IMS SOFTWARE DEVELOPMENT

Group Assignment
IT Software Project

GTEC 32012 - Project Management

Presented by: Tech giants

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Contents

1.Project Charter

1.1 Project Title

Inventory Management System Development

1.2 Proposed Start Date

1st July 2024

1.3 Projected End Date

31st December 2024

1.4 Project Purpose

To develop an automated Inventory Management System (IMS) to replace the current manual process at Innovative IT Solutions, aiming to enhance accuracy, efficiency, and overall supply chain management.

1.5 Project Objectives

- Implement a new IMS within 6 months.
- Achieve a 90% reduction in manual inventory tracking errors.
- Facilitate real-time inventory updates and automated reorder processes.
- Ensure the system supports future scalability and growth.

1.6 Project Description

The project will deliver a web-based IMS that automates inventory tracking and management processes. Key functionalities will include real-time updates, automated reorder levels, detailed reporting, and role-based access. The system will be integrated with existing accounting and sales platforms. Training and support documentation will be provided for a smooth transition to the new system.

1.7 High-Level Requirements

- Web-based platform for accessibility.
- Real-time inventory tracking and updates.
- Automated reorder notifications.
- Comprehensive reporting and analytics.
- Secure role-based access control.
- Integration with existing accounting and sales systems.
- Comprehensive user training and support materials.

1.8 Deliverables

- Requirements Specification Document
- System Design Document
- Developed IMS with required features
- Testing and Quality Assurance Reports
- User Training Sessions and Documentation
- Project Closure Report

1.9 In-Scope

- Development of the web-based IMS.
- Features for inventory updates, order processing, stock level monitoring, and reporting.
- Role-based user management.
- Integration with current accounting and sales systems.
- User training and support documentation.

1.10 Out of Scope

- Development of a mobile application.
- Major enhancements to existing accounting and sales systems.
- Long-term post-launch system maintenance.

1.11 Milestones

1. **Project Kickoff:** 1st July 2024
2. **Requirements Specification Approved:** 31st July 2024
3. **System Design Document Approved:** 31st August 2024
4. **Functional IMS Prototype:** 31st October 2024
5. **Testing Complete:** 15th December 2024
6. **System Go-Live:** 31st December 2024

1.12 Known Risks

- Possible delays in requirement gathering due to stakeholder availability.
- Risk of scope changes during the project.
- Technical challenges in integrating with existing systems.
- User resistance to adopting the new system.

1.13 Project Team

- Project Manager
- Business Analyst
- System Architect
- Developers (3)
- Quality Assurance Engineers (2)
- Technical Writer
- Training Specialist

1.14 Approved By

- CEO, Innovative IT Solutions
- Operations Manager
- IT Department Manager

2. Project Scope Statement

2.1 Project Title

Inventory Management System Development

2.2 Project Objectives

- Implement a new web-based Inventory Management System (IMS) within 6 months.
- Achieve a 95% reduction in manual inventory tracking errors.
- Provide real-time inventory updates and automated reorder notifications.
- Ensure the IMS is robust and flexible to support future enhancements.

2.3 Deliverables

- **Requirements Specification Document:** Detailed document outlining all functional and non-functional requirements.
- **System Design Document:** Detailed design and architecture of the system.
- **Developed IMS:** Fully functional IMS with specified features.
- **Testing Reports:** Documentation of unit, integration, and system testing.
- **User Training Materials:** Training manuals and sessions for end-users.
- **Project Closure Documentation:** Comprehensive report detailing project completion and outcomes.

2.4 Boundaries

2.4.1 In-Scope:

- Development of the web-based IMS.
- Features including inventory updates, automated ordering, stock level monitoring, and comprehensive reporting.
- Implementation of role-based access controls.
- Integration with the company's existing accounting and sales systems.
- Provision of user training and support materials.

2.4.2 Out-of-Scope:

- Development of mobile applications.
- Extensive upgrades to existing accounting and sales systems.
- Long-term maintenance and support post-deployment.

2.5 Acceptance Criteria

- The IMS meets all specified functional and non-functional requirements.
- User Acceptance Testing (UAT) is successfully completed with user approval.
- End-users are adequately trained and can effectively use the system.
- The project is delivered within the budget of Rs. 750,000 and the 6-month timeframe.
- All project deliverables are reviewed and approved by key stakeholders.

2.6 Assumptions

- All required resources and infrastructure will be available throughout the project duration.
- Stakeholders will be available to provide timely feedback and approvals.
- No major changes to requirements will occur after the requirements phase.
- The project team has the necessary skills and experience to complete the project successfully.

2.7 Constraints

- **Time:** The project must be completed within a 6-month period, from 1st July 2024 to 31st December 2024.
- **Budget:** The project budget is limited to Rs. 750,000, which must cover all aspects of development, testing, and deployment.
- **Scope:** The project must adhere strictly to the defined scope to prevent scope creep and ensure timely completion.

3. Project Plan for Inventory Management System (IMS) Development

3.1 Project Overview

3.1.1 Project Description

The Inventory Management System (IMS) project aims to design, develop, and implement a robust system to streamline inventory management processes. The system will include functionalities such as tracking inventory levels, generating reports, and integrating with existing systems to enhance operational efficiency.

3.1.2 Objectives

- Develop a user-friendly IMS to improve inventory tracking.
- Reduce manual inventory management tasks by 50%.
- Ensure seamless integration with existing enterprise systems.
- Provide training and support to ensure smooth transition and adoption.

3.1.3 Deliverables

- Project Charter
- Requirements Document
- System Design Documentation
- IMS Software
- Test Plans and Reports
- Training Materials
- User Manuals
- Deployment Plan
- Final Project Report

3.1.4 Scope Boundaries

3.1.4.1 Inclusions:

- **Inventory Tracking:** This includes designing and developing a system to monitor inventory levels, track stock movements, and manage product information. It ensures efficient inventory management and optimization.
- **Reporting:** Creating reporting functionalities to generate various inventory reports, including stock levels, sales trends, and order status. This enables data-driven decision-making and enhances operational visibility.
- **Integration:** Ensuring seamless integration with existing enterprise systems such as accounting software, order management systems, and supply chain management tools. This facilitates data flow and process automation across different departments.
- **User Interface (UI):** Designing an intuitive user interface for easy navigation and efficient inventory management. A user-friendly interface enhances user experience and promotes system usability.
- **Training and Support:** Providing training sessions and support materials to facilitate user adoption and system utilization. Proper training ensures that users can effectively leverage the system's functionalities.

3.1.4.2 Exclusions:

- **Financial Management:** Excludes features related to financial transactions, invoicing, and billing, as these are handled by separate accounting software. This delineation avoids duplication of functionalities and maintains focus on inventory management.
- **Human Resources Management**: Excludes functionalities related to HR processes such as employee management and payroll. This ensures that the project remains focused on inventory management without branching into unrelated domains.
- **Customer Relationship Management (CRM):** Excludes CRM features such as customer profiles, lead management, and customer communication tools. This exclusion maintains clarity regarding the project's objectives and prevents scope creep into CRM functionalities.

3.1.5 Key Stakeholders

- Project Sponsor: Jane
- Project Manager: John
- Business Analyst: Emily
- Development Team Lead: Michael
- QA Lead: Sarah
- End Users: Inventory Managers and Staff

3.1.6 Project Team

Role	Name
Project Manager	John
Business Analyst	Davis
Developer	Michael
QA Lead	Sarah
Technical Writer	Laura
Trainer	Alex
Procurement Specialist	Chris

3.2 Project Plan

3.2.1 Schedule

Phase	Start Date	End Date
Initiation	1-Jun-2024	10-Jun-2024
Planning	16-Jun-2024	15-Aug-2024
Execution	16-Aug-2024	15-Nov-2024
Monitoring & controlling	16-Oct-2024	15-Nov-2024
Closure	16-Nov-2024	30-Nov-2024

Detailed Schedule with Activities

Phase	Task	Start Date	End Date
Initiation	Develop Project Charter	1-Jun-2024	5-Jun-2024
	Conduct Stakeholder Analysis	6-Jun-2024	10-Jun-2024
Planning	Requirements Gathering	16-Jun-2024	30-Jun-2024
	- Conduct interviews	16-Jun-2024	20-Jun-2024
	- Analyze current processes	21-Jun-2024	25-Jun-2024
	- Document functional requirements	26-Jun-2024	29-Jun-2024
	- Prioritize requirements	30-Jun-2024	30-Jun-2024
	System Design	1-Jul-2024	15-Jul-2024
	- Design database schema	1-Jul-2024	5-Jul-2024
	- Develop UI wireframes	6-Jul-2024	10-Jul-2024
	- Define system architecture	11-Jul-2024	15-Jul-2024
	Resource and Budget Planning	16-Jul-2024	31-Jul-2024
	- Identify project team members	16-Jul-2024	18-Jul-2024
	- Allocate resources and roles	19-Jul-2024	22-Jul-2024
	- Estimate project budget	23-Jul-2024	27-Jul-2024
	- Identify procurement needs	28-Jul-2024	31-Jul-2024
	Risk Management	1-Aug-2024	10-Aug-2024
	- Identify project risks	1-Aug-2024	3-Aug-2024
	- Assess risk impact and likelihood	4-Aug-2024	6-Aug-2024
	- Develop risk response strategies	7-Aug-2024	10-Aug-2024
	Procurement Planning	11-Aug-2024	15-Aug-2024
	- Identify hardware and software needs	11-Aug-2024	12-Aug-2024
	- Research and select vendors	13-Aug-2024	15-Aug-2024
Execution	Development	16-Aug-2024	15-Oct-2024

	- Backend Development	16-Aug-2024	9-Sep-2024
	- Frontend Development	10-Sep-2024	29-Sep-2024
	- Database Implementation	30-Sep-2024	9-Oct-2024
	- UI/UX Design	10-Oct-2024	15-Oct-2024
	Integration and Testing	16-Oct-2024	15-Nov-2024
	- Unit Testing	16-Oct-2024	25-Oct-2024
	- Integration Testing	26-Oct-2024	4-Nov-2024
	- System Testing	5-Nov-2024	15-Nov-2024
	Training and Documentation	16-Nov-2024	30-Nov-2024
	- Develop user manuals	16-Nov-2024	20-Nov-2024
	- Conduct training sessions	21-Nov-2024	28-Nov-2024
	- Prepare deployment guides	29-Nov-2024	30-Nov-2024
Monitoring & Controlling	Project Monitoring	16-Oct-2024	15-Nov-2024
	- Track project progress	16-Oct-2024	25-Oct-2024
	- Review project risks and issues	26-Oct-2024	4-Nov-2024
	- Monitor resource utilization	5-Nov-2024	11-Nov-2024
	- Conduct stakeholder meetings	12-Nov-2024	15-Nov-2024
	Quality Assurance	16-Oct-2024	15-Nov-2024
	- Conduct quality reviews	16-Oct-2024	25-Oct-2024
	- Perform code reviews	26-Oct-2024	4-Nov-2024

	- Address bugs and issues	5-Nov-2024	12-Nov-2024
	- Ensure compliance with standards	13-Nov-2024	15-Nov-2024
	Change Management	16-Oct-2024	15-Nov-2024
	- Manage change requests	16-Oct-2024	25-Oct-2024
	- Assess change impacts	26-Oct-2024	3-Nov-2024
	- Update documentation	4-Nov-2024	10-Nov-2024
	- Obtain approvals for changes	11-Nov-2024	15-Nov-2024
Closure	Finalization and Handover	16-Nov-2024	25-Nov-2024
	- Complete final development tasks	16-Nov-2024	20-Nov-2024
	- Prepare for system deployment	21-Nov-2024	23-Nov-2024
	- Conduct user acceptance testing	24-Nov-2024	25-Nov-2024
	Project Review and Documentation	26-Nov-2024	28-Nov-2024
	- Conduct project retrospective	26-Nov-2024	27-Nov-2024
	- Document lessons learned	28-Nov-2024	28-Nov-2024
	Project Closure	29-Nov-2024	30-Nov-2024
	- Obtain formal acceptance	29-Nov-2024	29-Nov-2024
	- Close project contracts	30-Nov-2024	30-Nov-2024

3.2.2 Dependencies

Activity	Depends on	Dependency Type
Conduct Stakeholder Analysis	Develop Project Charter	Finish-to-Start
System Design	Requirements Gathering	Finish-to-Start
Resource and Budget Planning	System Design	Finish-to-Start
Risk Management	Resource and Budget Planning	Finish-to-Start
Procurement Planning	Risk Management	Finish-to-Start
Backend Development	Procurement Planning	Finish-to-Start
Frontend Development	Backend Development	Finish-to-Start
Database Implementation	Frontend Development	Finish-to-Start
UI/UX Design	Database Implementation	Finish-to-Start
Unit Testing	UI/UX Design	Finish-to-Start
Integration Testing	Unit Testing	Finish-to-Start
System Testing	Integration Testing	Finish-to-Start
Develop user manuals	System Testing	Finish-to-Start
Conduct training sessions	Develop user manuals	Finish-to-Start
Prepare deployment guides	Conduct training sessions	Finish-to-Start
Track project progress	Backend Development	Start-to-Start
Review project risks and issues	Track project progress	Start-to-Start
Monitor resource utilization	Review project risks and issues	Start-to-Start
Conduct stakeholder meetings	Monitor resource utilization	Start-to-Start
Conduct quality reviews	Backend Development	Start-to-Start
Perform code reviews	Conduct quality reviews	Start-to-Start
Address bugs and issues	Perform code reviews	Start-to-Start
Ensure compliance with standards	Address bugs and issues	Start-to-Start
Manage change requests	Backend Development	Start-to-Start
Assess change impacts	Manage change requests	Start-to-Start
Update documentation	Assess change impacts	Start-to-Start
Obtain approvals for changes	Update documentation	Start-to-Start
Complete final development tasks	Obtain approvals for changes	Finish-to-Start
Prepare for system deployment	Complete final development tasks	Finish-to-Start
Conduct user acceptance testing	Prepare for system deployment	Finish-to-Start
Conduct project retrospective	Conduct user acceptance testing	Finish-to-Start
Document lessons learned	Conduct project retrospective	Finish-to-Start
Obtain formal acceptance	Document lessons learned	Finish-to-Start
Close project contracts	Obtain formal acceptance	Finish-to-Start

3.2.3 Assumptions

1. **All necessary resources, including personnel, software, and hardware, will be available as planned.**
2. **Stakeholders will provide timely feedback and approvals to avoid delays.**
3. **Integration with existing systems will not require significant modifications or cause disruptions.**
4. **Users will be available and cooperative for training sessions.**
5. **External vendors will deliver products and services on time as per the procurement schedule.**
6. **The project team will have the required technical skills and expertise to complete the tasks.**
7. **The scope of the project will remain stable throughout the project lifecycle.**

3.2.4 Constraints

1. **The project must be completed within 6 months, from June 1, 2024, to November 30, 2024.**
2. **The total budget for the project is capped at $475,000.**
3. **No additional funds or time extensions will be approved beyond the allocated budget and timeline.**
4. **The IMS must be compliant with the existing IT infrastructure and policies of the organization.**
5. **The quality of the IMS must meet predefined standards and requirements.**
6. **Availability of key stakeholders and end users for feedback and testing within the scheduled timelines.**
7. **Procurement processes must adhere to the organization's procurement policies and timelines.**
8. **The project must not disrupt the existing operations of the inventory management process.**

3.3 Cost

3.3.1 High-Level Budget Estimate

Cost Component	Estimated Cost (USD)
Software Licenses	50,000
Hardware	100,000
Personnel	250,000
Training	25,000
Contingency	50,000
Total	475,000

Detailed Breakdown

Task	Cost (USD)
Develop Project Charter	10,000
Conduct Stakeholder Analysis	8,000
Requirements Gathering	30,000
System Design	25,000
Resource and Budget Planning	15,000
Risk Management	12,000
Procurement Planning	10,000
Development	150,000
Integration and Testing	50,000
Training and Documentation	20,000
Monitoring and Controlling	35,000
Closure	10,000
Contingency	50,000
Total	475,000

3.4 Risk Management

3.4.1 Risk Identification

Risk	Likelihood	Impact	Mitigation Strategy
Delays in Requirements Gathering	Medium	High	Conduct thorough planning; have a buffer time
Budget Overrun	Medium	High	Regular budget reviews; contingency funds
Technical Challenges	High	Medium	Employ experienced developers; early prototyping
Stakeholder Conflicts	Medium	High	Regular stakeholder meetings; clear communication
Resource Unavailability	Low	High	Early resource planning; backup resources

3.4.2 Risk Assessment

Risk	Severity	Mitigation Strategy
Delays in Requirements Gathering	High	Conduct thorough planning; have a buffer time
Budget Overrun	High	Regular budget reviews; contingency funds
Technical Challenges	Medium	Employ experienced developers; early prototyping
Stakeholder Conflicts	High	Regular stakeholder meetings; clear communication
Resource Unavailability	High	Early resource planning; backup resources

3.4.3 Risk Response

Risk	Response Plan
Delays in Requirements Gathering	Re-schedule tasks; involve more resources
Budget Overrun	Reallocate budget; cut non-essential costs
Technical Challenges	Increase technical support; seek external help if needed
Stakeholder Conflicts	Mediation; establish a conflict resolution process
Resource Unavailability	Identify alternative resources; reassign tasks

3.5 Project Monitoring & Controlling

3.5.1 Performance Monitoring

Metric	Method
Project Schedule	Gantt Chart, Progress Tracking
Budget	Budget Reports, Financial Audits
Quality	QA Reviews, Testing Reports
Risks	Risk Register, Risk Reports

3.5.2 Development

Task	Responsible Party
Backend Development	Development Team
Frontend Development	Development Team
Database Implementation	Database Team
UI/UX Design	Design Team
Unit Testing	QA Team
Integration Testing	QA Team
System Testing	QA Team

3.5.3 Tools and Techniques

Tool	Purpose
Gantt Chart	Schedule Tracking
Risk Register	Risk Tracking
Budget Reports	Financial Monitoring
QA Reviews	Quality Assurance

3.6 Closure

3.6.1 Finalization and Handover

Task	Responsible Party
Complete final development tasks	Development Team
Prepare for system deployment	Deployment Team
Conduct user acceptance testing	QA Team, End Users

3.6.2 Project Review and Documentation

Task	Responsible Party
Conduct project retrospective	Project Team
Document lessons learned	Project Manager

3.6.3 Project Closure

Task	Responsible Party
Obtain formal acceptance	Project Sponsor
Close project contracts	Procurement Specialist