

Software Project Management Plan for “Online Inventory Control System”

1. Introduction

The Online Inventory Control System (OICS) is being developed to manage and track inventory efficiently in a digital environment. This system is intended for use in retail businesses, college events, startups, and warehouses where monitoring stock levels, item entries, and reordering needs to be automated and accessible via the web. By replacing traditional manual methods, the system will provide a streamlined solution to minimize errors, reduce overstock or stockouts, and improve overall operational visibility.

I. Project Overview

The primary objective is to develop a full-featured Online Inventory Control System (OICS), named Inventra, that serves as a complete operational platform for managing and tracking inventory efficiently in digital environments. Key functionalities will include comprehensive product management (Add/Edit/Delete), real-time stock adjustment, and automated low-stock alert notifications to minimize errors and stockouts. The system will feature secure, role-based access control and robust report generation capabilities for stock and transaction logs. The platform will utilize a responsive design built on modern web frameworks (like NextJS) and a No-SQL database (MongoDB), ensuring an optimal, secure, and intuitive experience for users across all devices. The goal is to deliver a streamlined admin dashboard for efficient inventory control and a reliable, real-time solution for businesses and project teams..

II. Project Deliverables

1. Preliminary Project Plan	23.07.2025
2. Requirements Specification	01.08.2025
3. Analysis [Object model, Dynamic model, and User interface]	11.08.2025
4. Architecture Specification	09.09.2025
5. Component/Object Specification	17.09.2025
6. Source Code	18.09.2025 - 27.10.2025
7. Test Plan	28.10.2025 - 11.11.2025
8. Final Product Demo	18.11.2025

III. Evolution of this document

This document will be updated as the project progresses. Updates should be expected in the following sections:

- i. **References** - updated as necessary.

- ii. **Definitions, acronyms, and abbreviations** - updated as necessary.
- iii. **Organizational Structure** will be updated as the team leaders are assigned for each phase.
- iv. **Technical Process** - this section will be revised appropriately as the requirements and design decisions become clearer.
- v. **Schedule** – as the project progresses, the schedule will be updated accordingly.

Revision History

Revision	Date	Updated By	Update Comments
0.1	01.08.2025	Anirban Bandyopadhyay	First Draft
0.2	17.08.2025	Anirban Bandyopadhyay	Second Draft/Final Draft

IV. References

- i. Team Website
<http://wwwis.win.tue.nl/2M3901/projects/spingrid/spmp.pdf>
- ii. Project Scope
<http://wwwis.win.tue.nl/2M3901/projects/spingrid/spmp.pdf>
- iii. Case Studies
 - “Inventory Management Best Practices” – Zoho Inventory -
<https://www.zoho.com/inventory/guides/inventory-management.html>
 - “Wikipedia Article on Inventory Management -
https://en.wikipedia.org/wiki/Inventory_management.
 - “Inventory Control Explained” – Investopedia -
<https://www.investopedia.com/terms/i/inventory-control.asp>

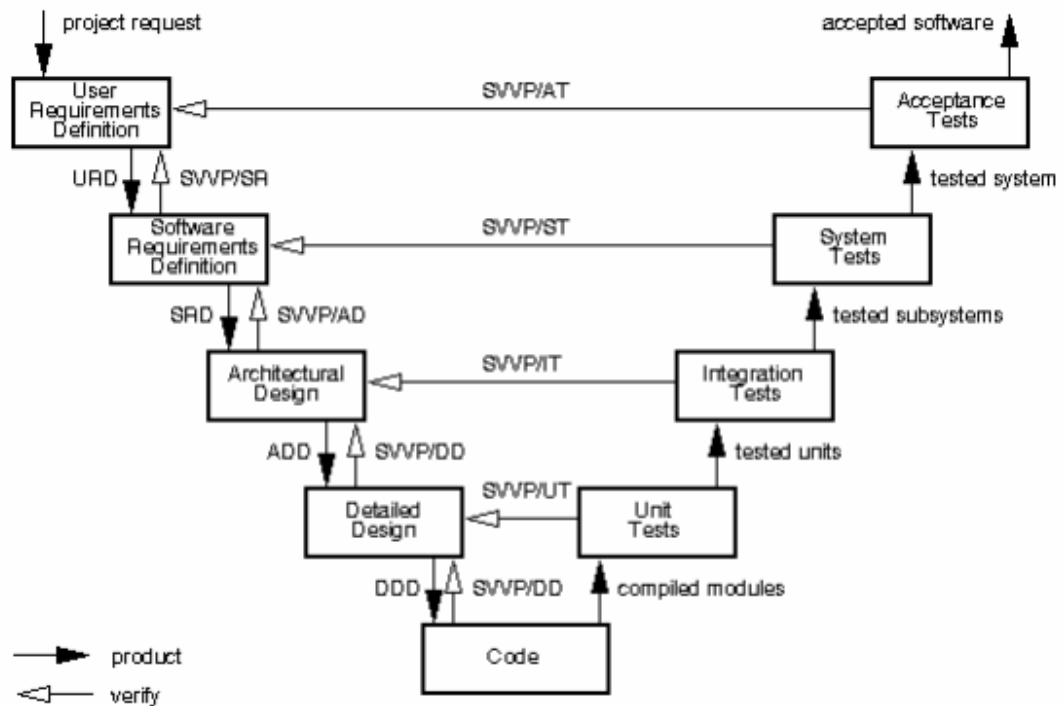
V. Definitions, Acronyms, and Abbreviations

- i. SRS: Software Requirements Specification
- ii. API: Application Programming Interface
- iii. UI: User Interface
- iv. UX: User Experience
- v. GUI: Graphical User Interface
- vi. SQL: Structured Query Language
- vii. DBMS: Database Management System
- viii. HTTP: Hypertext Transfer Protocol
- ix. HTTPS – Hypertext Transfer Protocol Secure, ensures secure communication.
- x. SQA - Software Quality Assurance
- xi. SQAP - Software Quality Assurance Plan
- xii. SR - Software Requirements
- xiii. SRD - Software Requirements Document
- xiv. STD - Software Transfer Document
- xv. STP - Software Test Plan Submitter Application that submits jobs to dispatchers

2. Project Organization

I. Process Model

The process used for this project will be a V-model such that each stage of the model allows us to do testing after completing a phases. Referring to the diagram below, each phase is tested after completion.



II. Organizational Structure

Team Members – [Individual Project]

- i. Anirban Bandyopadhyay

Name	Organization/ Position	Contact Information
Anirban Bandyopadhyay	ITech Project Manager	anirbanown@gmail.com +919547571220
Anirban Bandyopadhyay	ITech Business Analyst	anirbanown@gmail.com +919547571220

Days	Deliverable	Team Leader	Deliverable Description
9	1	Anirban Bandyopadhyay	Project Plan
7	2	Anirban Bandyopadhyay	Requirements Specification
9	3	Anirban Bandyopadhyay	Analysis
13	4	Anirban Bandyopadhyay	Architecture Specification
9	5	Anirban Bandyopadhyay	Component/Object Specification
14	6	Anirban Bandyopadhyay	Source Code
7	7	Anirban Bandyopadhyay	Test Plan
5	8	Anirban Bandyopadhyay	Final Deliverable

III. Organizational Boundaries and Interfaces

Team leaders throughout each development of the phases will be responsible for coordinating team meetings, updates, communications, and team deliverables.

IV. Project Responsibilities

For the most vital responsibilities per phase of each team members, please refer to segment 2.2. Ultimately the project team is responsible for the successful delivery of the product. The team member tasks per deliverable according to expertise and the phases are as given below:

1. Project Plan – Whole Team
2. Requirements Specification – TBD
3. Analysis – TBD
4. Architecture Specification – TBD
5. Component/Object Specification – TBD
6. Source Code – TBD
7. Test Plan – TBD
8. Final Deliverable – Entire Team

Name	Organization/ Position	Role/Responsibilities
Anirban Bandyopadhyay	ITech Project Manager	<ul style="list-style-type: none"> Managing and leading the project team. Developing and maintaining a detailed project plan. Monitoring project progress and performance. Managing project evaluation and dissemination activities. Develop corrective actions when necessary.
Anirban Bandyopadhyay	ITech Business Analyst	<ul style="list-style-type: none"> Prepare reports on project plans, status, progress, risks, deadlines and resource requirements. Develop and perform work flow analysis to find out the difficulties in reaching goals. Provide project cost estimates.
Anirban Bandyopadhyay	ITech Designer	<ul style="list-style-type: none"> Propose effective design solutions to meet project goals. Prepare design layouts and sketches according to company design standards. Keeping of records and files.
Anirban Bandyopadhyay	ITech Staff	<ul style="list-style-type: none"> Documentation of daily activities. Making kick-off meeting reports. In-charge of materials needed for team building activities.

3. Managerial Process

I. Management Objectives and Priorities

The management objective is to deliver the product in time and of high quality. The PM and QAM work together to achieve this by respectively checking that progress is made as planned and monitoring the quality of the product at various stages.

II. Assumptions, Dependencies, and Constraints

In this project plan, a number of factors are taken into account. The following list shows the way milestones on various project phases have been scheduled:

- The team budget of 4 persons x 387 hours = 1548 hours
- The project deadline of September 30th.
- The final presentation is on September 30th.
- The peer evaluation deadline is on September 26th.
- Other days the weekends holiday is closed (August 2nd, August 3rd, August 9th, August 10th, August 16th, August 17th, August 23rd, August 24th, August 30th, August 31st, September 6th, September 7th, September 13th, September 14th, September 20th, September 21st, September 27th, September 28th).

NOTE: Due to the deadline and running out of time will have its reflection on the product, and not on the duration of the project. By assigning a priority to every user requirement, a selection can be made of user requirements that may be dropped out if time runs out.

III. Risk Management

This section mentions any potential risks for the project. Also, schedules or methods are defined to prevent or to reduce the risks as below:

- i. Technology risk
- ii. People risk
- iii. Financial risk
- iv. Market risk
- v. Structure/process risk

The following are the possible risks to be encountered during the development of the project and how they can be prevented.

1. Miscommunication

Prevention: Team members should not hesitate to ask and re-ask questions if things are unclear. Team members should have a written copy of the tasks assigned to them every meeting.

Correction: When it becomes clear that miscommunication is causing problems, the team members should gather in a meeting to clear things up.

2. Time shortage

Prevention: Care is taken to plan enough spare time. *Correction:* When tasks fail to be finished in time or when they are finished earlier than planned the project planning is adjusted

3. Illness or absence of team members

Prevention: Team members should warn their team leader or the PM timely before a planned period of absence.

Correction: Work can be taken over quickly by someone else or be distributed among the team members if a person gets ill.

Monitoring and Controlling Mechanisms:

The monitoring of progress is done by the PM using the following means:

Project Kick-off Meetings

The project group meetings take place within the class room or through chat. These meetings are meant to inform each other of the progress made on various tasks and to assign new tasks.

Progress Report

Progress report is done every Friday. This is meant to inform and show the progress in the development of the project and how things are going.

IV. Monitoring and Controlling Mechanisms

The monitoring of progress is done by the PM using the following means:

- i. Weekly project status meetings
- ii. Shared document repository
- iii. Project tracking by MS project plan
- iv. Tracking utilizing baselines in MS project

4. Technical Process

I. Methods, Tools, and Techniques

The project will be implemented utilizing V-model methodology, and tools such as Dreamweaver, Microsoft Project, Star UML, and Load Runner will be utilized. The risks for each category are listed to complete the project successfully. For each risk, a description, a probability of occurrence, the associated action and the impact of the risk are given.

II. Software Documentation

Documentation such as Project Charter, Business Requirement Document, Functional Specification document, Cost Benefit Analysis, Technical Specification document, Detail Design Document, Test Plan, Implementation Plan, Detailed Project Report, and Benefit Realization document.

III. Project Support Functions

All project support documents will be completed in applicable phases.

5. Work Elements, Schedule, and Budget

- I. The project is accounted for project resources, technologies and tools required to whole analysis, implementation, and test of the application.
- II. The project lead will be rotated for each phase within 5 team members.
- III. The document for all phases will be revised in subsequent phases if applicable.

Budget and Resource Allocation

Salary	70,000.00
Office Operations/Supplies/Equipment/Consumables	20,000.00
Miscellaneous	<u>10,000.00</u>
Total	Rs. 100,000.00

Schedule

		Name	Duration	Start	Finish	Predecessors
1		Project Initialization	17 days	01/08/25, 8:00am	25/08/25, 5:00pm	
2		Requirement Gathering	5 days	01/08/25, 8:00am	07/08/25, 5:00pm	
3		Feasibility Study	7 days	08/08/25, 8:00am	18/08/25, 5:00pm	2
4		Requirement Analysis	5 days	19/08/25, 8:00am	25/08/25, 5:00pm	3
5		System Analysis & Design	16 days	26/08/25, 8:00am	16/09/25, 5:00pm	
6		DFD Making	9 days	26/08/25, 8:00am	05/09/25, 5:00pm	4
7		FP & COCOMO Estimation	7 days	08/09/25, 8:00am	16/09/25, 5:00pm	6
8		Coding & Implementation	28 days	17/09/25, 8:00am	24/10/25, 5:00pm	
9		Front End Coding	19 days	17/09/25, 8:00am	13/10/25, 5:00pm	7
10		Database Modeling	9 days	14/10/25, 8:00am	24/10/25, 5:00pm	9
11		Testing	11 days	27/10/25, 8:00am	10/11/25, 5:00pm	10
12		Final Documentation	4 days	11/11/25, 8:00am	14/11/25, 5:00pm	11
13		Project Presentation	1 day	18/11/25, 8:00am	18/11/25, 5:00pm	12