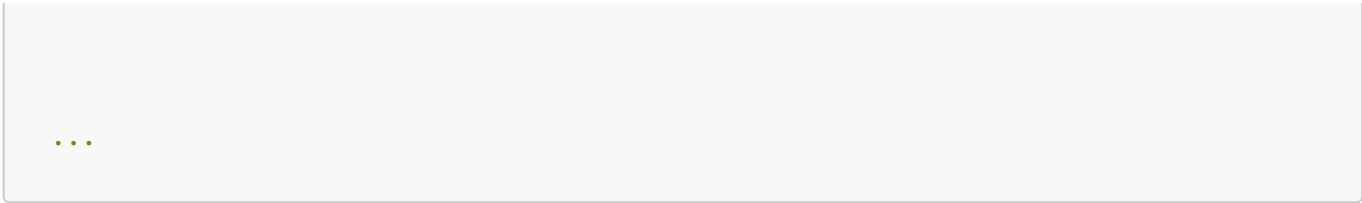
A8: Vertical prototype

The Vertical Prototype of Porto's Bookshelf aims to demonstrate core features and functionality in a limited scope. It will focus on essential user interactions like browsing books, filtering by category, and viewing product details. The prototype will also include basic authentication, allowing users to register and log in. The goal is to test key interactions and ensure the design meets user needs, while providing a solid foundation for future development.

1. Implemented Features

1.1. Implemented User Stories

> Identify the user stories that were implemented in the prototype.

User Stories

Filtered User Stories

Identifier	Name	Priority	Responsible	Description
US05	Search Products	high	José Ferreira	As a User, I want to be able to search for products, so that I can choose and add them to my shopping cart.
US18	View and Edit Profile	high	José Ferreira	As an Authenticated User, I want to be able to view my profile, so that I can view and edit it if needed.
US16	View Purchase History	high	José Ferreira	As an Authenticated User, I want to be able to view my purchase history, so I can see what products I have previously bought and the purchase details.
US01	View Products List	high	António Ferreira	As a User, I want to be able to view the products list, so that I can choose what product to purchase.
US02	View Product Details	high	António Ferreira	As a User, I want to be able to view the details of a product, so that I know what kind of product I am purchasing.
US03	Add Product to Shopping Cart	high	João Afonso Santos	As a User, I want to be able to add the products I want to buy to the shopping cart, so that I can proceed to checkout.

Identifier	Name	Priority	Responsible	Description
US04	Manage Shopping Cart	high	João Afonso Santos	As a User, I want to be able to manage my shopping cart, so that I can remove products from it.
US11	Sign in	high	Félix Miranda	As an Unauthenticated User, I want to be able to sign in into the system, so I can become a member of the website and make a purchase.
US12	Sign up	high	Félix Miranda	As an Unauthenticated User, I want to be able to register myself into the website, so I can authenticate myself into the system.
US15	Log out	high	Félix Miranda	As an Authenticated User, I want to be able to log out of my account, so I can ensure my account is secure when I am not using it.
US17	Checkout	high	Félix Miranda	As an Authenticated User, I want to be able to proceed to checkout, so that I can finish my purchase.

1.2. Implemented Web Resources

> Identify the web resources that were implemented in the prototype.

Module 1: Authentication

Web Resource Reference	URL
R101: Login Form	GET /login
R102: Login Action	POST /login
R103: Logout action	POST /logout
R104: Register Form	GET /register
R105: Register Action	POST /register

Module 2: Individual Profile

Web Resource Reference	URL
R201: View Profile	GET /users/{id}
R202: Edit Profile Form	GET/users/{id}/edit
R203: Edit Profile Action	POST/users/{id}/edit

Module 4: Shop

Web Resource Reference	URL

Web Resource Reference	URL
R401: View Products	GET /mainpage
R402: View Products details	GET/product/{id}
R403: Search for a Product	GET /search

Module 5: Shopping Cart

Web Resource Reference**	URL
R501: View Shopping Cart	GET /shoppingCart/{id}
R502: Add Item to Cart	POST /shoppingCart/{id}
R503: Remove Item from Cart	DELETE /shoppingCart/{id}/product/{id}
R504: Checkout Page	GET /checkout
R505: Process Checkout	POST /checkout

2. Prototype

User account: felixmiranda1@gmail.com / felixmiranda1

docker run -d --name lbaw2462 -p 8001:80 gitlab.up.pt:5050/lbaw/lbaw2425/lbaw2462

https://gitlab.up.pt/lbaw/lbaw2425/lbaw2462/-/tree/Merged

Revision history

Changes made to the first submission:

1. Item 1
2. ..

GROUP2462, 26/11/2024

- António Ferreira, up202108834@up.pt
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