PES UNIVERSITY, BANGALORE
Department of Computer Science and Engineering
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UE22CS341A - Software Engineering

PROJECT PLAN DOCUMENT

MEDICINE SUPPLY MANAGEMENT SYSTEM

Team #: 12

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Life-cycle followed

An Agile Lifecycle is a suitable approach due to its flexibility, iterative nature, and ability to adapt to changing requirements. Let's justify this choice using the degree of certainty characteristics product, process, and resources

1. Product

- **Uncertainty in Product Requirements**: In the healthcare domain, requirements can evolve frequently due to regulatory changes, new medical protocols, or stakeholder demands (such as pharmacists and suppliers). Agile's flexibility allows for continuous feedback and improvement, making it easy to accommodate these changes.
- **Incremental Delivery**: The MSMS can be developed in iterations, with each sprint delivering functional modules (e.g., inventory tracking, order processing, etc.). This allows for early releases of a Minimum Viable Product (MVP) and the incorporation of feedback at each stage, reducing the risk of delivering an outdated or ineffective solution.

2. Process

- **High Process Flexibility**: Agile's iterative approach allows the project team to modify processes as they gain better understanding of requirements. In the case of MSMS, where the processes might evolve with new health regulations or distribution models, Agile enables the project team to adapt quickly.
- **Complexity Management**: The MSMS involves managing several interrelated processes (e.g., inventory control, supplier management, etc.). Agile breaks these complex processes into smaller, manageable chunks, allowing the team to focus on delivering working software at each iteration while minimizing risks.

3. Resources

- **Constant Pair Programming**: XP relies heavily on pair programming, where two developers work together on the same code. This ensures high code quality and constant peer review, reducing the number of errors and leading to better software for the MSMS. In a critical system like this, where the availability and accuracy of medicine supplies can have life-or-death implications, XP's pair programming method significantly reduces the chances of bugs or system failures.
- **Adaptability to Changing Resources**: Since XP operates in short iterations, teams can adapt quickly to changes in resources. If the team size increases or decreases due to shifting project requirements, XP's iterative cycles allow for smooth transitions. In an MSMS, where changes in personnel or expertise may occur due to the involvement of various healthcare professionals, XP's ability to adjust its workflow means the project can continue without disruption.

Tools Used for this Project

Planning tools: Jira

Design tools: Figma

Version Control: GitHub

Development tools: Python, HTML, CSS, PostgreSQL, XAMPP

Bug Tracking: Jira

Testing tools: Selenium, Postman

Deliverables classified as reuse/build components

1. User Interface Components

- **Deliverable**: Web UI for Pharmacy Dashboard
- **Category**: **Build Component**
- **Justification**: While some UI design patterns and frameworks may be reusable, the specific interface for a Medicine Supply Management System requires customization to meet unique requirements such as regulatory compliance, user workflows, and healthcare-specific functionality.

2. Product

- **Deliverables**:
    - Product management module.
- **Category**: **Build Component**
- **Justification**: The specific attributes and behaviors of products in the healthcare domain may vary, requiring a custom solution to handle various product types and categories that meet industry-specific needs.

3. Medicine

- **Deliverables**:
    - Inventory tracking and expiry alert system for medicines.
- **Category**: **Build Component**
- **Justification**: Medicines require specialized tracking features, such as batch and expiry date management, and strict regulatory compliance (e.g., FDA or WHO guidelines). These are unique to healthcare, requiring a custom build.

4. Supplier

- **Deliverables**:
    - Supplier management module (track supplier details, order histories).
- **Category**: **Reusable Component**
- **Justification**: Supplier management systems are widely used across different industries (e.g., retail, manufacturing), and generic supplier management modules can be reused with minor adaptations.

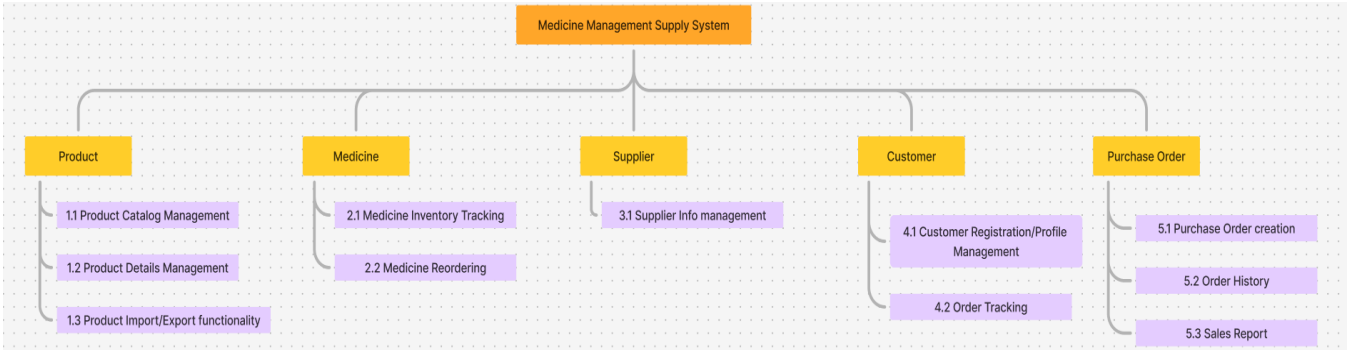
5. Customer Entity

- **Deliverables**:
    - Customer management module (tracking customer details).
- **Category**: **Reusable Component**
- **Justification**: Customer management features are generic and can be reused across various industries, especially in systems that manage order processing and relationships.

6. Purchase Order Entity

- **Deliverables**:
    - Purchase order processing module.
    - Database schema for purchase order details.
- **Category**: **Build Component**
- **Justification**: While the core logic of order processing may be similar to other domains, healthcare systems often require special handling (e.g., priority based on medical urgency, regulatory reporting), making this component partially custom-built.

Work Breakdown Structure



Effort Estimation (in person-months)

1 person-month = 21.66 working days 7 full working days = 7\21.667 = 0.323 person-months Total team effort for 2 people over 2 months = 2 people × 2 months = 4 person-months Project size = 1 KLOC (1000 lines of code)

Gantt Chart