American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

Summer 22 23

<Lookoid>

Software Requirement Engineering

Sec: **E**

Project submitted

By

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Date: 10.07.23

1.PROBLEM DOMAIN

1.1 Background to the Problem

- Now a days in general all clothing companies are making themselves more available to their customers, which is by creating their own websites. In Bangladesh due to a lack of opportunities, many artisans and craftspeople in these areas struggle to make ends meet. Like other companies Lookoid an indie, was founded to address this issue by providing a platform for rural artisans to showcase their skills and sell their products in urban markets. In addition to promoting local craftsmanship.

- The root causes of issues with an ecommerce site can vary widely and may include factors such as poor website design, technical problems, insufficient marketing, inadequate customer support, bad services, competition, and economic or industry trends. It is important to identify the root causes of any issues within a clothing site like "Lookoid" because they can impact the site's performance, reputation, and revenue.

1.2 Solution to the Problem

- The activities of the customers and users are provided by our system. With the use of this system the admin may handle things like customers information, order lists, registrations, payment, address. We are making sure that the customer's data is secure. These are some solutions that are addressed:

  I. Optimize website performance: E-commerce websites need to be fast, user-friendly, and easily navigable to ensure that customers have a positive experience
  II. Ensure website security: Customers need to feel secure when making purchases online.
  III. Utilize marketing strategies: Businesses can utilize various marketing strategies, such as email marketing, social media marketing, and paid advertising, to increase website traffic and sales.
  IV. Provide excellent customer service: Providing excellent customer service can help build customer loyalty and encourage repeat purchases.

- Optimizing website performance and ensuring website security are essential for creating a positive user experience and building trust with customers. Utilizing marketing strategies and providing excellent customer service can help increase website traffic and sales, which aligns with the business objective of increasing revenue. And utilizing analytics tools can provide

valuable insights into customer behavior and help businesses make data-driven decisions to improve website performance and meet business objectives.

- Our suggested web-based software’s primary function is to facilitate online shopping for customers by offering a convenient and user-friendly e-commerce platform for Lookoid's products. The website's main objective is to increase sales, expand the customer base, and improve the brand image of Lookoid. Lookoidbd.com's main function is to provide customers with an easy and secure way to browse, select, and purchase lookoid's products online, with a wide range of products available, secure payment options, and home delivery services.

2. SOLUTION DESCRIPTION

2.1 System Features

1. Log in feature

Functional requirement

1.1 The user login into the software with their username and password.

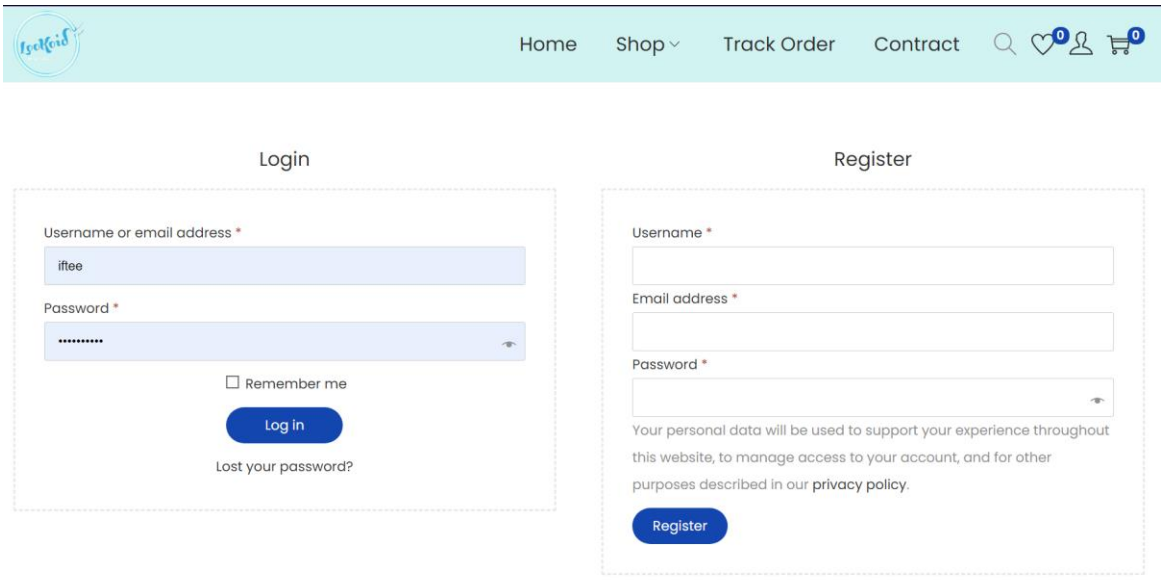
1.2 If the login is successful the main my-account page in this software will be displayed.

1.3 If the user forgets the username or password, they can reset password using their valid email address.

Priority level: High

Precondition: User have valid username and password.

Cross- references: None



2. Admin

Functional Requirements

2.1 Monitoring user information by maintaining accurate database of all ID.

2.3 Admin will able to see the payment status. If paid by any online platform

2.4 Admin can assign new user without registrations like manager, Moderators, customer

3. Account

Functional Requirements

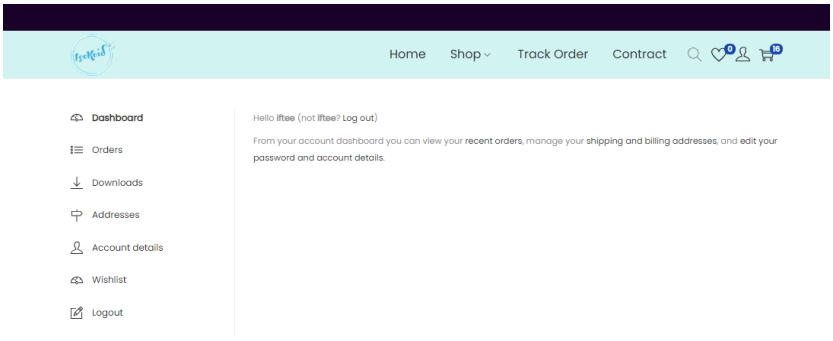
3.1 Payment can be complete by 2-way Cash on delivery and online payment

3,2 The Payment slip can be gotten after place order and will be save into the user account

3.3 All information will be showing the user account

Priority level: High

Precondition: Online Payment system must be pay using user ID.



4 Search

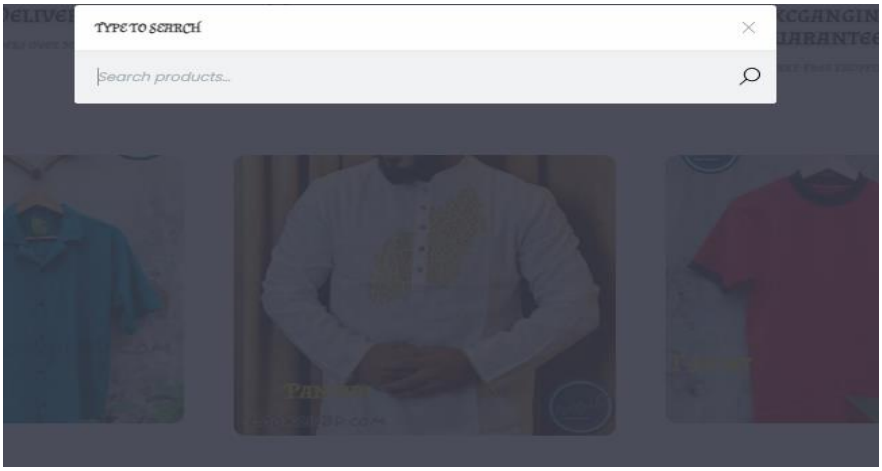
Functional Requirements

1.User can search any product what he expecting

2. User can also filter the amount

Priority level: Medium

Precondition: None



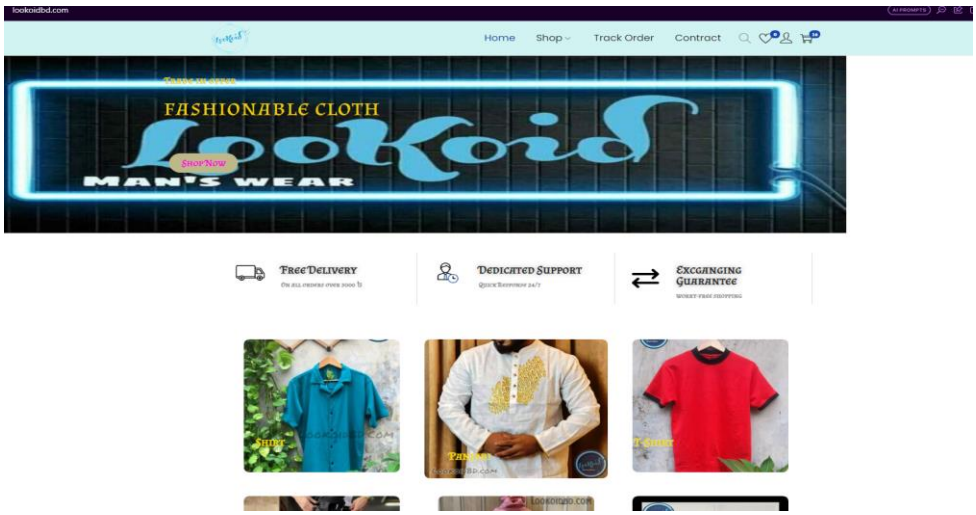
5. Homepage

Functional Requirements

1. The website shall allow users to log in or create accounts, enabling personalized experiences and order history tracking.
2. The website shall display featured products, categories, and new arrivals with high-quality images, product names, and prices.

3. The System shall provide a search bar to allow users to search for specific products, brands, or categories.
4. The system shall include a clear and organized menu that categorizes products, making it easy for users to browse.
5. The website shall display user-generated reviews and ratings for products, enhancing trust and aiding purchase decisions.

Priority Level: High
Precondition: No
Cross-reference: NA

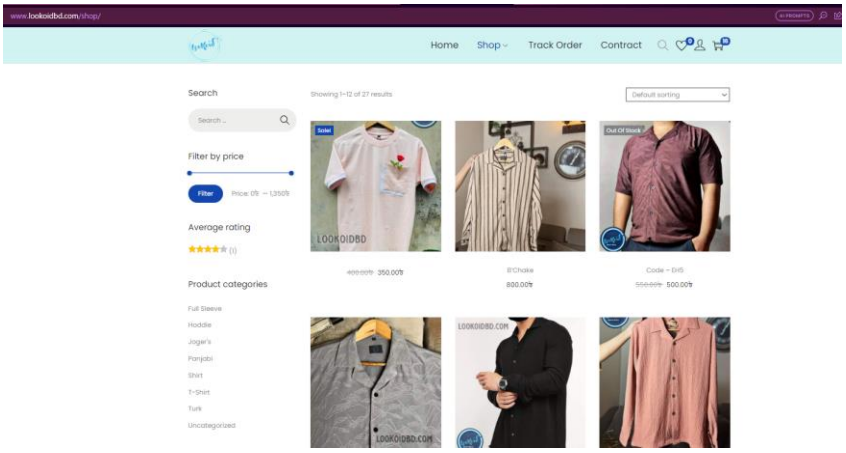


6. **Shop Page**

Functional Requirements

1. The website shall organize products into clear and intuitive categories (e.g., men's, women's, kids', accessories) for easy browsing.
2. The website shall provide advanced search options and filters (e.g., size, color, price range) to help users narrow down choices.
3. The website shall display products in a grid or list view with thumbnail images, product names, prices, and quick view options.
4. The website shall allow users to click on products to view detailed information, including images, descriptions, sizes available, and color options.
5. The website shall include an option to add products to the shopping wishlist directly from the 'Shop' page.

Priority Level: High
Precondition: No
Cross-reference: NA

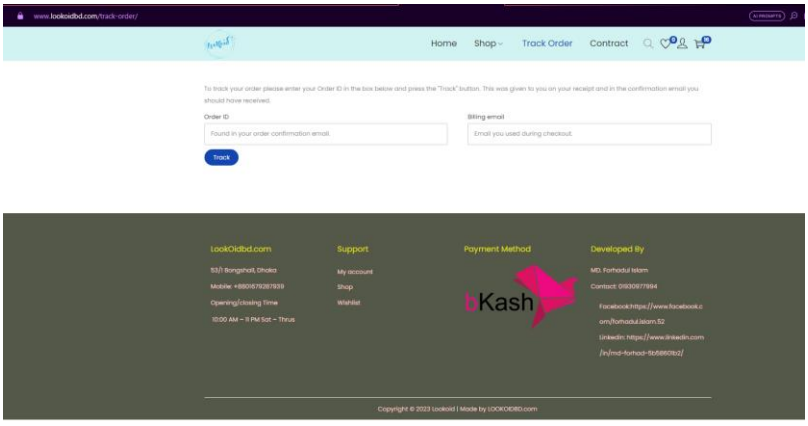


7. **Order Tracking**

Functional Requirements

1. The website shall provide a search field where customers can enter their order id or relevant details.
2. The website shall display the current status of the order, such as "Processing," "Shipped," or "Delivered."
3. The website shall provide an estimated delivery date based on the current status and shipping information.
4. The website shall include customer support contact information for any inquiries or issues.
5. The website shall show the delivery address associated with the order.

Priority Level: High
Precondition: The user must log in.
Cross-reference: 1.1

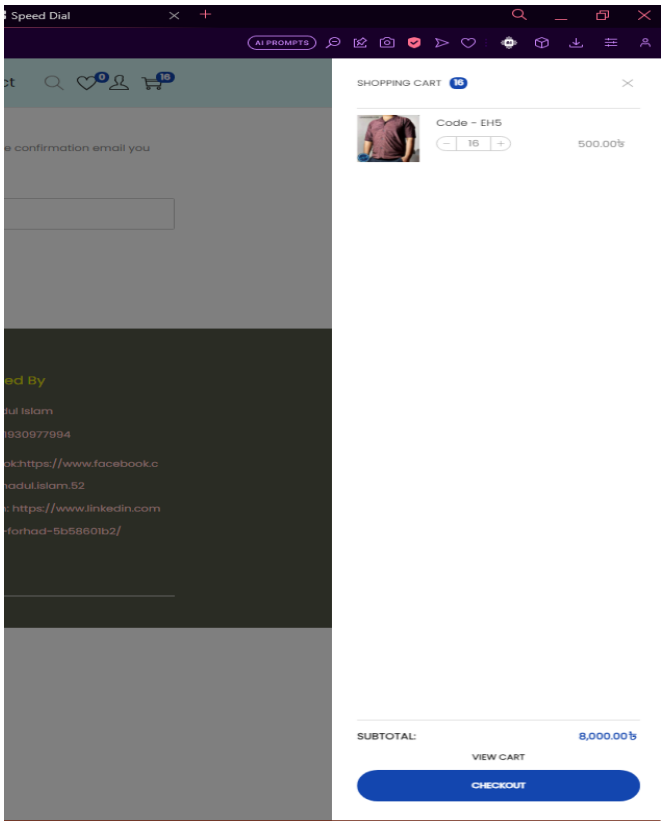


8. **Cart**

Functional Requirements

1. The website shall display selected items with images, names, quantities, sizes, and prices.
2. The website shall allow users to modify item quantities or remove items easily.
3. The website shall show the total cost of all items in the cart.
4. Provide a clear call-to-action button for users to proceed to checkout.
5. Provide an option for users to estimate shipping costs before checkout.

Priority Level: High
Precondition: No
Cross-reference: NA



2.2 UML Diagrams

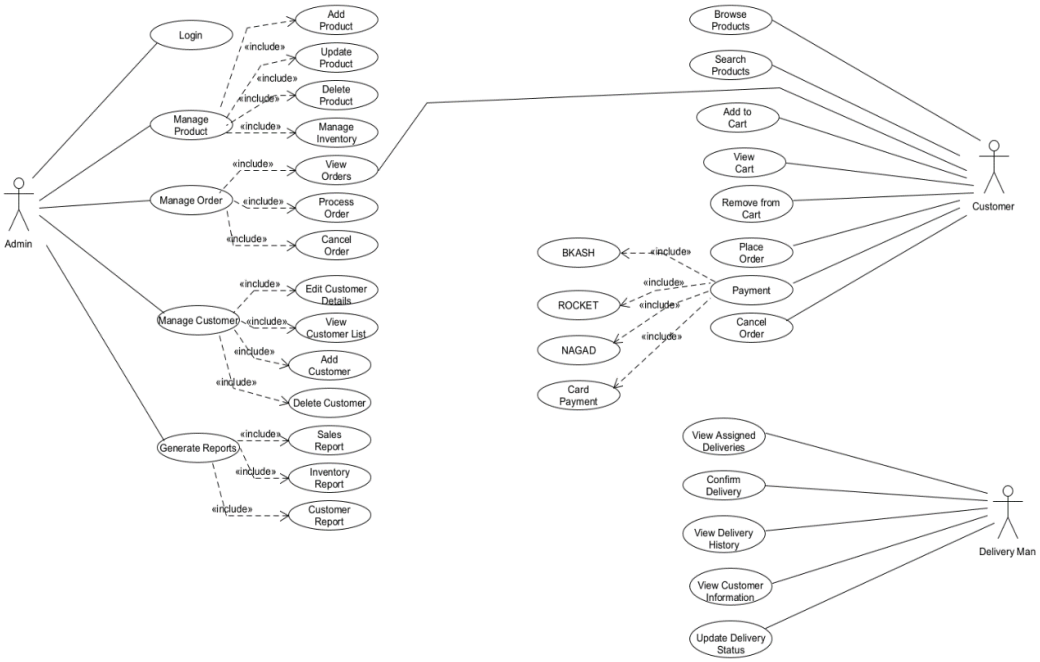


Figure: UML Diagram

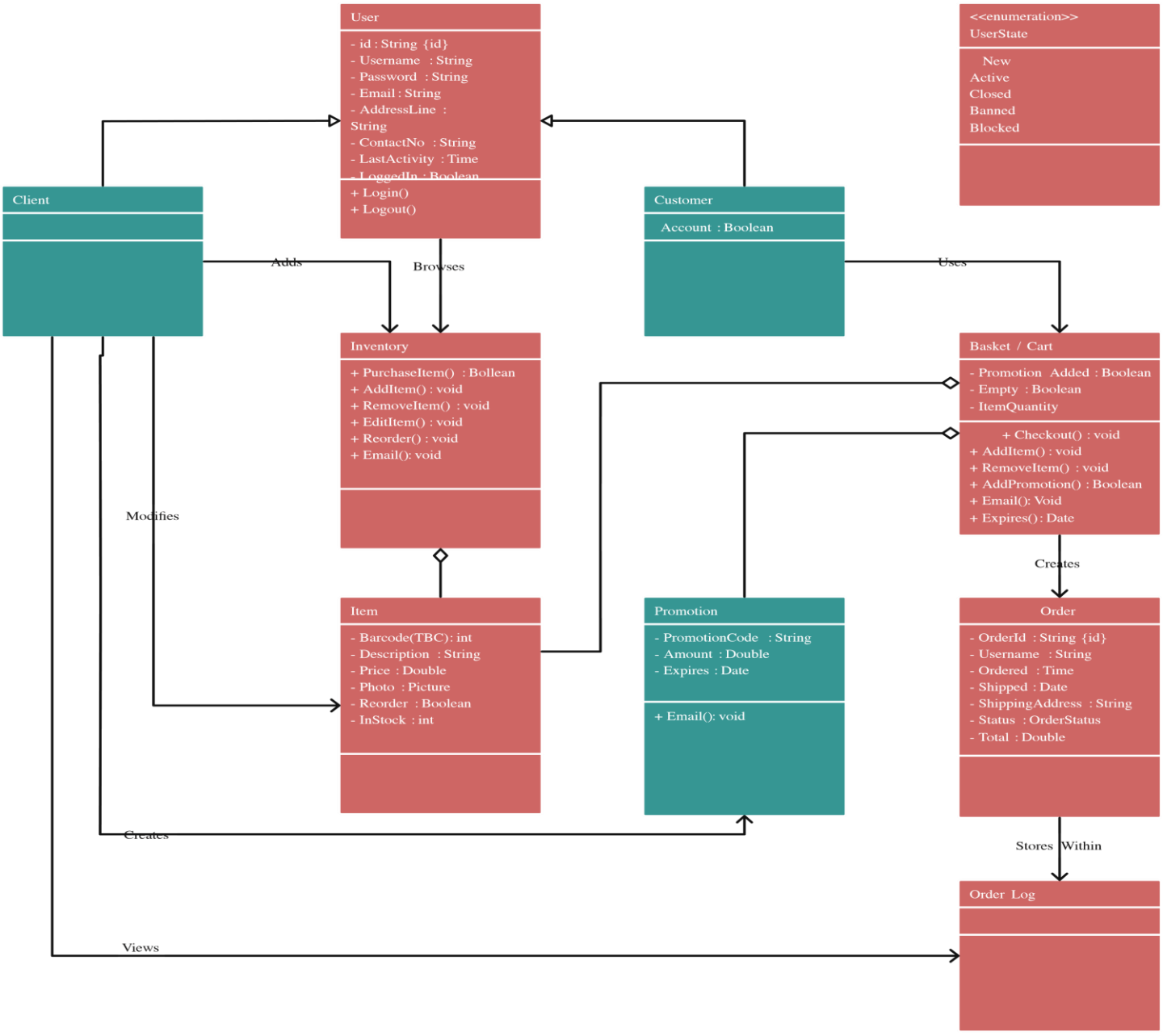


Figure: Class Diagram

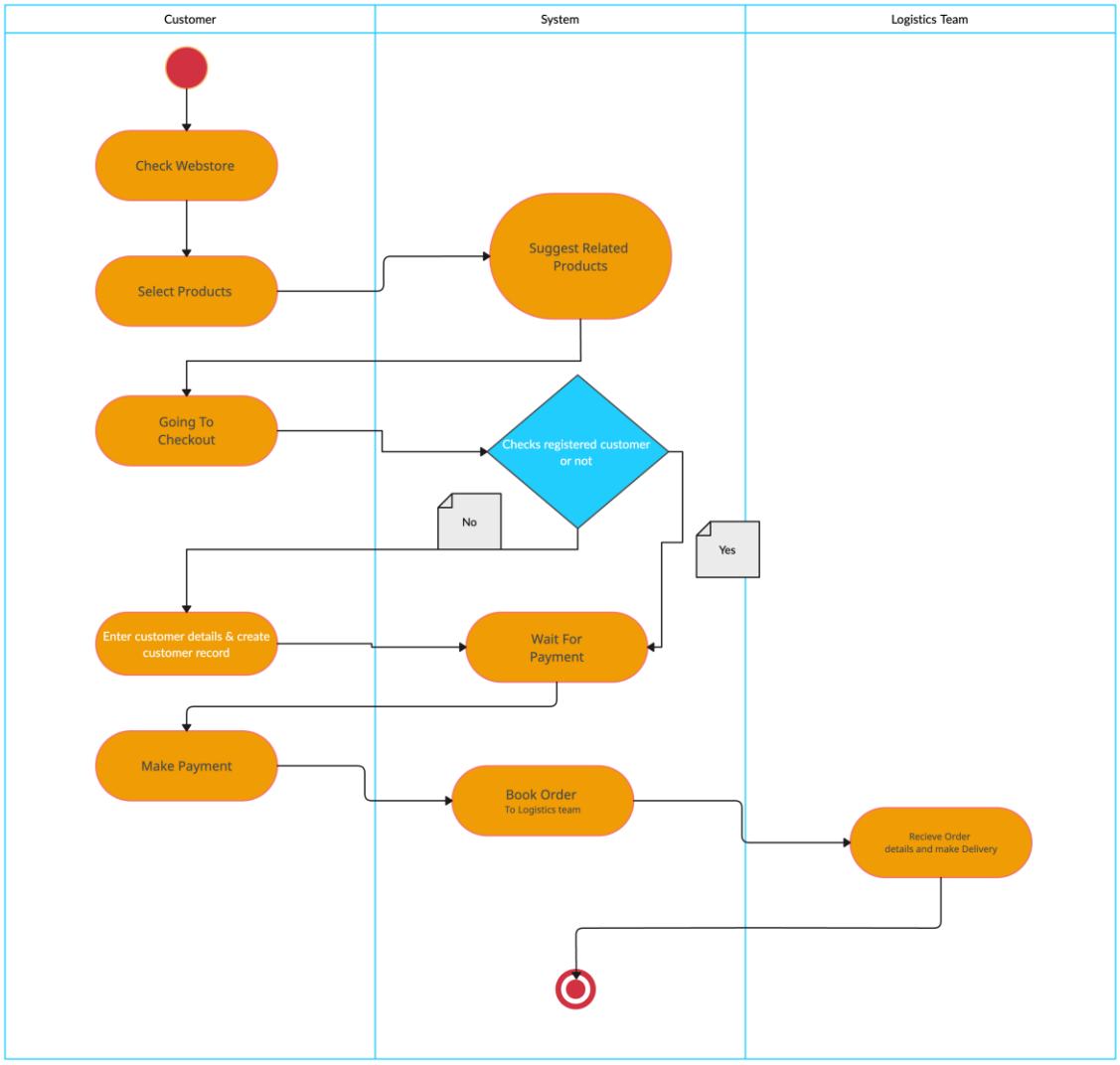


Figure: Activity Diagram

3. Social Impact

Clothing retailers are expanding customer accessibility in the modern day by having an online presence through websites. Many artisans and crafters in Bangladesh, where opportunities are scarce, struggle financially. As fashion brands are using internet platforms, it's showing tremendous social impact.

Lookoid increases the visibility of artisans and improves their economic situation by acting as a digital link between rural artisans and metropolitan consumers. This platform gives local artisans the chance to showcase their talents and provides a lifeline for support through product sales. Improved livelihoods, the protection of cultural assets, and the promotion of grassroots economic growth are all aspects of the cascading impact. Lookoid an indie fashion company, is a prime example of how other companies can encourage good social change by fusing creativity and business, thereby reviving local cultures and traditions.

4. Development Plan with Project Schedule

Projects contain deadlines, spending limits, and specifications that must be met. The project plan is created using project planning. We used the iterative and incremental Scrum agile development methodology. The Core Objective of Scrum: Fulfilling User Requirements through Collaborative Communication, Collective Accountability, and Ongoing Enhancement. At its core, Scrum operates with the principal aim of fulfilling users' requirements through the establishment of an interactive and communicative ecosystem. This is achieved by cultivating an environment characterized by open channels of dialogue, the equitable sharing of responsibilities, and an unceasing commitment. This comprehensive approach serves as a mechanism to systematically and iteratively address users' needs while harnessing the virtues of cross-functional teamwork and perpetual amelioration.

SDLC is an organized procedure facilitating the creation of software with superior quality and cost efficiency, accomplished within the briefest achievable production period. Which includes **Planning, Analysis, Design, Testing, Implementation & Maintenance.**

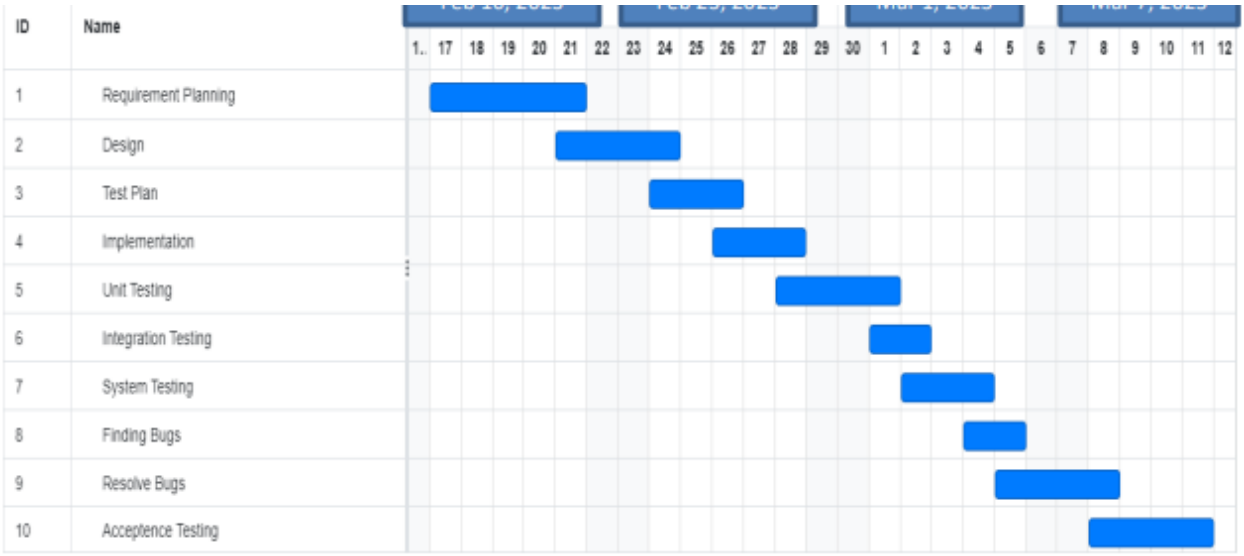
1. **Planning:** In this phase,
   • We as a team discuss the plan or the steps to set our targeted goals.
   • our developers will evaluate the terms of the project.

2. **Analysis:** To ensure project success, a comprehensive analysis of requirements and feasibility needs to be carried out. This entails the gathering and analysis of information about the system's users, as they will be the eventual users of the system. To collect these requirements, questionnaires will be employed to attain a deeper understanding of the system's functioning. This process is anticipated to span approximately one week for completion. Moreover, the necessary and expendable features must be determined, and potential solutions for any challenges that may arise need to be brainstormed. A feasibility analysis must be conducted to ascertain the viability and cost-effectiveness of the desired application. This analysis should precede the commencement of design and development, allowing for necessary adjustments. The outcome will lead to the creation of a more efficient and successful product in the long term. The brainstorming and analysis phase is projected to extend for one to two weeks, ensuring a comprehensive grasp of project requirements before proceeding.

3. **Designing:** The Design phase constitutes a pivotal stage in software development, serving as the architectural blueprint for the operational dynamics of a software application. This phase encompasses several key dimensions, namely:

- **Architecture:** This facet entails a comprehensive specification of elements such as the chosen programming language, industry-adherent practices, overarching design considerations, and the incorporation of templates or boilerplate structures.
- **User Interface:** Within the design domain, the User Interface (UI) assumes prominence by delineating the intricate modalities of customer interaction with the software. It encompasses the software's responsiveness to user inputs.
- **Platforms:** Design encompasses a critical determination of the intended platforms for the software's execution. This includes diverse environments such as Apple and Android ecosystems, varied Windows versions, Linux distributions, and even diverse gaming consoles.
- **Programming:** We used php & scripting for this website. For the testing part we used "Selenium".

4. **Testing:** Time has been allocated within the project plan for the following testing activities. The specific dates and times for each activity are defined in the project plan timeline. The persons required for each process are detailed in the project timeline and plan as well. Coordination of the personnel required for each task, test team, development team, management and customer will be handled by the project manager in conjunction with the development and test team leaders. Schedule must be done using any PM tool.



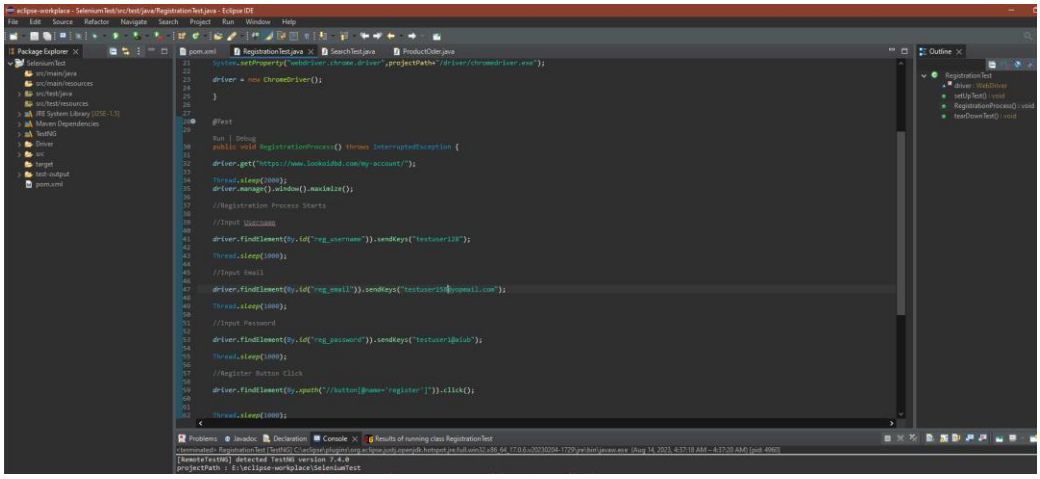


Figure: Eclipse used as for test case built-up.

5. **Implementation:** The deployment stage, an important step in the software development process, signals the shift from development to real end-user use. During this phase, our program will be offered to consumers following extensive pre-launch testing to ensure its ready for usage. This step is critical since it governs our program's operational behavior prior to its public debut, guaranteeing alignment with requirements and anticipated functionality within realistic scenarios. Throughout the process, close supervision will be maintained to ensure that the planned trajectory is followed and that any problems are identified and resolved as soon as possible. Our major goal is to provide an uninterrupted user experience, ensuring complete functioning and user readiness prior to public release.
6. **Maintenance:** The final stage of the project development cycle is the maintenance phase. At this stage, our website is made available to our clients and is ready for live operation. Even though we strive hard to catch any faults and errors during testing, some may remain undetected until the program is utilized. We will provide resources to maintain the development cycle so that our application remains functioning and meets the demands of our users. To ensure that any issues are handled as soon as possible, we can sign a software maintenance agreement with our development team or a third party. This step is critical because it ensures that our application continues to work properly and that it stays relevant and valuable to our users. We can ensure that our application is up to date and that any issues are fixed promptly and efficiently by maintaining the development cycle, resulting in a smooth experience for our users.

Phase	Tasks	Timeline (Week)
1. Planning Phase	Define project scope and objectives	Week 1-2
	Identify stakeholders and their requirements	Week 2-3
	Determine budget and resources	Week 5
	Create project plan	Week 6
	Finalize project plan	Week 6-7

	Review and approve project plan	Week 8
	Conduct a feasibility study	Week 8-10

2. Analysis Phase	Conduct a cost-benefit analysis	Week 10
	Identify potential risks and mitigation strategies	Week 10-11
	Determine technical requirements	Week 11
	Define functional and non-functional requirements	Week 12
3. Design Phase	Create a wireframe	Week 12
	Develop a detailed technical design	Week 12-13
	Create a detailed project plan	Week 13
	Create a database design and schema	Week 13-14

	Finalize design phase	Week 14
	Review and approve design phase	Week 14-15
4. Development Phase	Build the front-end and back-end of the application	Weeks 15-16
	Integrate any necessary third-party services or APIs	Weeks 16-18

	Perform unit testing to ensure each component functions correctly	Weeks 18-19
	Conduct code reviews and make necessary changes	Weeks 18-20
	Finalize development phase	Weeks 20
	Review and approve development phase	Weeks 21
5. Testing Phase	Perform system testing to ensure the application works as expected	Week 22
	Conduct user acceptance testing to ensure the application meets the stakeholders' requirements	Week 23

	Identify and resolve any issues	Week 24
	Finalize testing phase	Weeks 25
	Review and approve testing phase	Weeks
6. Deployment Phase	Deploy the application to the production environment	Week 62
	Monitor the application and resolve any issues	Week 62-63
	Finalize deployment phase	Week 63-64
	Review and approve deployment phase	Week 64-65
7. Marketing Phase	1. Market Research 2. Branding 3. Advertising 4. Content Marketing 5. Public Relations	Week 65-70
8. Maintenance Phase	Provide ongoing support and maintenance for the application	70-88 Weeks
	Address any bugs or issues that arise	
	Conduct regular security and performance audits	

	Make updates and improvements as needed	

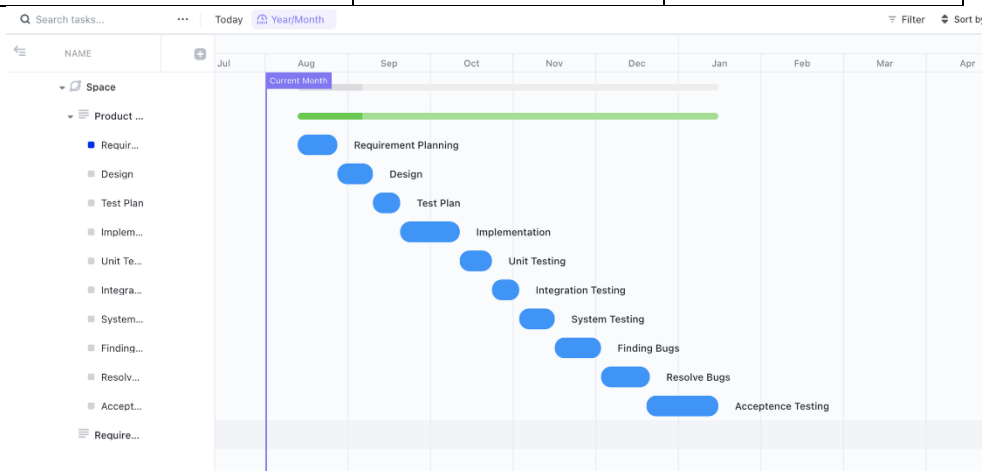


Figure: The total Gantt for Lookoid.

5. Marketing Plan

To achieve sustainable growth and maintain a competitive edge, Lookoid's marketing plan must encompass a well-structured framework that integrates short-term, long-term, and continuous strategies. This holistic approach ensures that the company not only achieves immediate objectives but also secures its long-term viability and adapts to evolving market conditions.

Short-Term Marketing Plan: The short-term marketing plan for Lookoid focuses on immediate goals, typically spanning up to a year. It includes strategies that drive quick results and capture immediate market opportunities. Lookoid can create targeted marketing campaigns aligned with seasonal trends, festivities, and events. These campaigns leverage the consumer mindset during specific periods and drive short-term sales spikes.

1. **Flash Sales and Promotions:** Implementing periodic flash sales, limited-time discounts, and promotional offers can create a sense of urgency among customers, encouraging them to make purchases promptly.
2. **Social Media Engagement:** Aggressive social media engagement through platforms like Instagram, Facebook, and Twitter can facilitate real-time interaction with customers, driving short-term traffic and sales.

Long-Term Marketing Plan: The long-term marketing plan focuses on sustainable growth and building a lasting brand presence over a period of several years. It aims to establish Lookoid as a reputable and enduring fashion brand.

1. **Brand Building:** The long-term plan should emphasize consistent brand messaging, storytelling, and identity development. This involves creating a strong brand image that resonates with the target audience and differentiates the company from competitors.
2. **Customer Loyalty Programs:** Implementing customer loyalty programs, such as reward points and exclusive membership benefits, fosters long-term customer relationships and encourages repeat purchases.
3. **Expansion and Diversification:** It can explore entering new markets, both geographically and demographically, to broaden its customer base. Diversifying product lines and offering new categories can also attract new segments of consumers.
4. **Continuous Marketing Plan:** Plans for continuous marketing entail consistent, ongoing marketing activities. These strategies are crucial for preserving a dominant market position and guaranteeing that the software or system continues to be pertinent to the intended audience. Examples of ongoing marketing initiatives include social media maintenance, content production, and email marketing. These strategies are carried out indefinitely, frequently with periodic evaluations and adjustments to make sure the marketing initiatives continue to be successful.

6. Cost and Profit Analysis

Project constraints are the general limitations of a project, including time, costs and risks. Understanding project constraints is important because they affect project performance.

Constructive Cost Model(CoCoMo)

Time: To finish our project we need 5.5 months.

Cost: To build this project we need approximately 437360 bdt

Resources:

Project Type: Organic

Coefficient < Effect Factor>: 2.4 [P=1.05; T=0.38]

Source Line of Code: SLOC= 4000 Lines

Persons Months, PM = Coefficient < Effect Factor>*(SLOC/1000) ^{P}

=2.4*(3000/1000) $^{1.05}$

= 7.6

Development Time, **DM** = 2.50*(PM)^{T}

= 2.50*(7.6) $^{0.38}$

= 5.4

= 5.5 months

= 5.5*10*8 working hours

= 440 working hours

Required People, **ST** = PM/DM

=7.6/ 5.5

=1.4

=2

Developer Salary in 2 Months:

Developer Salary per Working Hour = 400 bdt

Total Developer Salary = 400*440 BDT

=176000 BDT

Requirements Analysis:

Time needed = 10 days (8 working days)

= 8*8 Working hours

= 64 Working hours

Requirement Analysis Person's Hourly wage= 350 bdt

Total Requirement Analysis Expense = 350*64 bdt

= 22400 bdt

Transportation Cost:

Estimated Cost for transportation=8000 bdt

Training and Hardware Expense:

Estimated Cost for Training and Hardware =40000 bdt

Rent Expenses:

Rent per month= 8000 bdt

Total rent in 2 months = 2*8000 bdt

=16000 bdt

Utilities Cost:

Total utilities bill in 2 months =6000 bdt

Maintenance (Till 6 months after delivery):

Expense per hour = 500 bdt

Total Estimated Time needed for maintenance = 72 hours

Total Estimated maintenance cost =72*500 bdt

=36000 bdt

Miscellaneous:

Total Miscellaneous cost =8000 bdt Total

Estimated Expense:

Total Estimated cost = 176000+ 22400+ 8000+ 40000+ 16000+ 6000+ 36000+ 8000

= 312400 bdt

Profit:

40% of total estimated expense = 312400*40% bdt

=312400+124960

Project Budget: (312400+124960) bdt = 437360 bdt

7. Reference

- https://www.lookoidbd.com
- https://www.selenium.dev/documentation/webdriver/
- Software Requirement Engineering Course slides
- https://www.eclipse.org/