

Continuous Assessment 3

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(THE CUSTOM STORE)

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1. INTRODUCTION

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to outline and define all necessary requirements for the **Custom Store project**, an e-commerce platform focused on product customization for items like mugs and T-shirts. This document serves as a foundational reference for developers, designers, and stakeholders, detailing both functional and non-functional requirements to guide software design, development, and testing. By establishing a clear and structured set of requirements, the SRS helps ensure that the Custom Store platform meets user needs for customizing products through features like color selection, text and image editing, and provides a reliable, secure, and high-performance user experience

1.2 Scope

- **Description:** Custom Store enables users to design personalized mugs and T-shirts by selecting colors, adding custom text (with adjustable colors and sizes), and uploading images. The platform supports account creation, login, and checkout functionality.
- **Benefits:** This platform aims to enhance customer engagement by providing a seamless and interactive experience in personalizing products.

1.3 Definitions, Acronyms, and Abbreviations

The Custom Store

The custom T-shirt web application

UI

User Interface

API:

Application Programming Interface (used for integrations, such as image processing or payment gateways)

RGB

Red, Green, Blue

PNG:

Portable Network Graphics

SPA

Single-Page Application

NPM

Node Package Manager

1.4 References

React Documentation : <https://react.dev/>

W3 Schools: <https://www.w3schools.com>

React-Bootstrap: <https://react-bootstrap.netlify.app/>

Google: <https://www.google.com/>

PNG Tree : <https://www.pngtree.com/>

Stack Overflow: <https://stackoverflow.com/>

1.5 Overview

The Custom Store project is an e-commerce platform designed to allow users to personalize and customize products, specifically mugs and t-shirts, through an interactive online interface. Users can select from a variety of base products, choose colors, add custom text, change text styles (color, font, size), and upload images (including personal images). The platform provides a seamless user experience for browsing, customizing, and purchasing personalized products.

The goal of this platform is to provide a simple and intuitive interface for users to create unique, custom-designed mugs and t-shirts. This process is fully customizable, allowing users to specify their exact design preferences. Once the

design is complete, users can request a quote and proceed with purchasing the customized product.

2. GENERAL DESCRIPTION

2.1 Product Perspective

Custom Store is an independent web-based application intended for a broad user base seeking product customization options. It integrates seamlessly with external payment and cloud services, leveraging APIs for real-time product preview and order processing. Custom Store is comparable to other custom printing platforms but focuses on an intuitive user interface and enhanced customization features, including text adjustments and color selection.

Related Systems and Compatibility

Custom Store can operate as a standalone application but can be integrated with other e-commerce platforms through API connections for product catalog updates, real-time inventory management, and cross-platform order handling. It will be compatible with popular operating systems and browsers to maximize accessibility.

2.2 Product Functions

Key Functionalities:

The Product Customization Module is a core feature of the Custom Store that allows users to personalize their chosen products (mugs or t-shirts) through various customization options. The module provides a user-friendly, interactive interface where customers can design their items according to their preferences. The customization options include selecting colors, adding custom text, uploading images, and adjusting design elements like font size and positioning.

Key Functionalities of the Product Customization Module:

1. Product Selection:

- **Mugs:**
 - Users can choose from various types of mugs (e.g., standard mugs, travel mugs, large mugs, etc.).
 - Users can select the mug color (e.g., white, black, red, etc.).
- **T-shirts:**
 - Users can choose from different t-shirt types (e.g., short sleeve, long sleeve, v-neck, etc.).
 - Users can select t-shirt colors from a predefined list of options (e.g., white, black, blue, red, etc.).
 - Users can select sizes for the t-shirt (e.g., Small, Medium, Large, XL, etc.).

2. Text Customization:

- Add Custom Text: Users can input their own text, such as a message, name, or quote, to be printed on the item.
- **Text Formatting Options:**
 - **Font Selection:** Users can choose from a variety of fonts available in the system.
 - **Text Size:** Users can adjust the size of the text (small, medium, large, or custom sizing).
 - **Text Color:** Users can pick a color for the text from a color palette or input a specific color code (e.g., hex, RGB).
 - **Text Positioning:** Users can position the text anywhere on the item. Options for text alignment (left, center, right) and vertical positioning (top, middle, bottom) are available.
 - **Text Effects:** Users can apply effects like bold, italic, underline, and shadow to enhance their text.

3. Image Upload and Customization:

- **Upload Custom Image:** Users can upload their own images, logos, or graphics to be printed on the product.
 - Supported image formats include JPEG, PNG, and SVG.
 - Users can upload personal images from their computer or directly from cloud storage (e.g., Google Drive, Dropbox).
- **Image Editing Options:**
 - **Resize:** Users can resize the uploaded image to fit the product.
 - **Positioning:** Users can position the image anywhere on the product, similar to the text customization.
 - **Image Rotation:** Users can rotate the image to any angle.
 - **Image Effects:** Basic image effects, such as grayscale or sepia, may be applied for artistic customization.

4. Preview and Adjustments:

- **Live Preview:** As users make changes (text, image, color), they can see a real-time preview of how their customized mug or t-shirt will look. This ensures that the final design matches their expectations.
- **Zoom & Pan:** Users can zoom in/out or pan the preview to get a detailed look at their custom design.

5. Multiple Customization Layers:

- Users can add multiple elements (text and images) on top of each other, adjusting the layering order. For example, users might want the text to appear above an image or vice versa.
- The system supports the layering of text and images, and users can adjust the order (front/back) of each layer.

6. Save and Share Designs:

- Users can save their customized design for later. This may be done by creating an account or using a guest session.
- Users can also share their design on social media or via a direct download the file.

7. Quote Request:

- Once the product has been customized, users can request a quote to get the price for their custom product.
- The system calculates the price based on the selected product type, color, size, customization options (text, image), and quantity.
- A detailed quote summary is generated, which includes the final price, estimated shipping cost, and delivery time.
- Users can choose to proceed to checkout or download the quote for later review.

2.3 User Characteristics

The primary users of Custom Store are expected to have basic familiarity with e-commerce sites and online customization tools. This user base includes individual consumers and small businesses.

User Demographics

- **Individuals:** People interested in personalized gifts, such as customized mugs and T-shirts.
- **Business Users:** Small business owners or brands that want to create custom-branded merchandise.

2.4 General Constraints

Image Upload Size: The Custom Store allows users to upload custom images (e.g., logos, personal photos, designs) as part of the product customization process (mugs, t-shirts). Managing image upload size is crucial for ensuring the platform performs efficiently while also maintaining high-quality custom designs.

- **Maximum File Size:** Each image uploaded by the user will be limited to a maximum file size of 10 MB to balance image quality and performance.

Supported Image Formats: The system will accept the following image formats:

- **JPEG:** Ideal for photographic images with rich colors.
 - **PNG:** Best for images with transparency or simpler graphics.
 - **SVG:** Scalable vector graphics (ideal for logos or illustrations with clean lines).
- Other formats (e.g., GIF, BMP) will be rejected with an error message.

Data Security: Data security is critical to ensuring that user data, including personal information, payment details, and custom designs, is securely stored and transmitted. The Custom Store will adhere to industry standards for security, protecting both user data and the images they upload.

Image API : APIs to enhance functionality and provide access to generate and search custom image features such as real-time image search.

2.5 Assumptions and Dependencies

Web Browser Compatibility:

- It is assumed that users will access the platform through modern, standards-compliant web browsers (e.g., Chrome, Firefox, Safari, Edge).
- Older browsers (e.g., Internet Explorer) may not fully support the responsive design, modern JavaScript features, and CSS used in the **Custom Store**. The platform is optimized for the latest versions of popular browsers.

Internet Connectivity:

- The **Custom Store** platform assumes that users will have access to a reliable internet connection for accessing the website, uploading custom images, and completing purchases.

- The platform will function optimally for users with stable internet connectivity but may experience slower performance with intermittent or low-speed connections, especially during image uploads or large file transfers.

Image File Formats and Size:

- Users are expected to upload images in common web formats such as **JPEG, PNG, and SVG**. The platform assumes that images will be properly formatted according to the supported types and fall within the predefined size limits (e.g., up to 10 MB).

Third-Party Design Tools:

- If any advanced design functionality is integrated (such as more complex text effects, image filters, or 3D product views), the **Custom Store** may depend on external libraries or **third-party APIs** (e.g., **Fabric.js**, **Three.js**) for rendering complex images and designs on products.

3. SPECIFIC REQUIREMENTS

3.1 External Interface Requirements

3.1.1 User Interfaces

The Custom Store features a modern and intuitive user interface designed to provide users with a seamless and efficient experience. The UI prioritizes simplicity, functionality, and accessibility, catering to both novice individuals and Business. Here are some key elements of the user interface:

- **Navigation Menu:** A clean and intuitive navigation menu allows users to easily access different sections and features of the application, including design , portfolio management , research resources, and account settings.
- **Color Palette:**The Color Palette allows users to select their preferred color for the product they are customizing. This feature provides a wide

range of color options for both T-shirts and mugs, ensuring that users can choose a color that matches their design vision.

- **Text Editor:** The Text Editor allows users to add custom text to their selected product (mug or T-shirt). This panel provides a rich set of text formatting options, including font selection, text size adjustments, color pickers, and the ability to apply bold, italics, or underline styles. Users can input their text, adjust the font family
- **Image Upload:** The Image Upload area enables users to upload images they want to be printed on their customized product, such as logos, photos, or illustrations. Users can either browse and select images from their device or use the drag-and-drop functionality to quickly upload files.
- **Preview Window:** The Preview Window provides a live, interactive preview of the product as the user customizes it. As users make changes to the product's color, text, or image, the preview window will immediately reflect those modifications. This allows users to see a real-time visual representation of their custom design before placing the order.
- **Download Image:** The Download Image feature allows users to download their customized product design as an image file (e.g., PNG, JPEG). Once the user has finished personalizing their product with text, images, and colors, they can click a "Download" button to generate and save a high-resolution image of their design.

3.1.2 Hardware Interfaces

The Custom Store primarily operates as a web-based application, accessible through standard web browsers on desktop and mobile devices. As such, it does not require specific hardware components beyond those commonly found in standard computing devices. However, the application may have certain hardware interface requirements to ensure optimal performance and usability:

- **Computing Devices:** compatible with various computing devices, including desktop computers, laptops, tablets, and smartphones. Users

can access the application using devices running operating systems such as Windows, macOS, Linux, iOS, and Android.

- **Internet Connectivity:** Reliable internet connectivity is essential for accessing The custom store and receiving real-time market data updates. Users should have access to high-speed internet connections via
- **Display Screens:** The custom store user interface is designed to adapt to different screen sizes and resolutions, offering responsive design elements for optimal viewing on a range of display screens. Users may benefit from larger screens with higher resolutions for enhanced visibility and usability.
- **Input Devices:** Standard input devices such as keyboards, mice, touchpads, and touchscreens are compatible with The custom store for navigating the user interface, inputting text, and interacting with interactive elements such as buttons, menus, and charts.
- **Peripheral Devices:** Users may utilize peripheral devices such as printers, scanners, and external storage devices for tasks such as printing reports, scanning documents, and storing backup data. The custom store should support common peripheral device interfaces such as USB, Bluetooth, and network connections.
- **RAM Requirements:** Minimum 2gb ram for best performance
- **OS Requirements:** Minium Window 7 for best performance3.1.3
Software Interfaces
- **Operating System Compatibility:** Windows, macOS, Linux, iOS, and Android.
- **Browser Support:** Chrome, Firefox, Safari, and Edge (latest versions).
- **APIs:** Integration with third-party APIs for image processing, real-time preview rendering, and secure payment processing.

3.1.3 Software Interfaces

- **Web Browsers:** The custom store is accessed through standard web browsers such as Google Chrome, Mozilla Firefox, Apple Safari, Microsoft Edge, and Opera. The application is optimized for

compatibility with modern web browsers and relies on web technologies such as HTML5, CSS3, and JavaScript for rendering the user interface and delivering dynamic content.

- **Operating Systems:** The custom store is platform-independent and compatible with various operating systems, including Windows, macOS, Linux, iOS, and Android. Users can access the application using desktop computers, laptops, tablets, and smartphones running these operating systems.

3.1.4 Communications Interfaces

- **HTTP/HTTPS:** The custom store communicates with client devices via Hypertext Transfer Protocol (HTTP) or its secure variant, HTTPS, for transmitting web pages, user requests, and application data over the internet. HTTP/HTTPS protocols ensure secure and reliable communication between the application server and client browsers.
- **WebSockets:** The custom store utilizes web Sockets to establish bidirectional, real-time communication channels between the client browser and the application server. web Sockets enable instant updates and notifications, facilitating dynamic content delivery, live market data streaming, interactive user experiences.
- **Json:** The custom store exchanges data with client devices and external services in JavaScript Object Notation (JSON) or Extensible Markup Language . JSON formats are commonly used for structuring and transmitting data between the application frontend, backend, and external APIs.
- **Secure Socket Layer (SSL)/Transport Layer Security (TLS):** The custom store employs SSL/TLS encryption protocols to secure communication channels and protect sensitive data transmitted over the internet.

3.2 Functional Requirements

- **User Registration and Login:** The system must allow users to create an account by providing necessary information such as name, email, password, and shipping details. The users should also be able to log in using their credentials.
- **Product Selection:** Users must be able to select a product (e.g., T-shirt, mug) from a list of available items.
- **Color Palette:** Users should be able to select the color of the product (T-shirt or mug) using an interactive color palette.
- **Text Customization:** Users must be able to add custom text to the product, choosing the font, size, and color.
- **Image Upload:** Users must be able to upload custom images (e.g., logos, personal photos) to their selected product.
- **Product Preview Window:** A preview window should display a real-time visual representation of the customized product.
- **Image generation :** Once the user customizes the product, the system should generate an image of the design.
- **Download Image:** After finalizing the design, users should be able to download a high-resolution image of their custom product.

3.2.1 Product Customization

- **Inputs:** Product selection, color choices, text content, and image uploads.
- **Processing:**
 - Change colors and apply to product templates in real-time.
 - Handle text rendering with font size, color, and style changes.
 - Image handling includes resizing, positioning, and validation of file formats.

- **Outputs:** Real-time product preview for visual confirmation of choices.
- **Error Handling:** Display warnings for unsupported file types or exceeded file sizes.

3.2.2 User Account Management

- **Inputs:** Username, password, and other account details.
- **Processing:** Authentication and profile updates with secure storage.

3.3 Non-Functional Requirements

3.3.1 Performance

- Ensure fast response times for data retrieval and user interactions.
- Handle concurrent user requests efficiently.

3.3.2 Reliability

- Ensure 99.9% uptime with database redundancy.

3.3.3 Availability

- Maintain high availability of the application with minimal planned
- Scalability to accommodate increasing user demand.

3.3.4 Security

- Implement authentication and authorization mechanisms to ensure secure
- Encrypt sensitive user data to protect against unauthorized access.

3.3.5 Maintainability

Use modular code to facilitate updates and maintenance. All code must be well-documented to assist future developers.

3.3.6 Portability

Ensure the application is portable across common operating systems and browsers.

4. ANALYSIS MODELS

4.1 Data Flow Diagrams (DFD)

Level 0 DFD: Overall System

1. **User initiates** product customization, leading to the backend processing.
2. **System stores** user choices in a temporary session.
3. **Final selections** proceed to the get quote

5. GITHUB LINK

<https://github.com/ujjwal-aggarwal07/TheCustomStore>

6. DEPLOYED LINK

<https://the-custom-store.vercel.app/>

7. TRANSACTION ID PROOF

Googe Pay Transaction Id:431925650394

A. APPENDICES

A.1 Appendix 1

Risk Management Policies: Detailed overview of risk management policies and procedures, including risk assessment methodologies, mitigation strategies, and compliance protocols.

Cybersecurity Measures: Description of cybersecurity protocols and measures implemented to safeguard client information, prevent data breaches, and ensure the security of systems and networks.

References and Testimonials: references testimonials from satisfied clients or business partners, demonstrating ~~put~~ and credibility in the industry.