E-COMMERCE WEBSITE PROJECT PLAN

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1. Introduction

The project involves the design and implementation of an online shopping (e-commerce) website that has an automated payment system. Users will be able to browse, compare and select products, and pay using the provided payment options.

This project simulates a full-cycle e-commerce website plan, including the deployment of an entire backend system with multi-user registration, login functionalities, a payment gateway, and order fulfilment services. E-commerce systems have significantly improved business reach and most importantly the customer convenience.

My solution is aimed at ensuring that these services are available with higher scale and are well-protected from any unauthorized access.

2. Project Scope

The objective is to develop a safe and user-friendly e-commerce website. The user must be able to register, authenticate, browse products, place orders, and execute transactions i.e. debit/credit card, etc. This system will have both the customer and the admin interfaces.

3. Project Stakeholders

Stakeholder Role	**Internal/External**	**Position**
Project Sponsor (Client)	External	Business Owner
Admin (Client)	External	Admin Staff/Operations Manager
Project Manager	Internal	PMO Director
Development Team	Internal	Designers, Developers, Testers
End Users (Shoppers)	External	Online Customers
Third-Party Service Providers	External	Payment Gateway, Hosting Providers

4. Project Requirements

Included

Functional Requirements

- User Registration & Authentication: Secure user registration, login, and profile management. Using email and password. This will must password encryption and password recovery options.
- Product Browsing: Categorized display, search filters, and responsive layout for different devices. This includes product images, descriptions, prices and inventory status.
- Shopping Cart & Checkout: Real-time cart updates with quantity controls and total pricing. Users must be able to add and remove items. Have a checkout with clear order summaries.
- Payment Integration: Integration with a secure, compliant payment provider. This ensures real-time transactions using debit/credit cards and EFTs.
- Order Management: Seamless checkout and auto-generated invoices, order history for users and a system to manage order status (Pending, Confirmed, Cancelled).
- Admin Interface: inventory Management, categories, orders, and user queries. Ability to add, remove and update products, images, price and description.

Non-Functional Requirements

- Security: Implement SSL encryption, secure payments, and authorization-based access.
- Usability: Simple interface across devices (responsive design). Clear and easy navigation.
- Performance: Fast page load time, database query optimization.
- Availability: Uptime of 99% or more, cloud hosting.
- Scalability: Ability to add new categories or payment methods in future.

Excluded

- Multi-vendor Marketplace Features: The system must be built for a single-store model only, must not allow other sellers to register or upload their own products.
- Mobile App Version: No native mobile application will be developed. The website will be mobile- responsive only.
- Live Chat or Chatbot Features: Real-time chat functionality is not included in this phase. Customer support will rely on email/contact form.

5. Project Deliverables

- Fully developed and tested e-commerce website.
- Configured payment gateway with test and live credentials.
- Admin interface for inventory and order tracking.
- User training material and admin guides.
- Signed-off project scope and stakeholder acceptance records.
- Requirements Traceability Matrix (RTM) to ensure all stakeholder requirements were met.

6. Work Breakdown Structure

WBS Code	Task Name	Description
1.0	Project Initiation	Define scope, conduct stakeholder analysis, create project charter
2.0	Project Planning	Develop schedules, budgets, risk management and communication plans
3.0	UI/UX Design	Create wireframes, page layouts, visual assets, and ensure responsive design

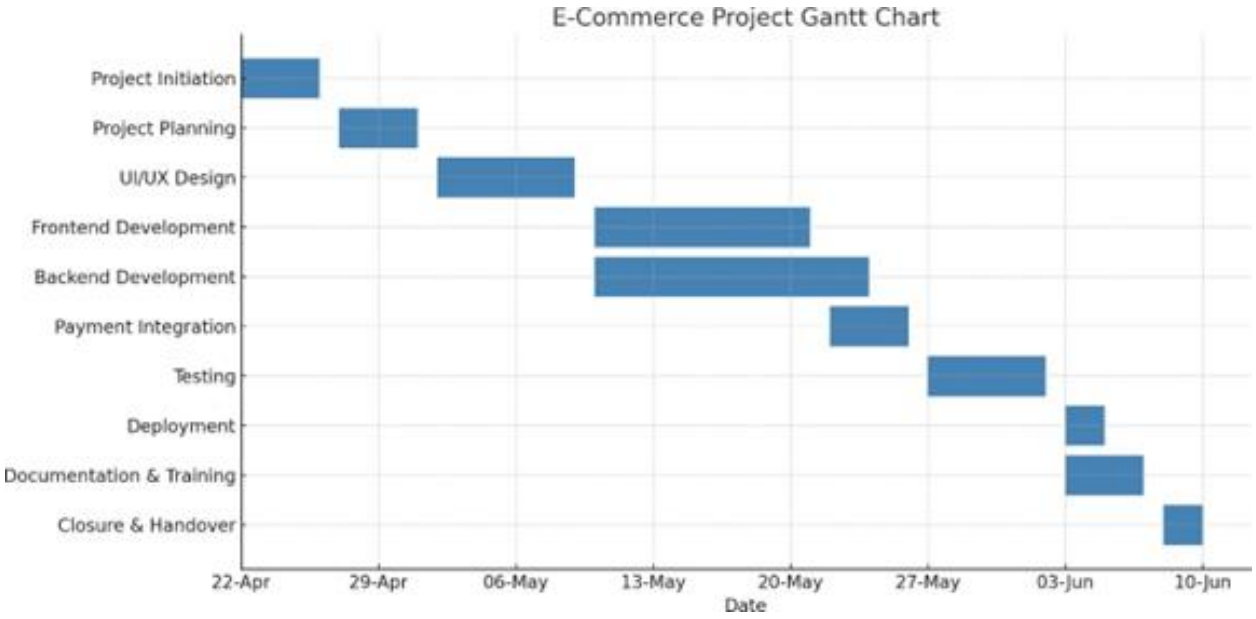
4.0	Frontend Development	Implement product pages, cart functionality, user dashboard, and mobile responsiveness
5.0	Backend Development	Build server logic, database integration, admin dashboard, and inventory systems
6.0	Payment Integration	Integrate and test secure payment gateway.
7.0	Testing	Conduct unit tests, system testing, and end-user testing for security and performance
8.0	Deployment	Launch website on live server with domain and SSL, migrate database
9.0	Documentation & Training	Prepare technical documentation, admin guides, and host training sessions
10.0	Project Closure & Handover	Final acceptance testing, stakeholder validation, and post- deployment support

7. Project Schedule

	Task Name	**Start Date**	**End Date**	**Duration**	**Dependencies**	**Milestone**
1	Project Initiation	22/4/25	26/4/25	5 Days	None	Yes
2	Project Planning	27/4/25	01/5/25	5 Days	1.0	Yes
3	UI/UX Design	02/5/25	09/5/25	8 Days	2.0	Yes
4	Frontend Development	10/5/25	21/5/25	12 Days	3.0	
5	Backend Development	10/5/25	24/5/25	15 Days	3.0	Yes
6	Payment Integration	22/5/25	26/5/25	5 Days	4.0, 5.0	Yes
7	Testing	27/5/25	02/6/25	7 Days	4.0, 5.0, 6.0	Yes
8	Deployment	03/6/25	05/6/25	3 Days	7.0	Yes

9	Documentation & Training	03/6/25	07/6/25	5 Days	6.0, 7.0	
10	Project closure & Handover	08/6/25	10/6/25	3 Days	8.0, 9.0	Yes

8. Gantt Chart



9. Resource Plan

Resources Required

Personnel

- Project Manager (PMO Director): 1 person - Oversees all tasks, manages stakeholders, and handles initiation, planning, and closure (5+5+3 days).
- Business Analysts: 3 people - Assists with scope definition and stakeholder analysis during initiation (5 days).
- Financial Analysts: 2 people - Develops budgets during planning (3 days).
- Risk Managers: 2 people - Creates risk management plan (2 days).
- UI/UX Designers: 3 people - Design wireframes, layouts, and visual assets (8 days).

- Frontend Developers: 4 people - Build product pages, cart, and user dashboard (12 days).
- Backend Developers: 6 people - Develop server logic, database, and admin dashboard (15 days).
- Database Administrators: 3 people - Manages database setup and optimization (5 days).
- Security Testers: 4 people - Performs penetration testing (3 days).
- Trainers: 5 people - Conducts training sessions for admins (2 days).

Equipment

- Laptops/Computers: 35 units (shared across personnel for tasks like design, development, testing, and documentation).
- Servers: 2 development servers (cloud-based, e.g., AWS or Azure) for backend development and testing and 1 production server (cloud-based) for deployment.
- Testing Devices: 2 smartphones and 2 tablets for responsive design testing.
- Network Infrastructure: Internet access for cloud hosting, API integration, and virtual meetings.

Tools & Software

- Templates: Project charter, risk management plan, communication plan, user manuals, and admin guides.
- Design Assets: Style guides, brand guidelines (provided by client), and UI/UX design files.
- Software Licenses: Microsoft Project, Word, Excel, PowerPoint (for planning and documentation) and payment gateway SDK (e.g., Stripe or PayPal).
- API Documentation: For backend and payment gateway integration.
- Test Credentials: For payment gateway testing.
- Domain Name and SSL Certificate: For live deployment.
- Cloud Hosting Credits: For development and production servers.

10. Quality Management Plan

Planning Quality Management (Standards)

- Usability: The website aims for a user-friendly interface to ensure easy navigation, clear product information, and a simple checkout process.
- Security: Secure user registration and authentication, and safeguarded payment method, will comply with industry standards to protect user data and financial transactions.
- Performance: The website should have acceptable response times for browsing and finalizing transactions.
- Maintainability: The backend system and source code will be composed with maintainability in mind, considering future updates.
- Testing: An organized testing methodology will be done, including unit testing by developers, integration, system, and user acceptance testing.

Managing Quality (Responsibilities)

- Project Manager: Ensure that the Quality Management Plan is developed, executed, and adhered to throughout the project lifecycle. Organize quality related tasks, check progress against quality metrics, and resolve any problems that occur.
- Business Analysts: Outline and document the project requirements, which are the base for quality standards.
- UI/UX Designers: Ensure the website's design follows usability principles and meets the requirements for a user-friendly interface.
- Developers: Develop high-quality code that follows the requirements and comply with security and performance standards.
- Testers: Planning and conducting different levels of testing to identify defects and ensuring the system meets the quality standards and user expectations.
- Admins: Take part in the description of quality expectations, especially in relation to the admin interface and operational features of the platform. Also involved in user acceptance testing for the admin functionalities.

Controlling Quality

Measurement of Quality

- Number of Defects (bugs): Total number of defects found through each testing phase will be documented.
- Severity of Defects: Defects will be grouped by severity (critical, major, minor) to organize their resolution.
- System Response Time: The time it takes for website functions will be measured against predetermined performance targets.
- User Satisfaction: Feedback will be gathered from end-users using surveys after user acceptance testing and before implementation to measure their satisfaction with the website's usability and functionality.
- Security Vulnerabilities: The number and severity of security vulnerabilities found during security testing will be tracked and resolved.
- Adherence to Requirements: The Requirements Traceability Matrix (RTM) will be used to ensure that all requirements are tested for and met.

Monitoring of Quality

- Regular Testing and Defect (bug) Tracking: The results of all testing will be documented, and defects will be recorded, tracked, and resolved through a defect tracking system.
- Quality Control Meetings: Frequent meetings will be held to discuss quality related concerns, evaluate testing progress, and assess quality metrics.
- Use of Quality Tools: Check sheets may be used to collect data on the frequency and types of problems faced. Pareto charts could be used to classify the most frequent causes of defects. Cause-and-effect diagrams could be used to investigate the origins of consequential quality problems.
- User Acceptance Testing (UAT) Sign-off: Official sign-off from the Project Sponsor and Admin after successful finalization of UAT will be a key milestone in confirming the quality of the system.
- Post-Implementation Monitoring: After the website is launched, key performance indicators (KPIs) about quality will always be monitored. User feedback will also be sought to find any post-launch quality concerns.

11. Risk Management Plan

- Objective: To identify, assess, and respond to risks that could impact the project's success.

Risk Management Standards & Techniques

- Standards: Based on PMI's PMBOK guidelines
- Approach: Combination of qualitative and quantitative risk analysis.

Roles and Responsibilities

Role	Responsibility
Risk Manager	Develops and maintains the risk management plan.
Project Manager	Approves the risk responses and oversees mitigation strategies.
Development Team	Identifies technical risks during implementation.
Stakeholders	Provide feedback and report new risks.

Risk Identification Techniques

- Brainstorming sessions
- Interviews with stakeholders.
- SWOT Analysis (internal strengths/weaknesses vs. external opportunities/threats)

Risk Register

ID	Risk Description	Category	Probability	Impact	Response Strategy	Owner
R1	Payment gateway downtime	Technical	High	High	Use backup gateway or offline method	Backend Developers

R2	Delay in UI/UX delivery	Schedule	Medium	Medium	Prioritize wireframes early	Project Manager
R3	Data breach or hack	Security	High	High	SSL, security testing, firewall	Security Testers
R4	Cloud service failure	Infrastructure	Low	High	Use distributed backups	DBA
R5	Budget overrun	Financial	Medium	Medium	Frequent budget checks	Financial Analysts

Risk Response Strategies

- Avoidance: Minimize exposure by adjusting scope or features.
- Mitigation: Implement preventative measures like early testing or redundant systems.
- Acceptance: For low-impact risks, accept with monitoring.
- Transference: Use third-party insurance or SLAs (e.g., for cloud hosting).

Risk Monitoring

- Weekly risk review meetings
- Risk register updates
- KPIs on incident frequency and response times

12. Communication Plan

- Objective: To define how project information will be shared with stakeholders.

Communication Objectives

- Ensure timely updates to stakeholders.
- Provide clear documentation for decision-making.
- Facilitate collaboration among team members.

Communication Methods

Type	Method	Purpose
Interactive	Zoom, MS Teams	Weekly meetings, urgent discussions
Push	Email, Reports	Status updates, risk alerts
Pull	Shared drive, Trello/Kanban	Ongoing access to files tasks, timelines

Communication Matrix

Stakeholder	Info Needed	Format	Frequency	Owner
Project Sponsor	Status Report	PDF/Email	Weekly	Project Manager
Dev Team	Task assignments	Trello Board	Daily	Team Leads
Admin Staff	Feature updates	Email	Bi-Weekly	BA
End Users	Announcements	Website Banner	As needed	PM
Third-party		Email/Docs	On change	Dev Team
Providers	API updates			

Communication Tools

- Google Drive / SharePoint: For documentation
- Trello / Jira: Task and bug tracking

- Slack / Teams: Daily standups, casual collaboration
- Email: Formal updates, escalations

Performance Reporting

- Progress reports (weekly)
- Issue log tracking
- Milestone tracking via Gantt Chart

Escalation Procedure

- Critical issues unresolved for 48 hours are escalated to the Project Sponsor.
- All escalations documented and reviewed in weekly status meetings.

13. Project Budget

Item	Description	Estimated cost (Rands)
1. Project Initiation		
Business analysis	Workshops and interviews	20 000
Marketing and research	Pricing and marketing strategies	15 000
Subtotal		35 000
2. Project Planning		
Project management tools	Software applications	15 000
Risk assessment and mitigation plan	Contingency planning	30 000
Milestone and timeline planning	Gantt and sprint planning	35 000

Subtotal		80 000
3. UI/UX Design		
Branding (logo)	Colors style and design	10 000
Mobile optimization	User-friendly and visual appeal	20 000
Subtotal		30 000
4. Frontend Development		
Homepage	Custom layout	30 000
Products list and search bar	Layout of products	10 000
User account and profile	Personalized features	40 000
Subtotal		80 000
5. Backend Development		
Database setup	MySQL, PostgreSQL, NoSQL and Oracle	60 000
Admin interface	Web admin, interface, WordPress, Django admin interface, etc.	50 000
Order management and cart	Tracking of order and stock checking	30 000
Subtotal		140 000
6. Payment Integration		
Gateway setup	Payment options e.g. PayPal or Stripe	10 000
Multi-currency and tax support	Ability to receive money in any currency	15 000
Fraud detection	Software and systems to detect fraud	15 000
Subtotal		40 000

7. Testing		
Functional testing	Manual or automated test tools	50 000
Performance testing	How well does the system perform	30 000
Privacy testing	Vulnerable check	50 000
User acceptance testing	User feedback	30 000
Subtotal		150 000
8. Deployment		
Host setup	Shopify, AWS and VPS	10 000
Domain	.com and https security	5 000
Performance optimization	Fast performance	10 000
Subtotal		25 000
9. Documentation & Training		
Technical documentation	API docs and admin guides	10 000
Admin and user manuals	Video, demo and FAQ	10 000
Training session	Workshops and supports	20 000
Subtotal		40 000
10. Project Closure & Handover		
Post-launch bug fixes	1-2 months of maintenance	50 000
Performance review	Google analytic and heatmap	10 000
Project Retrospective	Analyzing failure or success	10 000
Subtotal		35 000
Total project cost estimate		**655 000**

14. Conclusion

The introduction of this e-commerce website is a complete solution to ensure the safe and easy-to-use online shopping environment. Relatively speaking, because of features such as user interface, product browsing, cart management, payment integration, secured payment implementation and dashboard for the admin role...from a beginning to an end is smooth for both the customers and for the admins.

Key Achievements

Secure & User-Centric Design

- Enabled SSL encryption, secure authentication, and PCI-approved payment processing to protect user information.
- Developed an intuitive UI/UX with responsive design for seamless browsing across devices.

End-to-End Functionality

- Enabled user registration, cart management, browsing of products, and multiple payment choices during checkout.
- Developed a specialized admin dashboard to manage inventory, track orders, and customers.

Stringent Quality Assurance

- Executed unit, integration, performance, and security testing to validate reliability.
- Carried out User Acceptance Testing (UAT) to ensure functionality against stakeholders' expectations.

Risk Mitigation & Compliance

- Mitigated potential risks (e.g., payment gateway errors, security compromises) through contingency strategies.
- Ensured compliance with industry standards pertaining to security, performance, and scalability.

Stakeholder Collaboration and Training

- Ensured open communication using weekly reports, documentation, and training meetings.

- Supplied admin guides and technical manuals to ensure effective post-launch operations.

Final Deliverables

- Launched e-commerce website with real-time payment integration.
- Product, order, and user management in an administrator portal.
- Detailed documentation (technical, user, and training manuals).
- Project closure signed off by stakeholders.

Future Improvements & Next Steps

While this stage addresses foundational e-commerce functionality, expansions in the future might include:

- Multi-vendor marketplace integration
- Development of iOS and Android mobile applications
- Artificial intelligence-powered suggestions and chatbot assistance

Final Budget and Timeline Summary

Estimated Total Costs: R655 000

Project Duration: Approximately 7 weeks (from initiation to handover).

The project reliably provides a secure, scalable, and effective e-commerce platform that meets business needs as well as improves the customer experience through proper upkeep and incremental optimization, enabling business growth as well as keeping up with changing business needs.