**Modern Web Technologies – Project phase 1**  
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Our proposed application will serve as an e-commerce platform dedicated to offering digital craft patterns for various projects, including but not limited too: crochet, knitting, and embroidery.

**Key features include:**

* Homepage
* About Us
* Login
* Register
* Item Summary
* Sale Section
* Cart
* Checkout
* Discovery Page
* Wishlist
* Contact us

For early development, we intend on using the following free resources:

* freeCodeCamp
* Google Developers Api guides
* Youtube channels such as “The Net Ninja” and “Traversy Media”
* MDN Web Docs
* ChatGPT

**Details**

User Perspective

Target: Crafters who practice or want to explore crochet, knitting or embroidery.

Goals and Experience:

* **Homepage (Read):** Users can browse and filter patterns based on craft and supply type.
* **Login Page (Read, Update):** Users will login to access their purchased patterns.
* **Wishlist Feature (Create, Read, Delete):** Enabling users to save patterns of interest for future purchase, with limited access to certain features.
* **Shopping Cart and Checkout (Create, Read, Update, Delete):** Providing a seamless checkout experience where users can purchase multiple patterns in a single transaction.
* **Pattern Discovery (Read):** Users can browse patterns like ones they’ve saved or purchased.
* **Sale Section (Read):** Users can view discounted patterns and limited time offers.
* **Support Pages:** Offering users to contact the team via “Contact Us” or learn about the page via the “About Us” page.

**Front-End Design**

**Technologies:** React.js

**Styling:** Tailwind CSS

**State Management:** React Context API

**Wireframes:**

1. **Homepage (Read):** Landing page showcasing popular patterns, filters and navigation to other sections.

A screenshot of a computer

Description automatically generated

1. **Login Page (Read, Update):** Fields for email/password and a signup link.

Title

Register Link

Login form :

Username

Password

Keep me signed in option

Submit Button

1. **Register Page (Create):** User registration form with account creation fields.

Title

Register form:

Email or phone number

First Name

Last Name

Password

Confirm Password

Birthday (optional)

Terms and conditions check

Submit Button

Login Link

1. **Item Summary Page (Read):** Displays details of an individual pattern including description, price, and materials.

Photos

Title

Item description

Nav bar

Search

Price

Add to cart link

1. **Sales Section (Read):** Displays discounted patterns and promotional offers.

Ending soon deals

Title

Nav bar

Search

Under $$$

Browse deals by craft

1. **Cart Page (Create, Read, Update, Delete):** Displays selected patterns and a checkout button.

Title

Nav bar

Search

Cart

Item Photo

Item Name

Qnty

Cart Summary

Submit Button

1. **Checkout Page (Create, Read, Update, Delete):** Payment processing and order confirmation.

Title

Cart Summary

Submit Button

Payment Method Form:

Cardholder first name

Cardholder Last name

Card number

Card Expiry

Card CVV

Region

Confirm Card Info Button

Nav bar

1. **Discovery Page (Read):** Grid layout showcasing various patterns, search bar, and filters.

Title

Nav bar

Search

Suggestions based on recent searches

Suggestions based on recent purchases

1. **Contact Us Page (Read):** Form for users to send inquiries or support requests.

Title

Nav bar

FAQs

Contact form:

Name

Email

Comments

Submit Button

1. **About Us Page (Read):** Static informational page about the platform and its purpose.

Title

Nav bar

Creator info and page development updates

**Database Designs**

**Users Table:**

|  |  |  |
| --- | --- | --- |
| **Column** | **Type** | **Desc.** |
| id | INT (PK) | Unique user ID |
| full\_name | VARCHAR | Users full name |
| email | VARCHAR | User’s unique email |
| password | VARCHAR | Encrypted user password |
| purchased\_patterns | JSON | List of purchased pattern IDs |

**Patterns Table:**

|  |  |  |
| --- | --- | --- |
| **Column** | **Type** | **Desc.** |
| id | INT (PK) | Unique pattern ID |
| name | VARCHAR | Pattern name |
| craft\_type | VARCHAR | Type of craft |
| price | FLOAT | Price of product |
| description | TEXT | Product description |
| supplies | JSON | List of required materials |

**Orders Table:**

|  |  |  |
| --- | --- | --- |
| **Column** | **Type** | **Desc.** |
| id | INT (PK) | Unique order ID |
| user\_id | INT (FK) | ID of the user purchasing |
| pattern\_id | INT (FK) | ID of purchased product |
| order\_date | DATE | Date of purchase |

**Back-End Routing**

**Technologies:**

Framework: Node.js with Express.js

Database: Firebase

Authentication: JSON Web Tokens for secure login

API Endpoints (CRUD Operations):

|  |  |  |  |
| --- | --- | --- | --- |
| **Method** | **Endpoint** | **Desc.** | **CRUD Operation** |
| POST | /login | User authentication | Read, update |
| POST | /register | User account creation | Create |
| GET | /patterns | Fetch all available patterns | Read |
| GET | /patterns/:id | Fetch details of a specific pattern | Read |
| POST | /wishlist | Add pattern to wishlist | Create |
| GET | /wishlist/:user\_id | Fetch users wishlist | Read |
| DELETE | /wishlist/:id | Remove pattern from wishlist | Delete |
| POST | /cart | Add pattern to cart | Create |
| GET | /cart/:user\_id | Fetch users cart items | Read |
| DELETE | /cart/:id | Remove pattern from cart | Delete |
| POST | /purchase | Complete purchase and process order | Create |
| GET | /sales | Fetch discounted patterns | Read |

In conclusion, this aims to provide an intuitive and user-friendly experience for craft enthusiasts looking to purchase and manage digital patterns. With a well-structured frontend, secure backend, and efficient database design, users can easily browse, save, and buy patterns while enjoying a seamless experience.