SOFTWARE REQUIREMENTS SPECIFICATION

For

Textile E-commerce Website

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Academic Year: *2023-2024*

1. Introduction
1.1 Purpose

A textile e-commerce website is a digital platform designed to facilitate the online buying and selling of textile products. This dynamic online marketplace connects textile manufacturers, wholesalers, and retailers with a global customer base, offering a wide range of fabrics, clothing, accessories, and home textiles. The primary purposes of such a website are to provide convenience to customers, expand market reach for businesses, and streamline the textile shopping experience. Key features include product variety, price comparison, customization options, secure payment and shipping methods, customer reviews, and valuable information on textiles and fashion trends. With 24/7 accessibility and a potential for global outreach, textile e-commerce websites serve as essential hubs for the textile industry, catering to the evolving needs of both consumers and businesses while fostering innovation and sustainability in the textile sector.

1.2 Document Conventions

Entire document should be justified.
Convention for Main title

- Font face: Times New Roman
- Font style: Bold
- Font Size: 14

Convention for Sub title

- Font face: Times New Roman
- Font style: Bold
- Font Size: 12

Convention for body

- Font face: Times New Roman
- Font Size: 12

1.3 Scope of Development Project

A textile e-commerce website offers a wide-ranging scope that transcends geographical boundaries, connecting textile businesses with a global customer base. These platforms showcase an extensive array of textile products, from fabrics and clothing to home textiles and accessories, catering to both individual consumers and bulk buyers. With customization options, sustainability initiatives, and a focus on fashion trends, they remain versatile hubs within the

textile industry. Furthermore, they provide essential features such as secure payment processing, logistics coordination, and user-friendly interfaces to enhance the overall shopping experience. The scope extends to data analytics, marketing, and compliance with e-commerce regulations, ensuring that these websites continue to evolve in response to technological advancements and changing customer expectations.

1.4 Definitions, Acronyms and Abbreviations

REACT -> A JavaScript library used for building user interfaces and web applications.
MongoDB-> A NoSQL database management system
ER-> Entity Relationship
UML -> Unified Modeling Language
IDE-> Integrated Development Environment
SRS-> Software Requirement Specification
B2B: Business-to-Business
B2C: Business-to-Consumer
E-commerce: Electronic Commerce
IEEE ->Institute of Electrical and Electronics Engineers

1.5 References

- A Survey on Blockchain-Based Telecommunication Services Marketplaces by Roman-Valentyn Tkachuk; Dragos Ilie; Kurt Tutschku; Remi Robert
- An online marketplace for geosocial data by Yaron Kanza; Hanan Samet
- Reselling, consignment or In-Marketplace selling Mode? Competitive strategy for E-tailers to counteract online third-party marketplaces by Huaqing Hu, Gaoyan Lyu, T.C.E. Cheng, Yunhuan Zhang
- Do Noisy Customer Reviews Discourage Platform Sellers? Empirical Analysis of an Online Solar Marketplace by Herbie Huang, Nur Sunar

2. Overall Descriptions
2.1 Product Perspective
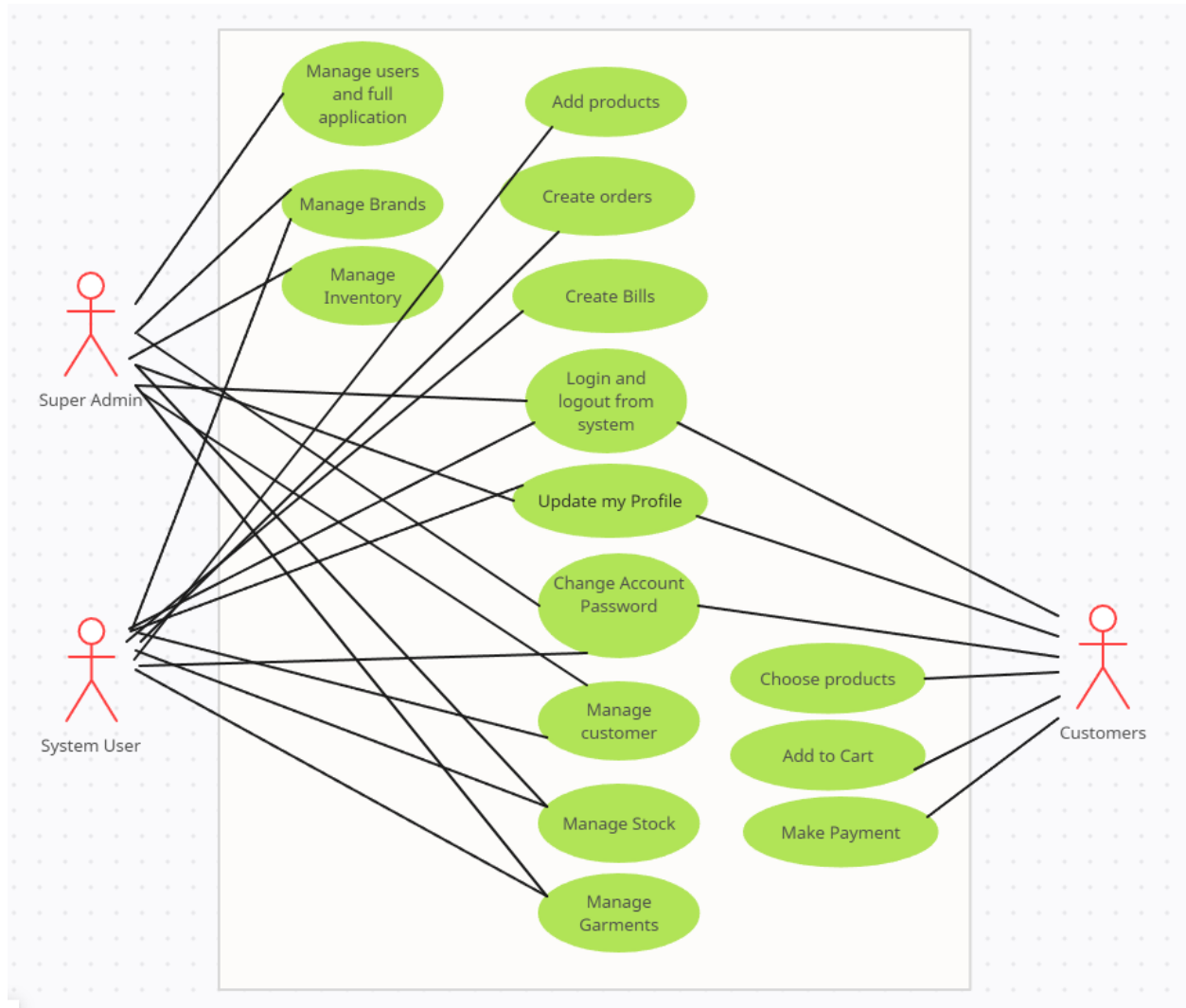
In e-commerce textile industry website customers and visitors can browse and search for textile products,view detailed information about a specific product,add products to their shopping cart,make payments using the payment gateway,manage their account information, including addresses and payment methods.The administrator manages products, user accounts, and website content,can view and manage customer orders,Interaction with external shipping services to handle product delivery.

2.2 Product Function

Entity Relationship Diagram of Textile ecommerce website
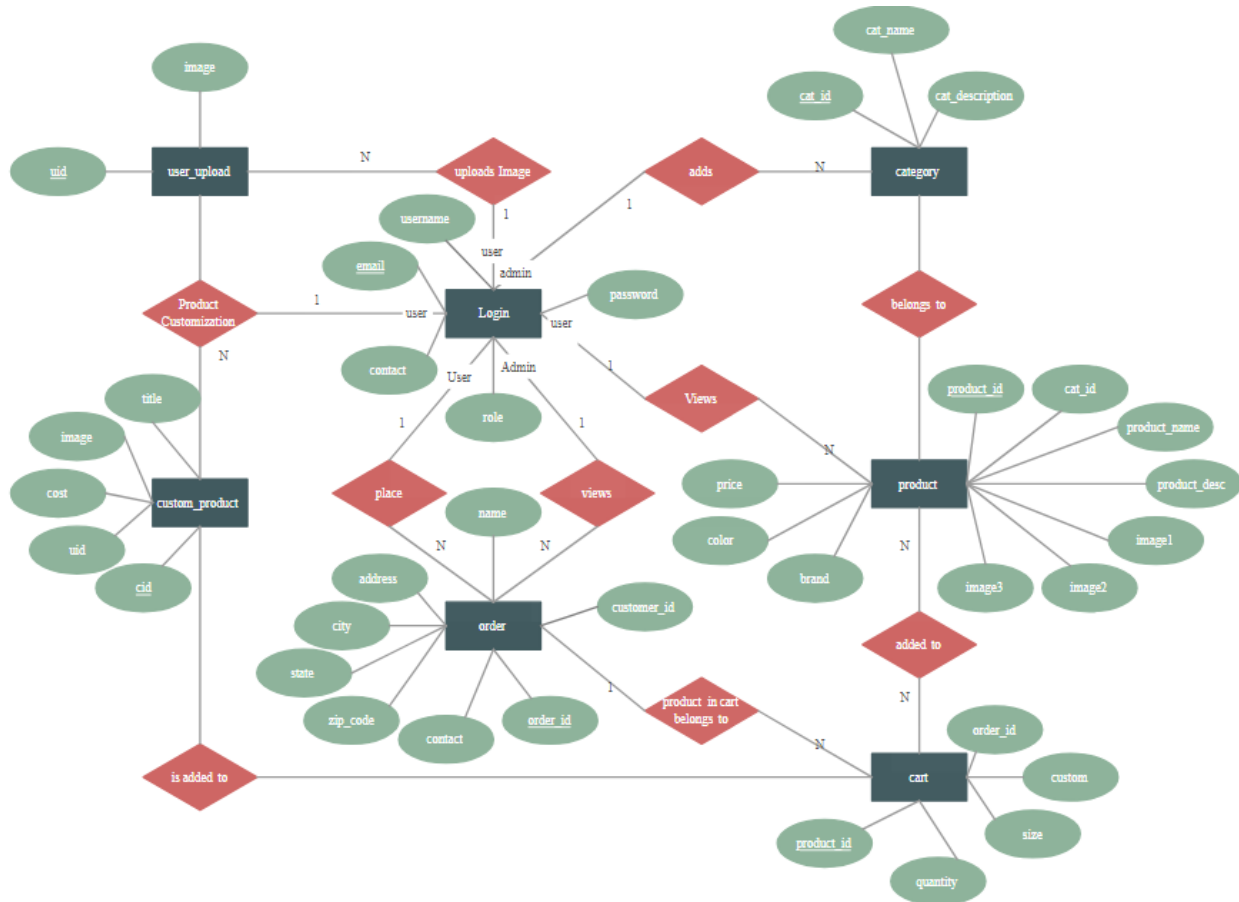
The textile e-commerce website serves as a digital marketplace, offering a diverse array of textile products while enabling secure and customizable shopping experiences. It empowers customers to compare prices, choose from various payment and shipping options, and make informed decisions through customer reviews and fashion trend insights. For businesses, it expands market reach by connecting manufacturers, wholesalers, and retailers with a global customer base. Moreover, the website plays a crucial role in fostering innovation and sustainability within the textile industry, promoting eco-friendly products and responsible consumption. With its 24/7 accessibility and potential for worldwide outreach, it stands as an essential hub for the ever-evolving needs of both consumers and businesses in the textile sector.

2.3 User Classes and Characteristics

The features that are available to the System Admin are:-
Manages the user account, product and inventory control, orders, supplier relations, financial oversight, content updates, security, analytics, promotions, customer support, logistics, website maintenance, compliance, customer feedback, and sustainability initiatives.

The features that are available to the Customers are:-

User registration, account management, browsing, searching, shopping cart, product reviews, wishlists, checkout, order tracking, returns, customer support, order history, notifications, privacy/security settings, mobile accessibility, feedback/surveys, and social sharing/recommendations.

2.4 Operating Environment

The product will be operating in windows environment. A textile e-commerce is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer,Google Chrome,and Mozilla Firefox.Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

The hardware configuration include Hard Disk: 40 GB, Monitor: 15" Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

2.5 Assumptions and Dependencies
The assumptions are:-
The coding should be error free
The system should be user-friendly so that it is easy to use for the users
The information of all users, products and their descriptions must be stored in a database that is accessible by the website
The system should have more storage capacity and provide fast access to the database
The system should provide search facility and support quick transactions
The textile e-commerce website is active 24 hours a day
Users may access from any computer that has Internet browsing capabilities and an
Internet connection
Users must have their correct usernames and passwords to enter into their online accounts
and do actions
The dependencies are:-
The specific hardware and software due to which the product will be run
On the basis of listing requirements and specification the project will be developed and run
The end users (admin) should have proper understanding of the product
The system should have the general report stored
The information of all the users must be stored in a database that is accessible by the
System administrators
Any update regarding the book from the library is to be recorded to the database and the
data entered should be correct

2.6 Requirement

Software Configuration:-

This software package is developed using React as front end. MongoDB as the back end to store the database.

Operating System: Windows NT, windows 98, Windows XP

Language: React, Visual Studio Code (front end)

Database: MongoDB (back end)

Hardware Configuration:-

Processor: Pentium(R)Dual-core CPU

Hard Disk: 40GB

RAM: 256 MB or more

2.7 Data Requirement
To effectively operate the textile e-commerce website, a substantial amount of data is essential. This data encompasses comprehensive product details, including descriptions, images, prices, and availability, as well as seller information to connect manufacturers, wholesalers, and retailers with customers. Real-time pricing and secure payment transaction data ensure smooth transactions, while shipping and logistics information guarantees reliable delivery options. Customer reviews and ratings contribute to informed decision-making, and a database of textile information and trends keeps customers engaged. The website's global accessibility requires robust server infrastructure, and user account data personalizes experiences. Sustainability metrics are also vital, promoting eco-friendly textile choices. Collectively, this data enables the website to cater to a global audience, streamline textile shopping, and foster innovation and sustainability in the textile industry.

3. External Interface Requirement
3.1 GUI
Creating a graphical user interface (GUI) for the textile e-commerce website based on the provided abstract:

Main Dashboard:
- [User] [Administrator] (User Type Selection)

User Dashboard:

- [Browse Products] [Search] [View Cart] [View Orders]
- [Customize UI] [User Profile] [Logout]

Administrator Dashboard:
- [Add Product] [Update Product] [View Product Details]
- [View Reports] [Stock Verification] [Search Products]
- [Customize UI] [User Management] [Logout]

Login Interface:
- Username: [_____]
- Password: [_____]
- [Login] [Register]

Search:
- Type of Textile: [_____]
- Specific Item: [_____]
- [Search]

Categories View:
- Categories List: [List of Categories]
- [Add Category] [Edit Category] [Delete Category]

Product Details Page:
- Product Image
- Description
- Price
- Customization Options
- [Add to Cart] [Buy Now]

Cart Page:
- List of Added Products
- Subtotal
- [Checkout]

Order History:
- List of Previous Orders
- Order Details
- [Reorder]

User Profile:
- User Information
- [Edit Profile] [Change Password] [Logout]

This GUI layout provides an intuitive and user-friendly interface for both users and

administrators of the textile e-commerce website. Users can browse, search, customize their experience, and manage their profile, while administrators have control over product management, reporting, and user management. The design adheres to simplicity and standardization to ensure a seamless shopping experience and foster innovation and sustainability in the textile industry.

4. System Features

The textile e-commerce website boasts an array of system features designed to create a seamless online shopping experience for customers and facilitate the operations of textile manufacturers, wholesalers, and retailers. This dynamic digital platform offers an extensive variety of textile products, including fabrics, clothing, accessories, and home textiles, catering to a diverse customer base worldwide. Key functionalities encompass price comparison tools, enabling customers to make informed purchasing decisions, while customization options empower them to personalize their textile selections. Secure payment methods and a range of shipping options ensure smooth transactions and reliable delivery. Customer reviews and ratings provide valuable insights, enhancing buyer confidence, and informative content on textiles and fashion trends keeps users engaged. The website's 24/7 accessibility allows it to reach customers across time zones, fostering global outreach. Additionally, user management features, inventory control, advanced search and filtering, and sustainability initiatives further enrich the platform, making it an essential hub for the textile industry, promoting innovation, and catering to evolving consumer and business needs.

5. Other Non-functional Requirements

5.1 Performance Requirement

The performance requirements for a textile e-commerce website are crucial to ensure a seamless and efficient user experience. Firstly, the website should aim for rapid response times, with pages loading swiftly, ideally within 2-3 seconds, to prevent user frustration. It should also possess scalability, capable of accommodating increased user traffic during peak periods without compromising performance. Concurrency is essential, with the ability to support a substantial number of users simultaneously, enabling them to browse, search, and make transactions without encountering system bottlenecks. Furthermore, database performance optimization is imperative to facilitate quick retrieval and updating of product data, user profiles, and order processing. The search functionality should be highly efficient, delivering prompt and relevant results even when handling a vast product catalog, and offering real-time filtering and sorting options. These performance requirements collectively ensure that the textile e-commerce website operates smoothly, enhancing customer satisfaction and encouraging continued engagement.

5.2 Safety Requirement

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

5.3 Security Requirement

System will use secured database
Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
System will have different types of users and every user has access constraints Proper user authentication should be provided
No one should be able to hack users' password
There should be separate accounts for admin and members such that no member can access the database and only admin has the rights to update the database.

5.4 Requirement attributes
There may be multiple admins creating the project, all of them will have the right to create changes to the system. But the members or other users cannot do changes The project should be open source
The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database
The user be able to easily download and install the system

5.5 Business Rules
A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

5.6 User Requirement
User requirements for a textile e-commerce website are critical for ensuring customer satisfaction and usability. Firstly, users expect an intuitive and user-friendly interface that allows them to easily browse and search for textile products. The website should provide a wide variety of fabrics, clothing, accessories, and home textiles, ensuring a comprehensive product catalog that caters to diverse preferences. Customization options are highly desired, enabling users to personalize their textile selections by choosing fabric types, colors, and sizes. Transparent and secure payment methods, along with reliable shipping options, are essential to instill trust and confidence in the purchasing process. Access to customer reviews and ratings aids in informed decision-making, while informative content on textiles and fashion trends keeps users engaged and educated. Furthermore, users require 24/7 accessibility to the website to accommodate different time zones and schedules. User profiles and account management features should be available, allowing customers to track orders, save preferences, and manage personal information conveniently. Ultimately, users expect a convenient, enjoyable, and secure online shopping experience when using the textile e-commerce website.

6. Other Requirements
6.1 Data and Category Requirement
Data and category requirements are fundamental for the effective functioning of a textile e-commerce website. In terms of data, it is essential to maintain a comprehensive and up-to-date

product catalog. This includes detailed information about fabrics, clothing, accessories, and home textiles, such as descriptions, images, prices, sizes, colors, and availability. Additionally, data related to seller information, including contact details and product portfolios, must be accessible for both customers and administrators. Pricing data should be real-time and accurate, supporting price comparison features. Furthermore, the website needs to manage secure payment transactions and maintain shipping data for various delivery options, tracking, and order updates. Customer reviews and ratings data contribute to informed purchasing decisions and build trust.

Regarding categories, effective categorization of products is crucial for a seamless user experience. Categories should be well-structured and intuitive, enabling easy navigation through the product catalog. This categorization system helps customers quickly find what they're looking for, whether it's a specific type of fabric, clothing item, accessory, or home textile. It's also important to provide the capability to add, edit, or delete categories, allowing administrators to adapt to changing inventory and customer preferences. Overall, robust data management and a well-organized category structure are essential elements for a successful textile e-commerce website, enhancing both customer satisfaction and administrative efficiency.
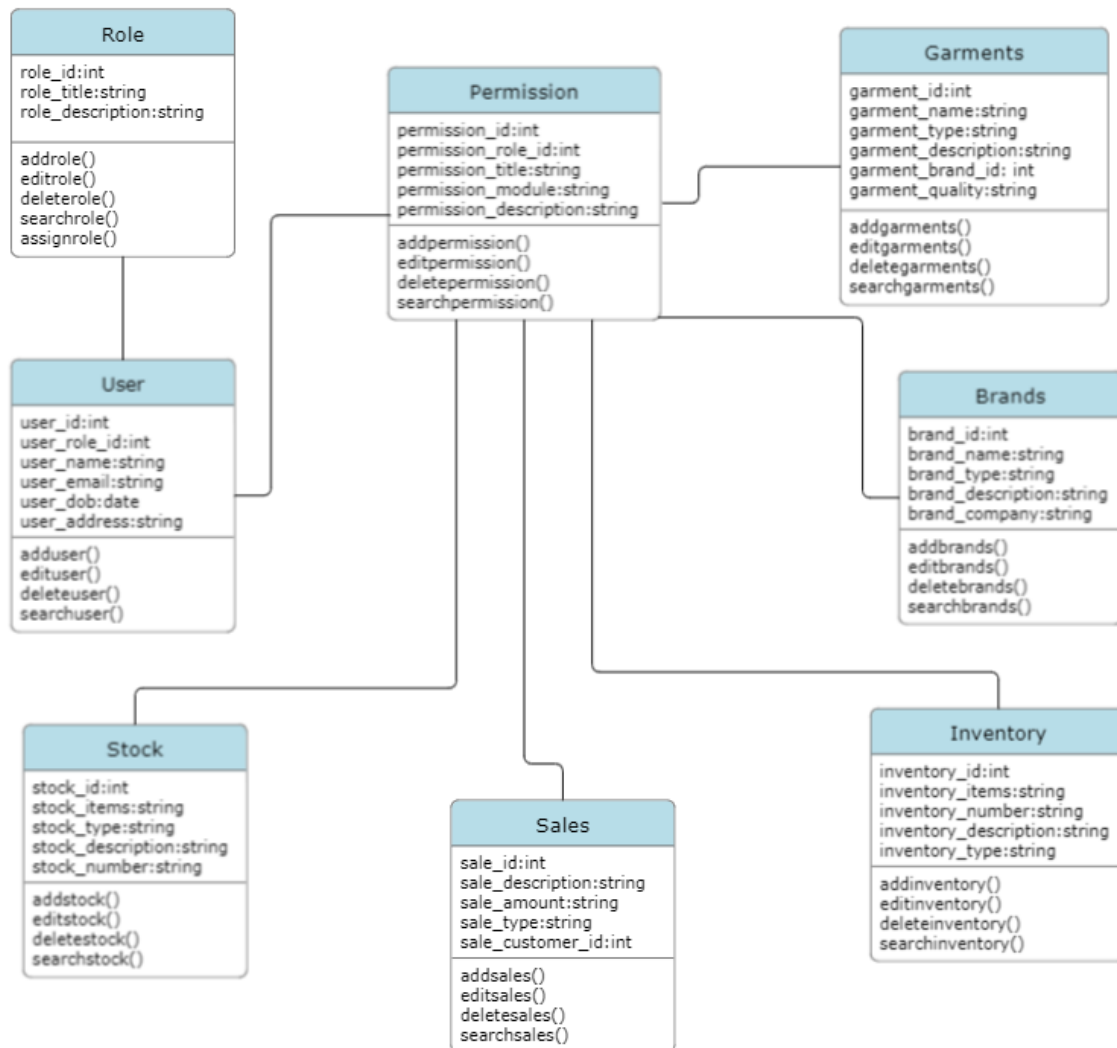
6.2 Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Basket, Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; L: Login, Logout; M: Member; N: Non-functional Requirement; O: Operating environment; P: Performance,Perspective,Purpose; R: Requirement, Requirement attributes; S: Safety, Scope, Security, System features; U: User, User class and characteristics, User requirement;

6.3 Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

▢ Administrator: A login id representing a user with user administration privileges to the software

▢ User: A general login id assigned to most users

▢ Client: Intended users for the software

MongoDB-> A NoSQL database management system

▢ Layer: Represents a section of the project

▢ User Interface Layer: The section of the assignment referring to what the user interacts with directly

▢ Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed

▢ Data Storage Layer: The section of the assignment referring to where all data is recorded ▢ Use Case: A broad level diagram of the project showing a basic overview ▢ Class diagram: It is a type of static structure diagram that describes the structure of a

system by showing the system's cases, their attributes, and the relationships between the classes

▢ Interface: Something used to communicate across different mediums

▢ Unique Key: Used to differentiate entries in a database

6.4 Class Diagram

Role
- role_id:int
- role_title:string
- role_description:string

- addrole()
- editrole()
- deleterole()
- searchrole()
- assignrole()

Permission
- permission_id:int
- permission_role_id:int
- permission_title:string
- permission_module:string
- permission_description:string

- addpermission()
- editpermission()
- deletepermission()
- searchpermission()

Garments
- garment_id:int
- garment_name:string
- garment_type:string
- garment_description:string
- garment_brand_id: int
- garment_quality:string

- addgarments()
- editgarments()
- deletegarments()
- searchgarments()

User
- user_id:int
- user_role_id:int
- user_name:string
- user_email:string
- user_dob:date
- user_address:string

- adduser()
- edituser()
- deleteuser()
- searchuser()

Brands
- brand_id:int
- brand_name:string
- brand_type:string
- brand_description:string
- brand_company:string

- addbrands()
- editbrands()
- deletebrands()
- searchbrands()

Stock
- stock_id:int
- stock_items:string
- stock_type:string
- stock_description:string
- stock_number:string

- addstock()
- editstock()
- deletestock()
- searchstock()

Sales
- sale_id:int
- sale_description:string
- sale_amount:string
- sale_type:string
- sale_customer_id:int

- addsales()
- editsales()
- deletesales()
- searchsales()

Inventory
- inventory_id:int
- inventory_items:string
- inventory_number:string
- inventory_description:string
- inventory_type:string

- addinventory()
- editinventory()
- deleteinventory()
- searchinventory()

Home page: The main landing page that introduces the website, showcases featured products, and provides links to other sections.

Product Listings: Category and subcategory pages where users can browse textile products. These pages may include filters and sorting options.

Product Detail Pages: Individual pages for each product, featuring high-quality images, detailed descriptions, pricing, size options, and customer reviews.

Shopping Cart:

Checkout: The page where users provide shipping information, select payment options, and confirm their orders.