TEAM AB_6 Final Proposal

Elyse Kriegel and James Peterson
COM S 3190 – Construction of User Interfaces

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Contents

1　Introduction

We are Team AB 6, composed of Elyse Kriegel (ekriegel@iastate.edu) and James Peterson (jpeterson@iastate.edu), enrolled in COM S 3190 at Iowa State University.

- **Elyse Kriegel**: Strong background in JavaScript, DOM manipulation, and local storage handling.

- **James Peterson**: Skilled in UI/UX design, layout styling using Bootstrap and Figma.

We initially created a frontend-only e-commerce store for shoes and apparel. Now, we're extending it into a full-stack application using modern web technologies.

2　Purpose of the Proposal

This proposal outlines our plan to evolve our e-commerce project into a fully functional web application using React, Node.js, and MongoDB. The app will support real user data, authentication, persistent shopping cart functionality, and admin-side product management.

3　Goals and Objectives

Goals

- Redevelop static project into full-stack web app.

- Implement user authentication and product management.

- Build responsive, interactive interface.

Objectives

- Rebuild pages with React and React Router.

- Add backend CRUD operations.

- Use MongoDB for persistent storage.

- Implement RESTful APIs for data flow.

- Complete all deliverables on time.

4　Project Description

We are building a multi-page e-commerce site with CRUD operations and authentication.

Planned Pages

1. Login and Signup

2. Home Page

3. Product Catalog

4. Product Detail

5. Shopping Cart

6. Admin Panel

7. Confirmation Page

8. About Page

Technologies

- **Frontend**: React, React Router, Axios

- **Backend**: Node.js, Express

- **Database**: MongoDB

- **Design**: Figma, Excalidraw

5 Project Path Selection

We selected **Option 1: Extend Midterm Project**.

Justification: Our midterm project laid a solid frontend foundation. We are rebuilding the project as React components and integrating backend logic for a scalable full-stack solution.

6 Feature Ownership & Responsibility

Feature	Description	Developer	Tech Involvement
Login & Signup	Secure user registration/login	Elyse Kriegel	React + Node.js/Express
Product CRUD	Admin can manage products	James Peterson	React + Node.js/Express
Search & Filter	Dynamic product filtering	Elyse Kriegel	React + Express
Cart Management	Item quantity, subtotal, and storage	James Peterson	React + Express + MongoDB

7 Resources and Tools

- **Tech Stack**: React, Express, MongoDB, GitLab, Axios

- **Design Tools**: Figma, Excalidraw

- **Other Tools**: Bootstrap, Git

Weekly Time Commitments

- Design and Planning: 3–4 hours

- Frontend Development: 6–8 hours

- Backend Development: 6–8 hours

- Testing and Debugging: 3–5 hours

8 File Structure and Project Organization

```
frontend/
  src/
    assets/
    components/
    App.jsx
    main.jsx
backend/
  routes/
  models/
  controllers/
  server.js
Documents/
  wireframes/
  architecture-doc.pdf
  demo-video.mp4
```

Frontend and backend communicate via RESTful APIs.

9 Data Sources and Management

Data originates from UI input and is stored in MongoDB.

Sample Product JSON

```
{
  "name": "Running Shoes",
  "price": 89.99,
  "category": "Footwear",
  "imageUrl": "url",
  "description": "Lightweight shoes for running."
}
```

CRUD Operations

- **Create**: Admin adds new product.

- **Read**: Users view products.

- **Update**: Admin edits products.

- **Delete**: Admin removes products.

10 User Experience Views

Wireframes created in Figma:

- **Home Page**: Featured items and navigation.

- **Catalog Page**: Product grid with filters.

- **Product Detail Page**: Images, description, and cart button.

- **Cart Page**: List, quantity editing, and subtotal.

- **Login/Signup**: Secure form inputs.

- **Admin Panel**: Product CRUD interface.

11 Final Comments

We're excited to transition our frontend project into a full-stack React app. This will enhance our skills in full-stack development and teach us effective client-server architecture.

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Thank you for your consideration!