Department of Information and Communication Technology

Jewelry Shop Management System

Project Proposal
Group Project 2024

Project ID: Group 18

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Abstract

In the dynamic world of jewelry retail, efficient management is vital for success therefore Italy Silver Choice located in Nittabuwa established in 2010 by M. F. M. Zazam , recognizes the limitations of manual processes in slowing down operational efficiency despite its success. To stay competitive and address these challenges, need the implementation of a Jewelry Shop Management System integrated with a comprehensive web-based application which helps to achieve internal and external goals. This system aims to address challenges in expanding services and enhance the overall customer experience. The proposed system outlines the management of employees, inventory, user, suppliers and finance. Also the web-based application defines satisfying customer needs and enhance customer experience. The project proposal outlines the system features, and functionalities as well as the project timeline and resource requirements. The proposal also highlights the benefits of using jewelry management system integrated with web application, including increased efficiency, enhanced security, improved customer satisfaction, and the ability to generate detailed reports. As per our perspective, the REACT, spring boot will be used for developing the web-based application and IntelliJ JavaFX, and Scene builder are used to implement the system. As well as the database development done by MYSQL Work bench. Overall the project will be implemented for the customers' satisfaction and enhance user-friendly experience.

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1. Introduction and description of the project

In this fastest world, people they don't have much time to spend within their own works even eating. This being the case, people are unable to waste time in visiting jewelry shops to choose the jewelry of their choice. Therefore, we suggest a web based application which is designed with the aim of providing customers with the facility of using either their mobile phones or laptops or tablets to choose jewelries or request to design their own patterns from their respective places, places they visit, and during break time. The Italy Silver Choice situated in Nittambuwa is planning to provide services to customers those who have interested in gold and silver Jewelries and fantasy items too. And also the shop realized they have faced many issues, causing human mistakes time consuming, in manual processes such as record keeping for accounts, inventory, and customer management. Therefore, we propose a Jewelry Management system for the Italy Silver Choice that can revolutionize their operations by enhancing employee management, inventory control, finance management, supplier management, and customer relationships. The system can reduce work load of the employees because when they use manual processing methods for keeping records of all financial aspects, stakeholder details and inventory managing they can make mistakes, can get tired, can be careless, time-consuming and data can be missed as well. These mistakes can affect overall performance of the business. So, they want to consider about sensitive of the business. To solve these kind of issues and troubles, Italy Silver choice needs to establish a computerized system satisfy their internal and external stakeholders. In that sense, the Jewelry management system and the website are the importance lies in optimizing efficiency, improving customer satisfaction, and maintaining competitiveness in the dynamic jewelry retail market.

1.1.Problem specification

- Currently, Italy Silver Choice Jewelry shop operates with manual procedures, lacking any automated software setup within their establishment. All processes, including inventory management, employee tracking, and customer interactions, are handled manually without the aid of any software systems.

- Existing manual jewelry management processes are inefficient and time-consuming a management system often involves paperwork, manual recording, and so on repetitive tasks lead to inefficiency and consume considerable amounts time, delays and difficulties for both customers and employees.

- Human errors and data inaccuracies can often happen and manual data entry increases the likelihood of human errors, such as incorrect jewelry details, order information, billing discrepancies, incorrect calculations or misplacing documents, leading to customer dissatisfaction and administrative challenges.

- In the inventory management, according to the existing manual processes, they always want to check the level of the stock either it is sufficient or insufficient.

- Maintaining the bulk paper records for each and every transactions, inventories, employee and customer details that make the storage issues. Cannot be able to search and get the details of something quickly.

- Manual records are susceptible to loss, theft, or damage. Without proper security measures in place, sensitive customer information, inventory details, and financial records may be compromised, leading to privacy concerns and potential legal issues.

- Manual record-keeping makes in Jewelry shop it difficult to analyze trends, track performance metrics, and generate comprehensive reports. Lack of real-time data insights hinders informed decision-making and strategic planning for the business.

- In Italy silver choice, inaccurate or incomplete record-keeping practices may result in non-compliance with industry regulations and tax requirements. Failure to adhere to legal standards can expose the business to fines, penalties, and potential legal liabilities.

- Inefficient manual processes can hinder the shop's ability to compete effectively in the market. Competitors utilizing automated jewelry management systems may offer superior customer experiences, faster service, and better inventory control, thereby gaining a competitive edge.

- Addressing customer inquiries, complaints, and requests for customization or special orders in a timely and satisfactory manner.

- According to the current jewelry shop processes, customers need to come to the shop and choose they desires. So, it can be made uncomfortable for customers. Therefore, the web application can solve the issue by providing services for customers in their respective places, place they visit, home and leisure time as well.

- Without a web-based application, customers are limited to accessing the jewelry shop's offerings and services only when they visit the physical store. This restricts access for customers who may prefer to browse and purchase jewelry online or who are unable to visit the store in person due to various reasons such as distance, mobility issues, or time constraints.

- In today's digital age, customers expect businesses to offer online platforms for seamless shopping experiences. Without a web-based application, the jewelry shop may lag behind competitors who leverage e-commerce solutions to reach and engage customers effectively.

- Manual processes require customers to physically visit the store to browse, select, and purchase jewelry items. This lack of convenience can deter potential customers who prefer the flexibility of online shopping or who seek to explore options at their own pace and convenience.

- By relying solely on in-store transactions, the jewelry shop may miss out on potential sales opportunities from customers who prefer online shopping channels. A web-based application can attract a wider customer base and facilitate sales transactions beyond the shop's physical location.

- Without a web-based platform, customers may have limited access to detailed product information, such as specifications, materials, pricing, and availability. Providing comprehensive product details online enhances transparency and allows customers to make informed purchasing decisions.

- Without online ordering capabilities, customers may need to place orders manually in person or via phone, leading to potential delays, order errors, and inefficient order fulfillment processes. A web-based application streamlines the ordering process, automates order management, and improves overall customer satisfaction.

1.2. Solution outline

According to the above problem specifications and client requirements, we plan to implement a web based application and Jewelry management system to provide services to both internal and external stakeholders that will be the solutions for above problems.

Inventory Management and Employee Tracking:

- Implement an integrated jewelry management system that automates inventory tracking, employee management, and customer interactions.

Data Accuracy and Security:

- Centralize data storage and implement encryption protocols to secure sensitive customer information, inventory details, and financial records.
- Regularly back up data to prevent loss and facilitate data recovery in case of emergencies.

Real-Time Reporting and Analysis:

- Implement reporting and analytics features within the jewelry management system to track performance metrics, analyze trends, and generate comprehensive reports.
- Utilize dashboards and data visualization tools to provide real-time insights into inventory levels, sales trends, and customer preferences.

Regulatory Compliance:

- Ensure that the jewelry management system complies with industry regulations and tax requirements, including data protection laws and financial reporting standards.
- Implement features for tax calculation, invoicing, and compliance reporting to simplify regulatory compliance processes.

Competitive Advantage and Customer Experience:

- Develop a user-friendly web-based application that allows customers to browse, select, and purchase jewelry online from the comfort of their homes.
- Provide detailed product information, images, and reviews to help customers make informed purchasing decisions.
- Implement features for online ordering, payment processing, and order tracking to enhance convenience and satisfaction for customers.

Customer Engagement and Satisfaction:

- Implement customer relationship management (CRM) features within the jewelry management system to track customer inquiries, complaints, and special orders.
- Provide personalized recommendations, and promotions to enhance customer engagement and loyalty.
- Offer multiple channels for customer support, including live chat, email, and phone support, to address customer inquiries in a timely and satisfactory manner.

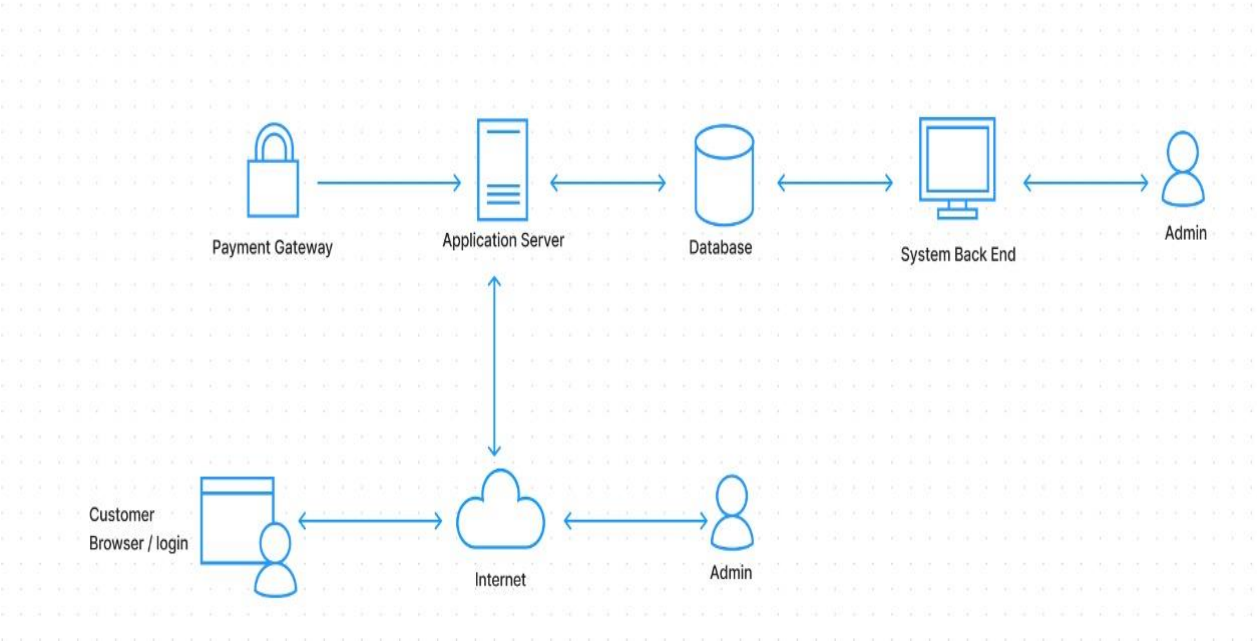


Figure 1: Architecture Diagram

1.3.Key Benefits

Technological Advantages:

- User-Friendly Interface: JavaFX and Scene Builder facilitate the creation of an intuitive and visually appealing user interface, enhancing usability and engagement.
- Cross-Platform Compatibility: JavaFX applications operate seamlessly across various operating systems, ensuring widespread accessibility and flexibility for users.
- Integration with Backend Systems: JavaFX seamlessly integrates with Spring Boot backend services, enabling efficient data synchronization and communication between frontend and backend components.
- Dynamic User Experience: React enables the development of dynamic and interactive user interfaces, enriching the shopping experience with real-time updates and responsive design elements.
- Fast Performance: Spring Boot, in conjunction with React, ensures rapid data retrieval and transaction processing, resulting in swift loading times and smooth user interactions.
- Scalability and Flexibility: Spring Boot's modular architecture facilitates scalability, enabling the system to accommodate growing user demands and adapt to changing business requirements.
- Enhanced Accessibility: Responsive design principles ensure optimal user experiences across diverse devices, enhancing accessibility and convenience for users.

Operational Advantages:

- Streamlined Operations: Automated inventory, customer, employee, supply, and financial management processes streamline operations, reducing manual errors and improving efficiency.
- Informed Decision-Making: Real-time data insights empower timely and informed decision -making, supporting strategic planning and resource allocation.
- Improved Customer Service: Centralized customer information and swift response times enhance customer satisfaction, fostering loyalty and repeat business.
- Increased Productivity: Automated workflows and efficient access to information boost employee productivity, optimizing resource utilization and operational performance.
- Cost Savings: Reduced labor costs, optimized inventory management, and increased efficiency contribute to overall cost savings and improved profitability.
- Business Growth: Scalability and adaptability support business expansion into new markets and opportunities, driving growth and competitiveness.

- Data Security and Compliance: Robust security measures safeguard sensitive data and ensure compliance with regulatory requirements, fostering trust and credibility among customers and stakeholders.

2. Aims and Objectives

Aim:

To develop a comprehensive jewelry shop management system that integrates e-commerce functionality for customers and efficient management tools for inventory, customer relations, employee management, supplier interactions, and finance tracking.

Objectives:

E-commerce Website Development:

- Design and develop an intuitive and secure e-commerce website that showcases the jewelry products effectively.
- Implement a user-friendly interface for browsing products, adding items to cart, and completing transactions securely.
- Ensure seamless integration with payment gateways to facilitate secure online transactions.

Inventory Management:

- Develop a system to track inventory levels, including stock quantities, variations, and updates in real-time.
- Implement features for automated stock alerts and reordering to prevent stockpots.
- Enable barcode scanning or RFID technology for efficient inventory tracking and management.

Customer Management:

- Create a database to store customer information, including contact details, purchase history, and preferences.
- Develop tools for analyzing customer data to personalize marketing efforts and improve customer retention.
- Implement features for customer feedback collection and response management to enhance customer satisfaction.

Employee Management:

- Develop a system for employee scheduling, task assignment, and performance tracking.
- Implement user roles and permissions to ensure data security and restrict access to sensitive information.
- Provide training modules and resources within the system to facilitate employee onboarding and skill development.

Supplier Management:

- Establish a database to store supplier information, including contact details, product catalogs, and pricing agreements.
- Develop tools for managing supplier relationships, including order placement, tracking, and invoice processing.
- Implement features for evaluating supplier performance and negotiating contracts to optimize procurement processes.

Finance Management:

- Develop a system for tracking financial transactions, including sales, expenses, and revenue.
- Implement features for generating financial reports, such as profit and loss statements, balance sheets, and cash flow projections.
- Integrate with accounting software or services for streamlined financial management and compliance with tax regulations.

3. Procedures

For our group project focused on "Italy Silver Choice" jewelry, we have chosen to implement agile methodology to guide our project development process. Agile methodology is a modern and flexible approach to managing projects, emphasizing collaboration, adaptability, and incremental progress. By dividing our project into planning, development, and implementation phases, we aim to ensure efficient workflow and responsiveness to changes throughout the project's timeline.

This approach enables us to deliver a high-quality jewelry concept that meets the needs and preferences of our target audience while maximizing our team's productivity and effectiveness. In the subsequent sections, we outline the procedures and timeline for each phase of the project, detailing our strategy for successful completion within the designated timeframe.

3.1.Flow of the project

3.1.1 Planning Phase:

- Sprint Planning

1. **Establish a secure E-commerce platform with integrated systems, focusing on centralized data management and user-friendly experiences.**

Web-based application

- Secure SSL-certified platform.
- Integration of secure payment methods.

i. Products

- Dynamic product management (add, edit, delete).
- Categorization and filtering.

ii. Users

- Seamless registration and login.
- Profile editing options.
- View orders, wish list, and cart.
- Multiple payment options.
- Two-step authentication.
- Live chat support.

System Requirements

- User-friendly log-in and registration.
- Automated alerts for customer orders.

i. Inventory Management

- Admin-controlled product management.
- Stock monitoring with low stock alerts.
- Efficient handling of sales and returns.

ii. Employee Management

- Record-keeping with attendance and salary details.
- Flexible salary payment options.
- Tax deductions and compliance filing.
- Employee leave monitoring with performance reports.

iii. User Management

- Centralized management of user details, orders, and payments.
- Detailed overview of wish list and cart.
- Comprehensive payment reports.
- Automated email receipts.

iv. Supply management

- Record keeping of suppliers
- Manage purchase orders and deliveries
- Record payment details

v. Finance management

- Record expenses (rent, utilities, wages, etc.).
- Manage accounts receivable and payable.
- Generate financial reports (profit and loss, balance sheet, cash flow).
- Representing incomes and profits as a graph

2. Objective

To create a robust E-commerce platform for "Italy Silver Choice" jewelry that enhances user experience, ensures data security, and streamlines business operations.

3. Deliverables

- We aim to develop and launch a secure E-commerce website for "Italy Silver Choice" jewelry, integrated payment methods such as credit cards, and other secure options will facilitate seamless and secure transactions.
- Additionally, dynamic product management functionalities will be created, allowing administrators to easily add, edit, and delete products while providing categorization and advanced filtering options for users.
- Our platform will enable seamless registration and login processes, with options for profile editing, viewing orders, wish list, and cart, along with offering multiple payment options including two-step authentication for enhanced security.

3.1.2. Development Phase

- Iterative Development involves working on backlog items based on priority and sprint goals in a cyclical manner.

- This process entails breaking down the project into smaller tasks or user stories, prioritizing them based on their importance and value to the project, and then focusing on completing those tasks within a set timeframe called a sprint.

- During each sprint, the team collaborates to develop, test, and review the functionality of the backlog items, ensuring that they align with the project objectives and meet the stakeholders' requirements.

- By iterating through these cycles, the project gradually evolves, allowing for continuous improvement, adaptation to changes, and incremental delivery of features or functionalities.

3.1.3. Implementation Phase

During the User Acceptance Testing (UAT) phase, stakeholders are actively engaged in testing the developed features of the project. This process involves two key steps,

- **Involving stakeholders in testing**
  I. Stakeholders, including end-users, clients, and other relevant parties, participate in testing the functionalities and features of the project.
  II. They interact with the system as intended users would, exploring different aspects of its functionality to ensure it meets their needs and expectations.

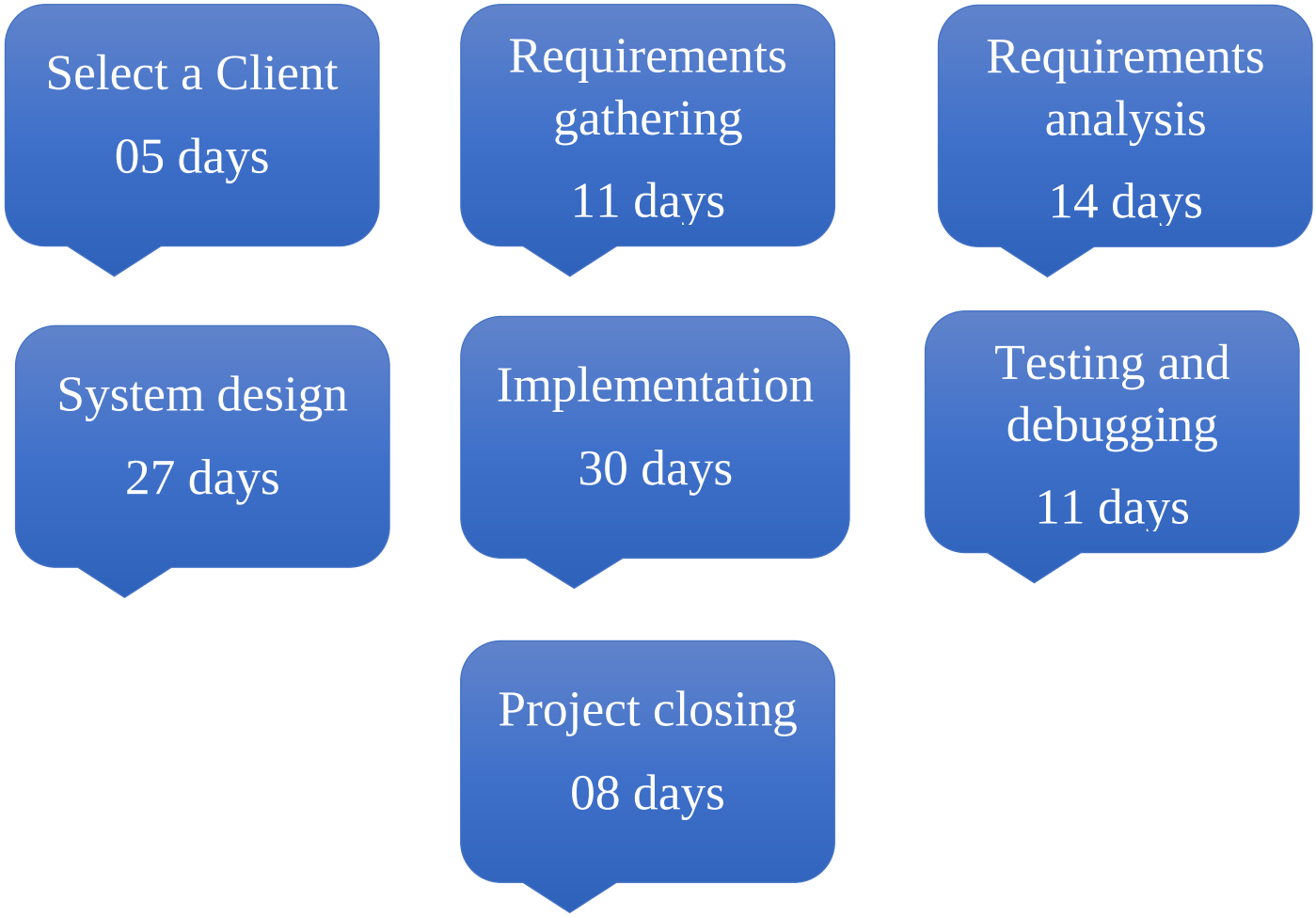
- **Gathering feedback and issue resolution**
  I. Feedback gathered during the testing phase is carefully analyzed and addressed. Any identified issues, concerns, or discrepancies are documented, prioritized, and resolved by the development team.

  II. This iterative process ensures that the project meets the required quality standards and aligns with stakeholders' expectations before final deployment.

3.2. Project plan

We're starting a project to make a jewelry website for "Italy Silver Choice." We're using the agile method to help us. Agile is good because it's flexible, adaptable, and works in steps. Our project will take 112 days. We want to use Agile to manage our time and resources well, focus on important tasks, and make a great product that everyone likes. This plan is about working together, making changes when needed, and finishing our project on time.

You can see here the total days of functional categories which we are going to use in our project. .



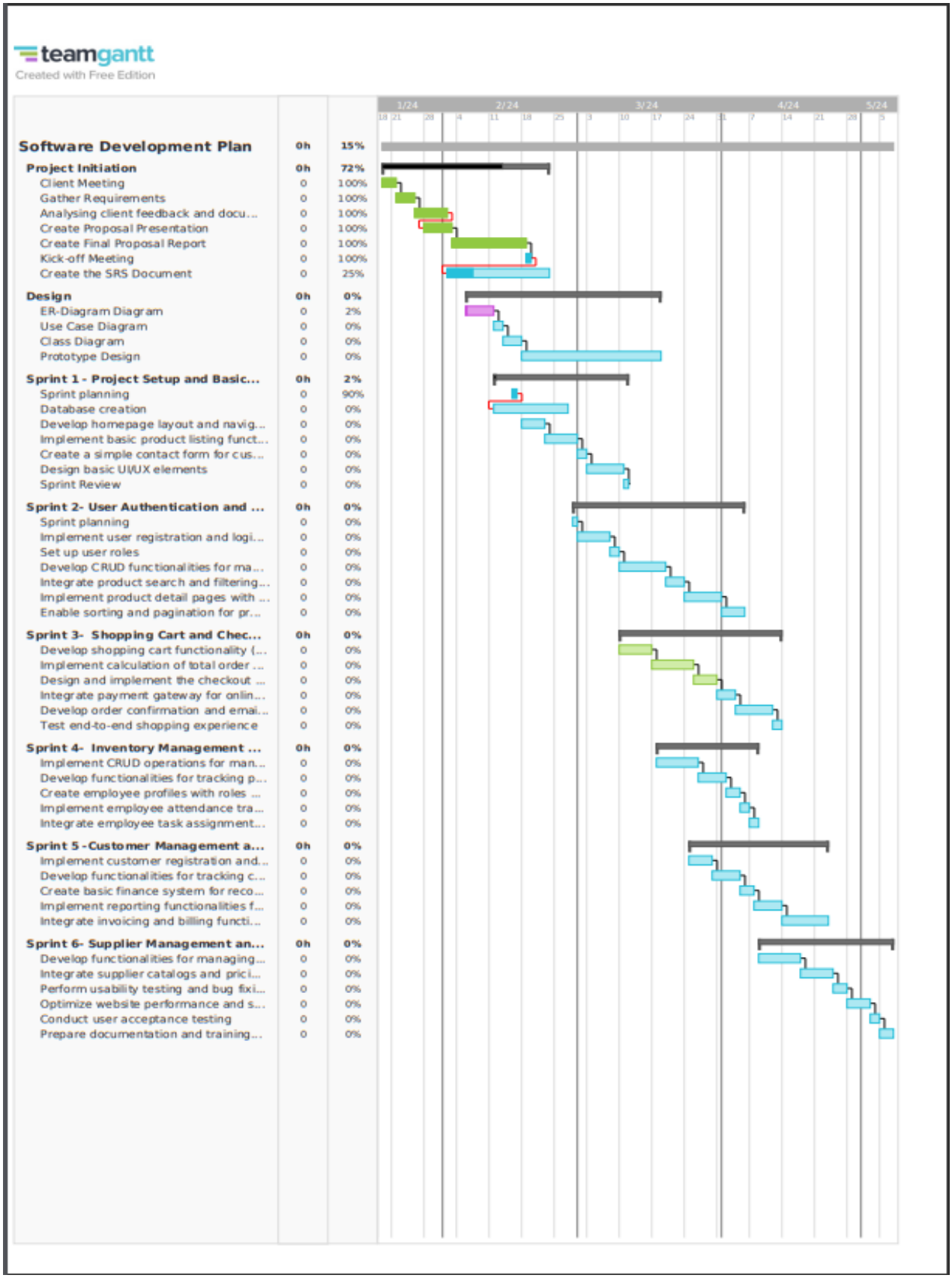


Figure 2: Gantt chart

4. Team members and roles:

Name of the team member	Role	Key responsibilities	Description
M.I.A. Asfaque TG/2020/744	Frontend and backend Developer for website	Homepage developing	• Navigation bar has following options ✓ Home ✓ Jewelry ✓ Promotion ✓ Contact us ✓ About us ✓ Search bar ✓ User ✓ Add to cart • Users can search the jewelries using search bar • Promotion should be provide details about the offers that provide by shop and advertisements.
		Cart managing	• Users can add their choices to the cart. • Shows alerts when users try to add items to the cart without login to the website. • Modify quantities of the items, remove items, and apply discount if applicable.
		Contact management	Form • User can fill and submit the form if they have any additional details. Suggestions, requests and compliance. • Using the form user can submit return requests as well. Chat box

			• Users can contact with the shop using chat Box by FAQ. • Create review section for getting feedback from customers.
M.Z.M. Akthar TG/2020/710	Frontend and backend Developer for website	Order managing	• Users can register and login to the website for getting seamless services from Italy silver choice. • User can manage their account such as profile. • Managing products in website. • User can select the items by using filtering options ✓ Product categories ✓ Product type ✓ Gold standards ✓ Price • User can make order requests • Show alerts to users when the item is out of stock • User can view ordered list, and wish list
		Payment processing	• After clicking the checkout, allow customers to enter their billing information(name, email and address) • Provide option for payment method such as credit/debit card, or other payment methods. • Display a summary of the order, including item purchased, quantities, price, and total amount due. • After payment, display a confirmation message with a

			unique order ID for customer records. • Users can know about shop using about us option
T. Madhusha TG/2020/704	Database developer	Responsible for developing database applications	• Writing and optimizing SQL queries, creating stored procedures, triggers, and functions to ensure efficient data access and manipulation.
	Frontend and backend Developer for System	Employee management	• CRUD operations for employee profiles • Getting attendance of the employees • Salary calculations for employees with EPF • Manage employee leave. • Generate report of attendance, salary and performance of the employee and Send confirmation emails to employees after the salary paid
		Inventory management	• Add/update/delete products (jewelry items). • Track inventory levels (quantity) • Set alerts for low stock levels. • Categorize products (e.g., rings, necklaces, bracelets). • Track product movements (purchases, sales, returns). • Generate inventory reports (e.g., stock valuation, slow-moving items. • Getting notifications for customers' orders.

		Finance management	• Generate financial reports (profit and loss, balance sheet, cash flow). • Representing incomes and profits as a graph.
H. T. Dinuki TG/2020/747	Database Administrator	Responsible for designing	• Designing, implementing, and maintaining the database infrastructure that involves tasks such as schema design, data modeling, indexing, optimization, and ensuring data integrity and security.
	Frontend and backend Developer for System	Customer management	• Create/update/delete direct Customer profiles. • Record customer preferences (style, metal, gemstone preference, etc.). • View customer purchases and history. • Send personalized offers or promotions. • Send order confirmation emails through the system. • Generate invoices or payment receipts
		Finance managing	• Record expenses (rent, utilities, wages, etc.). • Manage accounts receivable and payable.
		Supply managing	• Record supplier details. • Manage purchase orders and deliveries • Record payment details

5. Hardware and software requirements

5.1 Hardware Requirements:

1. Dual-core servers with a minimum of 8GB RAM: These servers will host the project's infrastructure, including databases, application servers, and other necessary components. The dual-core CPUs guarantee enough processing power, while the 8GB RAM offers enough capacity to manage data effectively and handle multiple processes at once.
2. Client machines with a dual-core processor and 4GB RAM: These client machines will be used by developers and other project stakeholders for accessing development environments, IDEs, and other tools. The dual-core processors ensure smooth performance during software development tasks, while 4GB RAM provides enough memory for running development tools and testing applications.

5.2 Software Requirements:

1. Operating System (OS): The project supports both Linux and Windows operating systems. Developers can choose their preferred OS based on their familiarity and requirements. Linux offers flexibility, security, and compatibility with open-source tools, while Windows provides a familiar environment for developers using Microsoft technologies.
2. Database Management System (DBMS): The project is compatible with both MySQL and PostgreSQL, offering flexibility in database selection. MySQL is known for its performance, ease of use, and scalability, while PostgreSQL offers advanced features like ACID compliance, extensibility, and support for complex data types.
3. IDE and Development Tools: Developers will utilize IntelliJ IDEA as the primary IDE for writing, debugging, and testing code. IntelliJ offers a rich set of features for Java development, including code analysis, version control integration, and support for various frameworks and technologies. Additionally, developers will use other development tools as per project requirements, such as version control systems (e.g., Git), and testing frameworks (e.g., JUnit).

Expected Client Contribution:

- Procure and provision the required hardware components, including dual-core servers and client machines with specified RAM capacities.
- Install and configure the selected operating system (Linux/Windows) on the servers and client machines.
- Set up and maintain the chosen database management system (MySQL/PostgreSQL) on the designated servers.

- Acquire licenses or subscriptions for IntelliJ IDEA and any other development tools necessary for the project.

Collaborate with the development team to ensure seamless integration of hardware and software components and provide necessary support throughout the project lifecycle.

6. Budget

Description	Quantity	Price(Rs.)
PC	1	150,000.00
Printer	1	25,750.00
Website Hosting (per month) with SSL Certificate	-	1,727.12
	Total	**177,477.12**

Figure 3: Budget

7. Risk assessment

Data Security and Privacy:

- Risk: Mishandling of sensitive information could lead to data breaches, resulting in legal consequences and loss of trust from customers.
- Mitigation Strategy: Implement robust data encryption protocols, access controls, and regular security audits to safeguard sensitive information. Ensure compliance with relevant data protection regulations such as GDPR or CCPA.

Integration Complexity:

- Risk: Integrating multiple modules and functionalities within the system may lead to technical challenges, delays, and potential compatibility issues.
- Mitigation Strategy: Conduct thorough compatibility tests and establish clear integration protocols. Utilize standardized APIs and middleware solutions to facilitate seamless communication between different system components.

User Adoption and Training:

- Risk: Resistance to change and lack of user training may hinder stakeholders' adoption of the new system, leading to underutilization and decreased productivity.

- Mitigation Strategy: Develop comprehensive user training programs and provide ongoing support and guidance during the transition period. Solicit feedback from users to address any usability issues and refine the system accordingly.

Technological Challenges:

- Risk: Rapid technological advancements and evolving industry standards may render the existing system obsolete or incompatible with future requirements.
- Mitigation Strategy: Stay abreast of emerging technologies and regularly update the system architecture to incorporate new features and functionalities. Foster a culture of innovation and continuous improvement within the development team.

Customers Experience and Feedback:

- Risk: Failing to meet customer expectations for seamless online shopping experiences and responsive customer support may result in reduced customer satisfaction and loss of business.
- Mitigation Strategy: Implement mechanisms for gathering customer feedback and conduct regular assessments of the user experience. Leverage customer insights to prioritize feature enhancements and address pain points effectively.

Cost Management:

- Risk: Exceeding the allocated budget for development, implementation, and maintenance could strain financial resources and jeopardize project viability.
- Mitigation Strategy: Conduct thorough cost-benefit analyses and establish a realistic budget that accounts for contingencies. Monitor project expenses closely and prioritize cost-saving measures without compromising on quality or functionality.

8. Communication and reporting

8.1. Communication within the Team:

- Diverse Channels: Team members will utilize diverse communication channels such as team meetings, messaging platforms (e.g. Microsoft Teams), and email to foster openness and facilitate effective collaboration.
- Centralized Task Management: Tasks will be managed using collaborative platforms like Google Drive or Microsoft Teams, ensuring all team members have access to project-related documents, schedules, and updates.
- Regular Meetings: Scheduled team meetings will provide opportunities for in-depth discussions, progress updates, and issue resolution. These meetings will ensure alignment on project goals and foster a sense of shared responsibility.

- Structured Feedback Loop: A structured feedback loop will be established to encourage continuous improvement. Team members will be encouraged to provide constructive feedback and suggestions for enhancing collaboration and productivity.

8.2. Communication with the Client:

- Clarity and Regular Updates: Client communication will emphasize clarity and regular updates to ensure transparency and maintain trust. Regular progress updates will be provided, highlighting milestones achieved, tasks completed, and any deviations from the project plan.
- Swift Responses: Communication protocols will be established to ensure swift responses to client inquiries and requests. A designated point of contact will be responsible for managing client communications and facilitating timely responses.
- Decision Tracking: Decision tracking mechanisms will be implemented to document client decisions and ensure alignment with project objectives. Any changes or adjustments to project requirements will be communicated promptly, along with their implications on project timelines and deliverables.
- Customized Client Reports: Customized client reports with visualizations of project progress, metrics, and key performance indicators (KPIs) will be provided at regular intervals. These reports will enable clients to track project milestones, monitor performance against predefined metrics, and make informed decisions.
- Transparent Risk Communication: Risks and challenges will be communicated transparently to the client, along with proposed mitigation strategies and contingency plans. Clients will be actively involved in risk assessment and decision-making processes, ensuring a collaborative approach to risk management.

8.3. Reporting Mechanisms for Project Progress:

- Regular Progress Reports: Weekly or bi-weekly project progress reports will be shared with the client, outlining achievements, milestones reached, and any deviations from the project plan. These reports will include metrics, KPIs, and visual representations of progress.
- Issue Tracking: An issue tracking system will be implemented to log and categorize project issues by severity. Regular updates on issue resolution progress will be provided to the client, ensuring transparency and accountability.
- Milestone-Specific Reports: Milestone-specific reports will be generated to celebrate achievements and provide clients with a comprehensive overview of project progress at key stages.

- Client Feedback Loop: A structured client feedback loop will be established to gather input on project progress, satisfaction levels, and areas for improvement. Client feedback will be incorporated into project planning and execution, driving continuous improvement and ensuring alignment with client expectations.

9. Testing and Quality assurance

- Unit Testing: Individual components and modules of the Jewelry Management System will undergo unit testing to verify their functionality in isolation. This ensures that each component performs as expected and meets specified requirements.
- Integration Testing: Once individual components have been tested, integration testing will be conducted to validate the interactions between different modules. This ensures that the system functions seamlessly as a whole and that data flows correctly between components.
- System Testing: The entire Jewelry Management System will undergo comprehensive system testing to validate its overall functionality, usability, and performance. This testing phase simulates real-world usage scenarios to identify any defects or inconsistencies in the system.
- User Acceptance Testing (UAT): UAT involves end-users testing the system in a real-world environment to ensure that it meets their requirements and expectations. This phase allows stakeholders to provide feedback and identify any usability issues or discrepancies that need to be addressed before deployment.
- Performance Testing: Performance testing will be conducted to assess the system's responsiveness, scalability, and stability under varying load conditions. This ensures that the system can handle the expected volume of transactions and users without experiencing performance degradation.
- Security Testing: Security testing will be performed to identify and address potential vulnerabilities and weaknesses in the system. This includes testing for authentication, authorization, data encryption, and protection against common security threats such as SQL injection and cross-site scripting (XSS).
- Regression Testing: Regression testing ensures that recent code changes or enhancements do not introduce new defects or regressions into the system. It involves retesting previously validated functionalities to ensure that they still work as intended after modifications.

9.1. Importance of Ensuring Robustness and Reliability:

- Customer Satisfaction: A reliable system that performs as expected and meets user requirements enhances customer satisfaction. It reduces the likelihood of downtime, data loss, or errors, leading to a positive user experience.
- Business Continuity: A robust system minimizes the risk of disruptions to business operations due to software failures or defects. This ensures uninterrupted service delivery and maintains customer trust and confidence.
- Data Integrity and Security: A reliable system protects sensitive data and ensures its integrity through robust security measures. This safeguards against data breaches, unauthorized access, and potential legal and financial repercussions.
- Cost-Efficiency: Identifying and addressing defects early in the development process through rigorous testing helps minimize rework and maintenance costs. It prevents costly issues from arising post-deployment, saving time and resources in the long run.
- Competitive Advantage: A reliable and robust Jewelry Management System can give businesses a competitive edge by enabling them to deliver superior products and services. It enhances brand reputation and positions the business as a trusted provider in the market.

10. References

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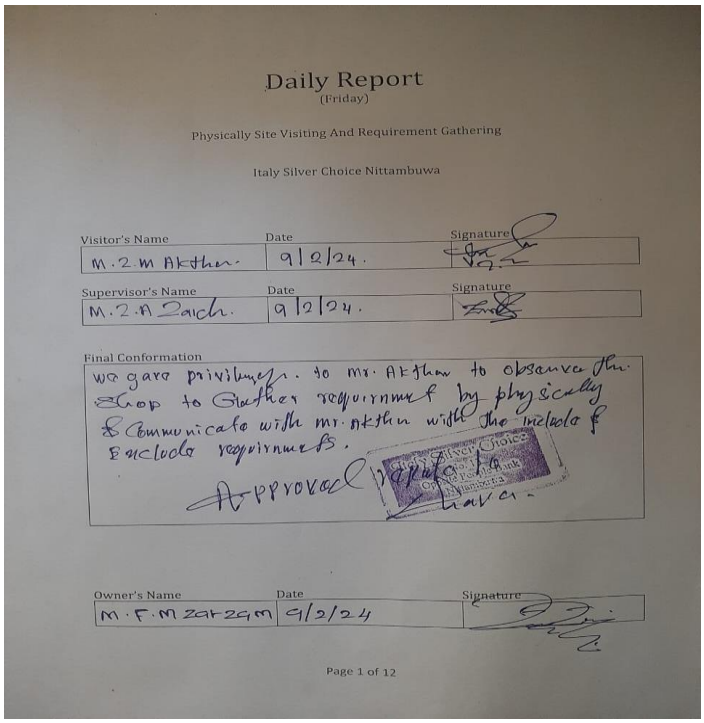
11. Appendices



Daily Report
(Friday)

Physically Site Visiting And Requirement Gathering

Italy Silver Choice Nittambuwa

Visitor's Name	Date	Signature
M.Z.M Akther.	9/2/24.	

Supervisor's Name	Date	Signature
M.Z.M Zaich.	9/2/24.	

Final Conformation

We gave privilages. to Mr. Akthar to observe the Shop to Gather requirment by physically & Communicate with Mr. Akthar with the inclode of Exclode requirments.

Approved

Owner's Name	Date	Signature
M.F.M Zahzam	9/2/24	

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Figure 4: Report of the shop