

EAP: Architecture Specification and Prototype

A7: Web Resources Specification

Project modules are identified and briefly described to organize how they are presented in the yaml document.

1. Overview

Module	Description
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: Products	Web resource associated with the search and listing of the products available to the user.
M03: Reviews and Wishlist	Web resources associated with reviews and wishlist. Includes the following system features: view review, add reviews, edit reviews and delete reviews; add items to wish list and remove items from the wish list.
M04: Cart	Web resources associated with the management of the cart.
M05: Static pages	Static pages like: about us, main features and contacts.
M06: Management Area	Web resources associated with website management, specifically: view and edit purchases, view, edit, add and delete properties, view, edit, add and delete categories and view, add and delete faqs.

2. Permissions

PUB	Public	Users without privileges
USR	User	Authenticated users
OWN	Owner	User that are owners of the information
ADM	Administrator	System administrators

3. OpenAPI Specification

This section includes the [GameSpace OpenAPI](#).

```
openapi: 3.0.0
```

```
info:
```

```
version: '1.1'
title: 'LBAW GameSpace Web API'
description: 'Web Resources Specification (A7) for GameSpace'

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 and Individual Profile'
  - name: 'M02: Products'
  - name: 'M03: Reviews and Wishlist'
  - name: 'M04: Cart'
  - name: 'M05: Static Pages'
  - name: 'M06: Management Area'

paths:
  /login:
    get:
      operationId: R101
      summary: "R101: Login Form"
      description: "Provide form for authentication. Access: PUB"
      tags:
        - "M01: Authentication and Individual Profile"
      responses:
        "200":
          description: "Ok."

  /users/authenticate:
    post:
      operationId: R102
      summary: 'R102: Login Action'
      description: 'Processes the login form submission. Access: PUB'
      tags:
        - 'M01: Authentication and Individual Profile'
      requestBody:
        required: true
        content:
          application/x-www-form-urlencoded:
            schema:
              type: object
              properties:
                email:
                  type: string
                  format: email
                password:
                  type: string
                  format: password
              required:
                - email
```

```
    - password

responses:
  "302":
    description: "Redirect after processing the login credentials."
    headers:
      Location:
        schema:
          type: string
        examples:
          302Success:
            description: "Successful login. Redirect to homepage."
            value: "/"
          302Admin:
            description: 'Successful authentication. Redirect to admin
dashboard.'
            value: '/dashboard'
          302Failure:
            description: "Failed login. 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 and Individual Profile'
    responses:
      '302':
        description: 'Redirect after processing logout.'
        headers:
          Location:
            schema:
              type: string
            examples:
              302Success:
                description: 'Successful logout. Redirect to Homepage'
                value: '/'

/register:
  get:
    operationId: R104
    summary: 'R104: Register Form'
    description: 'Provide new user registration form. Access: PUB'
    tags:
      - 'M01: Authentication and Individual Profile'
    responses:
      '200':
        description: 'Ok.'

  post:
    operationId: R105
    summary: 'R105: Register Action'
```

```
description: 'Processes the new user registration form submission. Access:
PUB'
tags:
  - 'M01: Authentication and Individual Profile'

requestBody:
  required: true
  content:
    multipart/form-data:
      schema:
        type: object
        properties:
          name:
            type: string
          phone_number:
            type: integer
          email:
            type: string
            format: email
          password:
            type: string
            format: password
          confirm_password:
            type: string
            format: password
        required:
          - name
          - phone_number
          - email
          - password
          - confirm_password

responses:
  "302":
    description: "Redirect after processing the new user sign-up form."
    headers:
      Location:
        schema:
          type: string
        examples:
          302Success:
            description: "Successful registration. Redirect to home page."
            value: "/"
          302Failure:
            description: "Failed registration. Redirect to sign-up form."
            value: "/register"

/users/{user}:
  get:
    operationId: R106
    summary: 'R106: View User Profile'
    description: 'Page that shows user information and purchase history. Access:
PUB'
    tags:
```

```

    - 'M01: Authentication and Individual Profile'
parameters:
  - in: path
    name: user
    schema:
      type: int
    description: 'Specifies the member user ID'
    required: true
responses:
  '200':
    description: 'Ok.'
  '404':
    description: 'User not found.'

/users/edit:
  get:
    operationId: R107
    summary: 'R107: Edit User profile page'
    description: 'Page that allows a user to update his information. Access:
OWN'
    tags:
      - 'M01: Authentication and Individual Profile'
    responses:
      '200':
        description: 'Ok.'
      '403':
        description: 'Forbidden access'

  put:
    operationId: R108
    summary: 'R108: Edit User profile action'
    description: 'Allows a user to edit his information. Access: OWN'
    tags:
      - 'M01: Authentication and Individual Profile'
    requestBody:
      required: true
      content:
        application/x-www-form-urlencoded:
          schema:
            type: object
            properties:
              name:
                type: string
              email:
                type: string
              phone_number:
                type: string
              image:
                type: file
            required:
              - name
              - email
              - phone_number
              - image

```

```
responses:
  '302':
    description: 'Redirect member after editing profile.'
    headers:
      Location:
        schema:
          type: string
        examples:
          302Success:
            description: 'Member information edited successfully. Redirects
member to their profile page.'
            value: '/users/{user}'
          302Failure:
            description: 'Member information editing failed. Stay in edit
page.'
            value: '/users/edit'
  '403':
    description: 'Forbidden access'

/users:
  delete:
    operationId: R109
    summary: 'R109: Soft Delete Account'
    description: 'Delete a User. Access: OWN'

    tags:
      - 'M01: Authentication and Individual Profile'

    requestBody:
      required: true
      content:
        application/x-www-form-urlencoded:
          schema:
            type: string
          examples:
            302Success:
              description: 'Successful user deletion. Redirect to Homepage'
              value: '/'

/addresses:
  post:
    operationId: R110
    summary: 'R110: Save Address In Profile'
    description: 'Processes the Add Address form submission. Access: OWN'
    tags:
      - 'M01: Authentication and Individual Profile'

    requestBody:
      required: true
      content:
        application/x-www-form-urlencoded:
          schema:
            type: object
          properties:
            label:
```

```

        type: string
      street:
        type: string
      city:
        type: string
      postal_code:
        type: string
      required:
        - label
        - street
        - city
        - postal_code

responses:
  "302":
    description: "Redirect after processing the added address."
    headers:
      Location:
        schema:
          type: string
        examples:
          302Success:
            description: "Successfully added address. Redirect to member
profile page."
            value: "/users/{user}"
          302Failure:
            description: "Failed to add address. Redirect to member profile
page."
            value: "/users/{user}"

/addresses/{address}:
  put:
    operationId: R111
    summary: 'R111: Update Address In Profile'
    description: 'Allows a user to edit his address. Access: OWN'
    tags:
      - 'M01: Authentication and Individual Profile'
    requestBody:
      required: true
      content:
        application/x-www-form-urlencoded:
          schema:
            type: object
            properties:
              label:
                type: string
              street:
                type: string
              city:
                type: string
              postal_code:
                type: string
            required:
              - label

```

```

        - street
        - city
        - postal_code
responses:
  '302':
    description: 'Redirect member after editing profile.'
    headers:
      Location:
        schema:
          type: string
        examples:
          302Success:
            description: 'Member information edited successfully. Redirects
member to their profile page.'
            value: '/users/{user}'
          302Failure:
            description: 'Member information editing failed. Redirects
member to their profile page.'
            value: '/users/{user}'
  '400':
    description: 'Bad Request'
  '403':
    description: 'Forbidden access'

delete:
  operationId: R112
  summary: 'R112: Remove Address In Profile'
  description: 'Delete an Address. Access: OWN'
  tags:
    - 'M01: Authentication and Individual Profile'
  requestBody:
    required: true
    content:
      application/x-www-form-urlencoded:
        schema:
          type: string
  responses:
    '302':
      description: 'Successful address deletion. Redirect to member profile
page'
      headers:
        Location:
          schema:
            type: string
          examples:
            302Success:
              description: 'Successful address deletion. Redirect to member
profile page'
              value: '/users/{user}'
    '400':
      description: 'Bad Request'
    '403':
      description: 'Forbidden access'

```



```
/login:
  get:
    operationId: R101
    summary: "R101: Login Form"
    description: "Provide form for authentication. Access: PUB"
    tags:
      - "M01: Authentication and Individual Profile"
    responses:
      "200":
        description: "Ok."

/:
  get:
    operationId: R201
    summary: 'R201: View All Products'
    description: 'Home Page, displays product list. Access: PUB'
    tags:
      - 'M02: Products'
    responses:
      '200':
        description: 'Ok.'

/products/{product}:
  get:
    operationId: R202
    summary: 'R202: View Product'
    description: "Shows the page of a product and its reviews. Access: PUB"
    tags:
      - 'M02: Products'
    parameters:
      - in: path
        name: product
        schema:
          type: integer
        required: true
        description: 'Specifies the id of the product'
    responses:
      '200':
        description: 'Ok.'
      '404':
        description: 'Product not found'

/?.search={text}:
  get:
    operationId: R203
    summary: 'R203: Search Products'
    description: 'Shows the search results of the input string. Access: PUB'
    tags:
      - 'M02: Products'
    parameters:
      - in: path
        name: text
        schema:
          type: string
```

```
        description: 'Specifies the input string to run the search on'
        required: true
    responses:
        '200':
            description: 'Ok.'
```

/?category={category}:

```
    get:
        operationId: R204
        summary: 'R204: Filter by Category'
        description: 'Shows the products of a given category. Access: PUB'
        tags:
            - 'M02: Products'
        parameters:
            - in: path
              name: category
              schema:
                  type: string
              description: 'Specifies the category of which products are shown'
              required: true
        responses:
            '200':
                description: 'Ok.'
            '404':
                description: 'Product not found'
```

Reviews and Wishlist

/reviews:

```
    post:
        operationId: R301
        summary: 'R301: Review a game'
        description: 'Adds a review to a game. Access: USR'
        tags:
            - 'M03: Reviews and Wishlist'
        requestBody:
            required: true
            content:
                application/x-www-form-urlencoded:
                    schema:
                        type: object
                        properties:
                            product_id:
                                type: integer
                            score:
                                type: integer
                            comment:
                                type: string
                        required:
                            - product_id
                            - score
                            - comment
        responses:
            '200':
```

```
      description: 'Ok.'
    '403':
      description: 'Forbidden access'

/reviews/{review}:
  delete:
    operationId: R302
    summary: 'R302: Delete a game review'
    description: "Deletes a specified review. Access: OWN"
    tags:
      - 'M03: Reviews and Wishlist'
    requestBody:
      required: true
      content:
        application/x-www-form-urlencoded:
          schema:
            properties:
              user_id:
                type: integer
              review:
                type: integer
            required:
              - user_id
              - review
    responses:
      '200':
        description: 'Ok.'
      '403':
        description: 'Forbidden access'
      '404':
        description: 'Not Found'

/wishlist:
  get:
    operationId: R303
    summary: 'R303: View Wishlist'
    description: "Shows the user's wishlist. Access: OWN"
    tags:
      - 'M03: Reviews and Wishlist'
    responses:
      '200':
        description: 'Ok.'
      '403':
        description: 'Forbidden access'

/wishlist/{product}:
  post:
    operationId: R304
    summary: 'R304: Add Product to Wishlist'
    description: 'Adds a product to the wishlist. Access: OWN'
    tags:
      - 'M03: Reviews and Wishlist'
    requestBody:
      required: true
```

```

    content:
      application/x-www-form-urlencoded:
        schema:
          type: object
          properties:
            user_id:
              type: integer
            product_id:
              type: integer
          required:
            - user_id
            - product_id
    responses:
      '200':
        description: 'Ok.'
      '403':
        description: 'Forbidden access'
      '404':
        description: 'Not Found'

```

```

delete:
  operationId: R305
  summary: 'R305: Remove Product from Wishlist'
  description: "Removes a specified product from the user's wishlist. Access:

```

OWN"

```

  tags:
    - 'M03: Reviews and Wishlist'
  requestBody:
    required: true
    content:
      application/x-www-form-urlencoded:
        schema:
          properties:
            user_id:
              type: integer
            product_id:
              type: integer
          required:
            - user_id
            - product_id
    responses:
      '200':
        description: 'Ok.'
      '403':
        description: 'Forbidden access'
      '404':
        description: 'Not Found'

```

CART

```

/cart:
  get:
    operationId: R401
    summary: 'R401: View Shopping Cart'
    description: 'Display the user`s cart. Access: OWN'

```

```
tags:
  - 'M04: Cart'

responses:
  '200':
    description: "Ok."

delete:
  operationId: R404
  summary: 'R404: Clear Cart'
  description: 'Delete the user`s cart. Access: OWN'
  tags:
    - 'M04: Cart'

requestBody:
  required: true
  content:
    application/x-www-form-urlencoded:
      schema:
        properties:
          id_user:
            type: integer
        required:
          - user_id

responses:
  '200':
    description: "Ok."
  '403':
    description: "Error. Forbidden"

/cart/{product}:
  post:
    operationId: R402
    summary: 'R402: Add to Shopping Cart'
    description: 'Add a product to the user`s cart. Access: OWN'
    tags:
      - 'M04: Cart'
    requestBody:
      required: true
      content:
        application/x-www-form-urlencoded:
          schema:
            type: object
            properties:
              user_id:
                type: integer
              product_id:
                type: integer
            required:
              - user_id
              - product_id

responses:
  '200':
```

```
    description: 'Ok. Added product successfully'
  '403':
    description: 'Error. Forbidden'
  '404':
    description: 'Error. Not Found'

delete:
  operationId: R403
  summary: 'R403: Remove from Shopping Cart'
  description: 'Remove a product from the user`s cart. Access: OWN'
  tags:
    - 'M04: Cart'
  requestBody:
    required: true
    content:
      application/x-www-form-urlencoded:
        schema:
          properties:
            product_id:
              type: integer
            user_id:
              type: integer
          required:
            - product_id
            - user_id
  responses:
    '200':
      description: 'Ok.'
    '403':
      description: 'Error. Forbidden'
    '404':
      description: 'Error. Not Found'

patch:
  operationId: R405
  summary: 'R405: Update Cart'
  description: 'Update the amount of a product in user`s cart. Access: OWN'
  tags:
    - 'M04: Cart'
  requestBody:
    required: true
    content:
      application/x-www-form-urlencoded:
        schema:
          type: object
          properties:
            user_id:
              type: integer
            product_id:
              type: integer
            quantity:
              type: integer
          required:
            - user_id
```

```

        - product_id
        - quantity
responses:
  '200':
    description: "Ok. Cart updated successfully"
  '403':
    description: "Error. Forbidden"
  '404':
    description: "Error. Not Found"

/checkout:
  post:
    operationId: R406
    summary: 'R406: Checkout Items in Cart'
    description: 'Make a purchase, clearing the cart. Access: OWN'
    tags:
      - 'M04: Cart'
    requestBody:
      required: true
      content:
        application/x-www-form-urlencoded:
          schema:
            type: object
            properties:
              user_id:
                type: integer
              product_id:
                type: integer
            required:
              - user_id
              - product_id
    responses:
      '200':
        description: "Ok. Added product successfully"
      '400':
        description: "Error. Bad Request"
      '404':
        description: "Error. Not Found"

```

A8: Vertical prototype

The Vertical Prototype incorporates the implementation of features identified as essential in the common and theme requirement documents. With this information, we have realized all user stories prioritized as high, as detailed in the sections below. The primary purpose of this artifact is to validate the presented architecture and provide us with foundational insights into the technologies employed in the project. In adherence to best practices, the implementation is grounded in the code of the LBAW Framework, involving comprehensive work across all layers of the solution's architecture. The prototype encompasses the realization of page visualizations (such as home, profile, product, cart, wishlist and search pages), content manipulation

operations (insertion, editing, and removal of addresses), and the incorporation of various error and success messages.

1. Implemented Features

1.1. Implemented User Stories

For the vertical prototype we decided to implement all of the user stories that had priority set to high.

User Story reference	Name	Priority	Description
US01	Product Details	High	As a User, I want to be able to see the product details, so that I can see a detailed representation of it.
US02	Search products	High	As a User, I want to be able to search for products, so that I can find what I'm looking for.
US14	Sign-in	High	As a Visitor, I want to be able to authenticate into the system, so that I can access privileged information.
US15	Sign-up	High	As a Visitor, I want to be able to register myself into the system, so that I can authenticate myself into the system.
US19	Add to Shopping Cart	High	As an Authenticated User, I want to be able to add products to the shopping cart, so that I can buy them later.
US20	Manage Shopping Cart	High	As an Authenticated User, I want to be able to manage my shopping cart, so that I can decide what I want to buy.
US21	Log out	High	As an Authenticated User, I want to be able to log in and out of my account, so that I can protect my personal information and ensure no unauthorized access to my account.
US22	View profile	High	As an Authenticated User, I want to be able to view my profile, so that I can see my personal data
US23	Edit profile	High	As an Authenticated User, I want to be able to edit my profile, so I can alter my personal data
US24	Delete account	High	As an Authenticated User, I want to be able to delete my account, so that I can remove my personal data from the site when I don't want to use it anymore
US42	Review a game	High	As a Buyer, I want to be able to write a review of a game that I have bought, so that other users can see what I thought of the game.
US43	Give games a score	High	As a Buyer, I want to be able to rate a game from 1 to 5, so that other users have an idea of the quality of the game.

User Story reference	Name	Priority	Description
US44	Delete a game score	High	As a Buyer, I want to be able to delete the score I've given to a game, so that other users don't see it.
US45	Check purchase history	High	As a Buyer, I want to be able to view my purchase history, so that I can check my past purchases.
US46	Delete a game review	High	As a Buyer, I want to be able to delete a previous review I wrote about a game, so that other users can't read it.

Table: vertical prototype implemented user stories

1.2. Implemented Web Resources

Module M01: Authentication and Individual Profile

Web Resource Reference	URL
R101: Login Form	GET /login
R102: Login Action	POST /users/authenticate
R103: Logout Action	POST /logout
R104: Register Form	GET /register
R105: Register Action	POST /register
R106: View User profile	GET /users/{user}
R107: Edit User profile page	GET /users/edit
R108: Edit User profile action	PUT /users/edit
R109: Soft Delete Account	DELETE /users
R110: Save Address In Profile	POST /addresses
R111: Update Address In Profile	PUT /addresses/{address}
R112: Remove Address In Profile	DELETE /addresses/{address}

Table: authentication and profile's implementation

M02: Products

Web Resource Reference	URL
R201: View All Products	GET /

Web Resource Reference	URL
R202: View Product	GET /products/{product}
R203: Search Products	GET /?search={text}
R204: Filter By Category	GET /?category={category}

Table: products' implementation

M03: Reviews and Wishlist

Web Resource Reference	URL
R301: Review a game	POST /reviews
R302: Delete a game review	DELETE /reviews/{review}
R303: View Wishlist	GET /wishlist
R304: Add Product to Wishlist	POST /wishlist/{product}
R305: Remove Product from Wishlist	DELETE /wishlist/{product}

Table: game reviews and wishlist's implementation

M04: Cart

Web Resource Reference	URL
R401: View Shopping Cart	GET /cart
R402: Add to Shopping Cart	POST /cart/{product}
R403: Remove from Shopping Cart	DELETE /cart/{product}
R404: Clear Cart	DELETE /cart
R405: Update Cart	PATCH /cart/{product}
R406: Checkout Items in Cart	POST /checkout

Table: cart's implementation

2. Prototype

For this prototype we focused our efforts in developing the main functionalities of the project. We applied some time on the visual aspect but the design might still have some bugs. Apart from this, it might be easy enough to get an idea of the general layout and easily navigate through the website.

The prototype is available at <http://lbaw23154.lbaw.fe.up.pt>

Credentials:

- user: test@test.com
- password: password

The code is available at <https://git.fe.up.pt/lbaw/lbaw2324/lbaw23154>

Revision History

GROUP23154, 23/11/2023

- Group member 1 João Brandão Alves, up202108670@fe.up.pt
- Group member 2 Eduardo Machado Teixeira de Sousa, up202103342@fe.up.pt (Editor)
- Group member 3 Gonçalo Carvalho Marques, up202006874@fe.up.pt
- Group member 4 Carlos Daniel Santos Reis, up201805156@fc.up.pt