

Sri Lanka Institute of Information Technology

Programming Applications and Frameworks (IT3030)

Continuous Assignment – 2025, Semester 1

Initial Document

Group ID – Y3-S1-WE-70



Group Details:

Name	IT Number
Abeysinghe A.H.M.P. D	IT 22062574
Senadeera H.A.P. N	IT22502360
Hewa Anthonige P.D.M	IT22252418
Senavirathna B.W.J. D	IT22128836

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1. Project Description

The goal of this project is to create a digital platform dedicated to **Dry Craft**, an artisan marketplace that connects craft enthusiasts, artists, and buyers. This platform will allow users to showcase and sell handmade dry crafts such as pottery, woodwork, paper crafts, and textiles. The system will include features for product listing, order management, user interactions, and secure transactions, creating an engaging and functional online marketplace for handcrafted goods.

These are the functions that related to our web application

✓ User Management

The User Management system allows users to create and maintain their profiles, enabling seamless interaction with other crafters on the platform. Users can register and log in to access personalized features, including profile customization, activity tracking, and social engagement. Each user has a profile page that showcases their skill-sharing posts, crafting activities, and learning progress, while also allowing them to search for other crafters by name or interests and follow them to stay updated on their latest projects and activities in their personalized feeds. With publicly visible profiles, the platform fosters a dynamic and interactive community, encouraging knowledge exchange, networking, and a strong sense of collaboration among users.

✓ Craft Project Sharing

Users can share their DIY craft projects with the community using the Post Creation feature. They can upload up to 3 photos or short videos (max: 30 seconds) of their crafts, along with detailed descriptions that explain the materials used, step-by-step instructions, difficulty level, time required, and any other relevant information about the project.

✓ Comment & Likes Management

Users can interact with one another's posts by commenting on them and liking them. Additionally, if the comment's original author chooses to do so, they may edit or delete their previous submission. Post owners can also delete comments on their own posts. Users are notified when someone comments on or likes their post through the notification system integrated into the comments and likes management function.

✓ The Selling Platform

The DIY Craft Marketplace allows users to sell their handmade craft products while giving customers a seamless shopping experience. Buyers can browse a variety of DIY crafts, select item quantity and colors, and securely purchase their favorite products. A "Contact Seller" option enables direct communication for custom orders or inquiries. Sellers can manage inventory, track orders, and update customers through a dedicated dashboard. With secure payments, real-time order tracking, and personalized recommendations, this feature connects craft enthusiasts with unique, handmade products effortlessly.

2. Functional Requirements

2.1. Functional requirements for the Client Web Application

1. User Login & Registration:

Allow users to sign up using forms.

Users should be able to log in using OAuth 2.0 authentication.

2. View and Edit Profile:

Users should be able to view and update their profile details, including their DIY craft posts.

3. Create & Manage DIY Craft Posts:

Users should be able to upload, edit, and delete their DIY craft posts.

4. Like & Comment on Posts

Users should be able to engage with posts by liking and commenting on them.

Enable post owners to delete comments on their posts.

5. Social Interaction Features:

Users should be able to follow others and see updates from followed users.

6. Interactions and Notifications:

Notify users of new comments, likes, and followers. Users should be able to manage their notification preferences.

7. View and Manage Learning Plans:

Users should be able to create, update, and track progress in their structured learning plans.

2.2. Functional requirements for the REST API

1. **CRUD Operations:**

Support Create, Read, Update, and Delete operations for user profiles, posts, workout plans, and meal plans.

2. **Resource Manipulation :**

The API should be able to create, read, update, and delete resources as per the HTTP verbs – POST, GET, PUT, and DELETE respectively.

3. **Error Handling :**

Provide clear error messages for invalid requests or server-side errors.

4. **HATEOAS**

The API should be compatible with HATEOAS (Hypermedia as the Engine of Application State), which calls for the response to contain links to pertinent sites to help clients find and use the API.

5. **Rate limiting**

The API should have a mechanism to limit the number of requests that can be made within a specified period of time, to prevent abuse and ensure fair usage.

6. **Cacheable**

The API should be able to support caching to improve performance and reduce network traffic

3. Non Functional Requirements

3.1. Non-Functional Requirements for the Client Web Application

1. Usability:

Ensure a user-friendly interface suitable for non-technical users.

2. Performance:

Minimize latency for swift user interactions.

3. Scalability:

Ensure the application can handle increased traffic without performance degradation.

4. Security:

Adhere to strict security measures to prevent unauthorized access.

5. Compatibility:

To enable users to use the platform from any location, it should be compatible with a variety of hardware and web browsers.

6. Reliability:

Maintain operational reliability with minimal downtime.

7. Privacy:

Users should have the ability to manage who may see their reviews and personal information on the site, which should respect their privacy.

3.2. Non-Functional Requirements for the REST API

1. Performance:

Even under heavy demand, the API should be built to be extremely performant, with quick response times and little latency.

2. Reliability:

Guarantee consistent responsiveness and availability.

3. Scalability:

The API should be scalable to handle a large number of requests and users, without compromising performance or reliability.

4. Usability:

Provide clear documentation and error handling for ease of use.

5. Interoperability:

Adhere to industry standards for compatibility with different technologies.

6. Extensibility:

Design the API to accommodate future modifications for mobile applications.

7. Compliance:

Ensure adherence to relevant laws and standards.

4. System Architecture Diagram for the 'SkillNet' web application

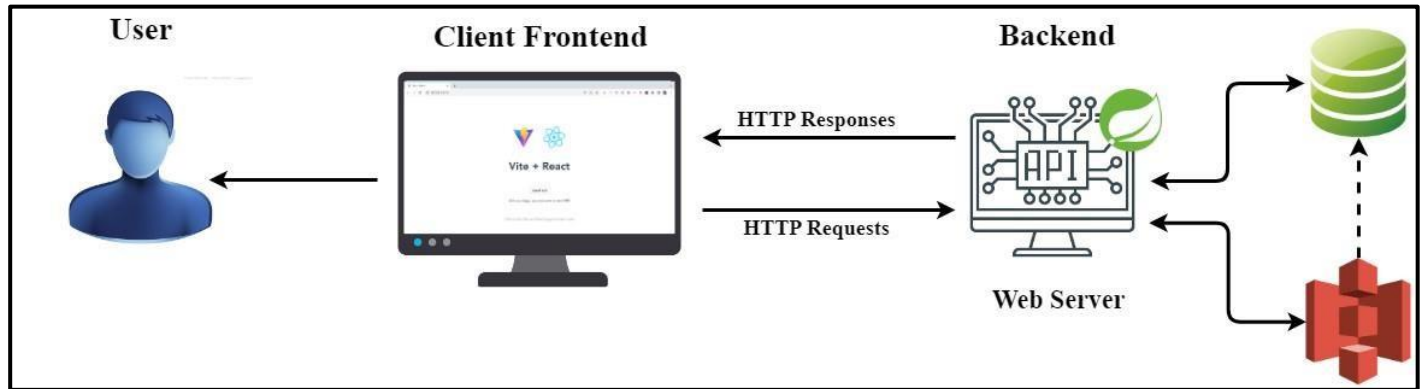


Figure 1: System Architecture Diagram [3]

5. Detailed Architecture Diagram for the REST API

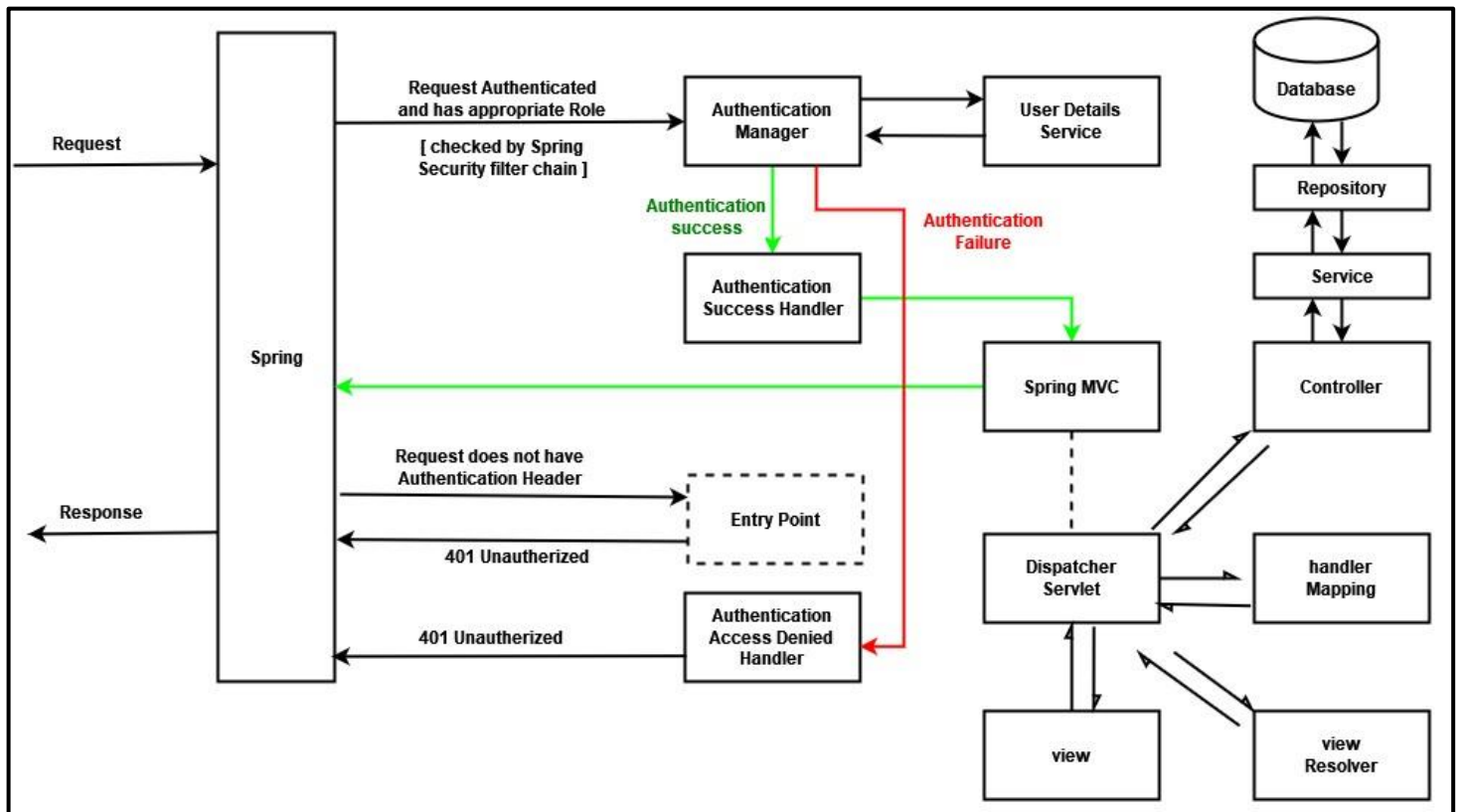


Figure 2: REST API Architecture Diagram [4]

6. Detailed architecture diagram for the client web application

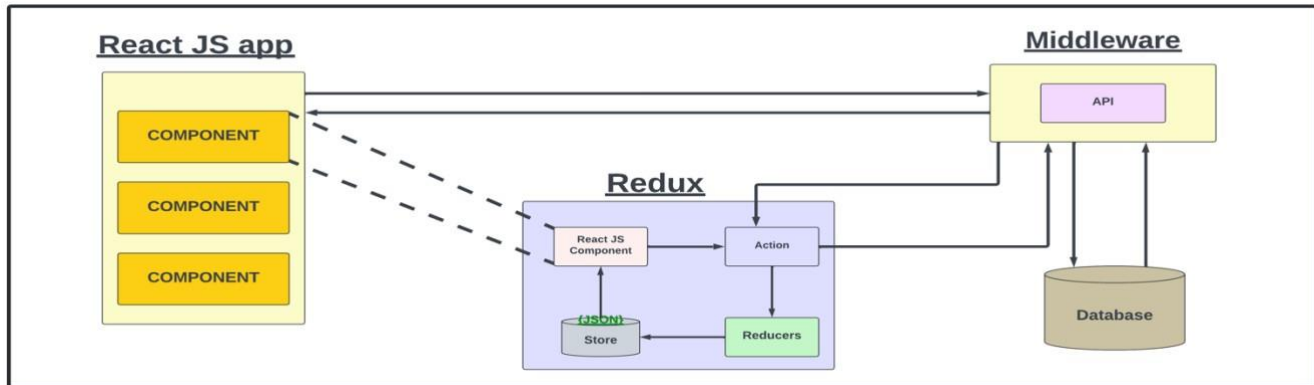


Figure 3: Detailed architecture diagram for the client web application [5]

7. Work Distribution

Name	Function	
Senavirathna B.W.J. D	User Management	<ul style="list-style-type: none"> - Create: Users register with email, phone, or social credentials. - Read: Users view profiles, track activities, and search for others. - Update: Users edit their profile (name, bio, picture, preferences). - Delete: Users delete or deactivate their accounts. - Secure user authentication & authorization. - Profile customization (bio, images, skills). - Follow/unfollow other users. - Activity tracking and social engagement.
Abeysinghe A.H.M.P. D	Craft Project Sharing	<ul style="list-style-type: none"> - Create: Users upload craft projects with photos, videos, and descriptions. - Read: Users view projects from others in a feed. - Update: Users edit/update their own project details. - Delete: Users remove their own projects. - Allow up to 3 images or 30s video uploads. - Detailed craft descriptions (materials, steps, time required). - Community engagement with project visibility.
Senadeera H.A.P. N	Comment & Likes Management	Comment & Likes Management <ul style="list-style-type: none"> - Create: Users add comments and likes on posts. - Read: Users view existing comments and like counts. - Update: Users edit their comments. - Delete: Users remove their comments or post owners

		delete inappropriate comments. - Notify users about new likes/comments. - Edit/delete options for original comment authors. - Owners manage interactions on their own posts.
Hewa Anthonige P.D.M	Selling Platform	Create: Sellers list new handmade craft products. - Read: Buyers browse, filter, and view craft items. - Update: Sellers update product info (price, stock, description). - Delete: Sellers remove products from the store. -Managing Cart - Contact Seller option for custom orders. - Inventory & order management dashboard.

8. Grant Chart

Progress	Mar 10-16	Mar 17-23	Mar 24-30	Apr 1-6	Apr 7- 13	Apr 14- 20	Apr 21- 27	Apr 28- May-4
Initial Document								
Rest API Development								
Client Web Development								
Integration and Testing								
Finalization								