**Web-based Ordering & Ingredient Estimating for Bakery Manufacturer**

Project Management Plan

By

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**Mr.Phudinan Singkhamfu**

**Document History**

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| --- | --- | --- | --- | --- | --- | --- |
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# **Chapter One | Introduction**

Project Name: Web-based Ordering & Ingredient Estimating for Bakery Manufacturer

As a result of a quantity demand, the Phungnoi bakery manufacturer becomes a primary source among wholesalers. Some of the bakery manufacturers have a lot of wholesaler and orders, for example, many branches ordering a fresh bakery products more than ten thousand baths. These leads to the problems that the bakery manufacturer cannot manage the internal information efficiently because of a many factors such as a time, communication, worker, and system. So we have an idea to create a new system that able to manage information efficiently and provide convenient order process on the wholesale side. Then also helps the manufacturer control their ingredient usage in each manufacturing time. This system will make the managing process more reliable and conveniently. The system provides a controlling system function such as an order system, product system, user management system, ingredient management system, ingredient estimation, and report system.

## 1.1 Identification

This document is the software project management plan, which described the process of the Web-based Ordering & Ingredient Estimating for Bakery Manufacturer. This document included planning, scheduling, activities, evaluating overall of the project and the risk that may possible for managing the software process activities.

## 1.2 Scope

The Web-based Ordering & Ingredient Estimating for Bakery Manufacturer is a management system that helps the admin can manage manufacture’s information efficiency. Then the system helps the wholesaler to manage their order easier, and the worker also can apply ingredient usage’s information with a traditional workflow. The project focuses on the implementation of the general order system and supports the process of the manufacturer system. The objective of this project is to develop a management system that apply to the Phungnoi bakery manufacturer for controlling information’s correction and ingredient usage standards. An another objective is to develop a system that support ordering conveniently for the Phungnoi bakery’s wholesalers.

## 1.3 Document Overview

The purpose of the Web-based Ordering & Ingredient Estimating for Bakery Manufacturer development plan is to guide the developer while developing the system. This project has developed in the process of making the project and all documents, according to the software quality assurance. In this project will use the ISO29110 standard that suit with very small entity.

## 1.4 Objective

Firstly, the implement a software management system that would include many management features are user management system, product system, order system, ingredient management system, ingredient estimation, and report system.

A second objective is to develop the web-based online ordering for the wholesalers. This objective is to provide order system and other services to support the wholesale side.

A third objective is to develop an ingredient estimation function for control an ingredient usage, budget, and standard of the bakery manufacturer.

Where the last objective is to study the iterative development process and adapt the software engineering methodologies knowledge that we have learned from the previous courses for the senior project.

## 1.5 Work Products to be Develop

### 1.5.1 Deliverables and Delivery Instruction

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Deliverable** | **Media** | **No. of Copies** | **Date** |
| 1 | The Project Proposal | Document | 3 | 16 June 2015 |
| 2 | The Progress Report I   * Project Plan V.1.0 * Web-based Ordering & Ingredient Estimating for Bakery Manufacturer Web Application V.1.0   **Progress I**: Web-based Ordering & Ingredient Estimating for Bakery Manufacturer web application provides user management system and product system functions  Features   * Login to web application * Logout from web application * Add a user details;   - username  - password  - first name  - last name  - phone number  - address  - profile picture   * View members details;   - user ID  - username  - telephone number  - address  - profile picture  - last sign in date  - create date   * Edit members details;   - username  - password  - first name  - last name  - phone number  - address  - profile picture   * Delete an existing member * Search a member details;   - user ID  - username  - first name   * Add bakery product details;   - product name  - price  - category  - product picture  - description   * Edit existing bakery product details;   - product name  - price  - category  - product picture  - description   * View existing bakery product details;   - product ID  - product name  - price  - category  - product picture  - information   * Delete an existing bakery product * Search a bakery product details;   - product ID  - product name  - price  - category | Document  Software | 1  1 | 17 March 2015  17 March 2015 |
| 3 | The Progress Report II   * Project Management Plan V.2.0 * Web-based Ordering & Ingredient Estimating for Bakery Manufacturer Web Application V.2.0   **Progress II**: Web-based Ordering & Ingredient Estimating for Bakery Manufacturer web application provides order system and ingredient management system functions  Features   * Order a bakery product to a product cart * Edit current order’s details on time * Delete current order’s details on time * Select to repeat a previous order’s details * Save unfinished a product cart and return to continue later * View all bakery product list in each order * View total price and discount of each order * Send finished a product cart to the ordering process * View current order list;   - order ID  - username  - first name  - last name  - order date  - delivery date  - order status   * View current order details;   - product picture  - order date  - delivery date  - product name  - product quantity  - total price  - price  - discount  - order status   * Calculate a total number of a bakery product in daily order * Search an ordered history;   - product name  - order status  - order date  - delivery date   * View ordered history list;   - order ID  - username  - first name  - last name  - delivery date  - order date  - order status   * View ordered history details   - username  - order date  - delivery date  - product name  - product quantity  - product quantity   * Mark progressive of an order status during the order in the stage * View progress of an order status during the order in an action stage * Add ingredient information;   - ingredient name  - ingredient picture  - category   * View ingredient information;   - ingredient ID  - ingredient name  - ingredient picture  - category   * Edit ingredient information;   - ingredient name  - ingredient picture  - category   * Delete an existing ingredient * Search ingredient information;   - ingredient name  - category | Document  Software | 1  1 | 30 April 2015  30 April 2015 |
| 4 | The Final Progress Report   * Project Management Plan V.3.0 * Web-based Ordering & Ingredient Estimating for Bakery Manufacturer Web Application V.3.0   **Final Progress**: Web-based Ordering & Ingredient Estimating for Bakery Manufacturer web application provides ingredient estimation system and report system functions  Features   * Add menu recipe details;   - product ID  - product picture  - ingredient picture  - ingredient name  - ingredient name  - ingredient quantity  - units   * View menu recipe list   - product ID  - product name  - product picture  - category  - price   * View menu recipe details;   - product ID  - product picture  - ingredient picture  - ingredient name  - ingredient name  - ingredient quantity  - units   * Edit menu recipe details;   - product ID  - product picture  - ingredient picture  - ingredient name  - ingredient name  - ingredient quantity  - units   * Delete an existing menu recipe * Search a menu recipe details;   - product ID  - product name  - ingredient name   * Calculate an ingredient estimation result * Choose a period to estimating ingredient usage follow a time. * View ingredient usage information;   - ingredient name  - ingredient quantity  - delivery date period   * Make a document report * View content in a text report * Save and print text report as a PDF file format * View a chart from related statistical data by year * View a statistical data;   - chart image  - statistical description   * Save and print a summary chart as a PDF file format   Documentation   * Software Requirement Specification Document V.3.0 * Software Design Document V.3.0 * Software Test Plan Document V.3.0 * Software Test Record V.3.0 * Traceability Record V.3.0 * Project Status Report V.3.0 | Document  Software  Document  Document  Document  Document  Document  Document | 4  1  4  4  4  4  4  4 | 02 July 2015  02 July 2015  02 July 2015 |

### 1.5.2 Non-Deliverables

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Non-Deliverable** | **Media** | **No. of Copies** | **Date** |
| 1 | 30 Seconds Video Presentation | File | 1 | 17 September 2014 |
| 2 | Abstract 150 words | File | 1 | 17 September 2014 |
| 3 | Poster Presentation | Poster | 1 | 18 September 2014 |

## 1.6 Acronyms and Definitions

### 1.6.1 Acronyms

SRS Software Requirement Specification

URS User Requirement Specification

SDD Software Design Document

OS Operation System

VSE Very Small Entity

PMP Project Management Plan

SI Software Implementation

IDP Iterative Development Process

SCI Software Configuration Item

SCM Software Configuration Management

SQA Software Quality Assurance

AD Activity Diagram

UC Use Case

IEEE Institute of Electrical and Electronics Engineers

RTM Requirement Traceability Matrix

UI User Interface

UTR Unit Testing Record

STR System Testing Record

### 1.6.2 Definitions

Feature Transformation of input parameters to output parameters based on a specified algorithm. It describes the functionality of the product in the language of the product. Used for requirements analysis, design, coding, testing or maintenance. [1] [IEEE90]

IEEE Institute of Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and computer scientists. [1] [IEEE90]

Plan A documented series of tasks requires meeting and objective, typically including the associated schedule, budget, resources, organizational description and work breakdown structure. [IEEE90]

Project Management The application of knowledge, skills, tools, and techniques to project activities to meet or exceed stakeholder needs and expectations from a project. [2]  [IEEE90]

Project Plan A formal approved document used to guide both project execution and project control. The primary uses of the project plan are to document planning assumptions and the decision to facilitate communication among stakeholders, and to document approved scope, cost, and schedule baseline.[IEEE90]

Risk Management The systematic application of management policies, procedures and practices to the tasks of identifying, analyzing, evaluating treating and monitoring risk. [3] [IEEE90]

Validation Confirmation by examination and provision of objective evidence that the particular requirements for a specified intended use fulfilled. Part of quality control. [4] [IEEE90]

Verification Confirmation at the end of the process by examination and provision of objective evidence that specified requirements to the process has fulfilled. Part of quality control.[IEEE90]

Traceability The ability to trace the history, application or location of an item or activity, or work products or activities, using recorded identification. The establishment and maintenance of relationships between such things. Horizontal traceability describes the relationship between work products of the same type (e.g., customer requirements). Vertical traceability describes the relationship between work products which build upon each other or derived from each other (e.g., from customer requirements to qualification test cases). Bidirectional reliability allows to directly following relationship in both directions. [1] [IEEE90]

Configuration Management A was discipline applying technical and administrative direction and surveillance to: identify and document the functional and physical characteristics of a configuration item, control change processing implementation status, and verify compliance with specified requirements. [5] [IEEE90]

Design The period the software life cycle during which the design for architecture, software components, interfaces, and design created, documented and verified to satisfy the requirement. [IEEE90]

Implementation The period the software life cycle during which a software product is creating documentation and debugged. [IEEE90]

Work Product Any tangible item that resulting from a project function, activity, or task. Examples of work products include customer requirement, project plan, design documents, source, and object code, user’s manuals.

Software Computer programs, procedures, and associated documentation and data about the operation of a computer system. [6] [IEEE90]

Software Engineering The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software. [7] [IEEE90]

Quality Assurance (1) A planned and systematic pattern of all actions necessary to provide adequate confidence that an item or product conforms to established technical requirement. [8] [IEEE90]

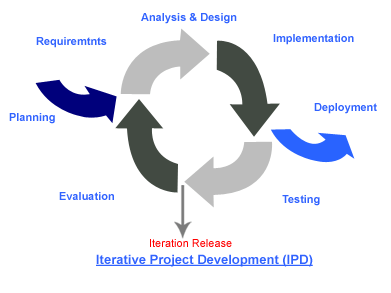
(2) A set of activities designed to evaluate the process by which producers developed or manufactured. [9] [IEEE90]

# **Chapter Two | Infrastructure**

## Software Development Life Cycle

The Iterative process model is iterating on steps as the project development with requirements. The iterative model iterates Requirement, Design, Development (Implement), Test phases, and Deployment (Evaluate, Feedback). Each of requirement and builds up the quality until complete. The advantage of the iterative model is building and improving the product step by step. Thus, a developer can track the defects at early stages and avoid the flow of defects.

The Web-based Ordering & Ingredient Estimating for Bakery Manufacturer project using iterative development process because it does not attempt to start with a full specification of requirements. We needed to develop the iterative way to review and improve the software and its documents for each development progress until it has finished.



**Figure 1: Iterative Development Model [10]**

## Software Acquisition Plans

### 2.2.1 Design Tools

* Smart Draw 2013
* Visual Paradigm for UML 12.1
* Paint
* Snipping Tool

### 2.2.2 Development Tools

* Microsoft SQL Server Management Studio
* Microsoft Visual Studio Ultimate
* Tortoise SVN
* Microsoft Internet Information Service

### 2.2.3 Configuration Management Tools

* Github
* Google Chrome
* Firefox

### 2.2.4 Document Tools

* Microsoft Office Word
* Microsoft Office PowerPoint
* Microsoft Office Excel
* Notepad ++
* Adobe Reader 9

### 2.2.5 Operating System

* Windows 7, Window 8

## 2.3 Hardware and Material Resources

* Computers
* **Name:** Sony VAIO-VAIO

**Processor:** Intel® Pentium® Processor T4300 (2.10 GHz)

**Memory:** 2.00 GB

**Graphics:** Intel® Graphics Media Accelerator HD

**Operating System:** Window® 7 Home Basic (64-bit)

* **Name:** Sony VAIO

**Processor:** Intel® Core (TM) I3-3120M (2.5 GHz)

**Memory:** 4.00 GB

**Graphics:** Radeon Graphics System

**Operating System:** Window® 8 Based Processor (64-bit)

# **Chapter Three | Management Procedures**

## 3.1 Project Team Structure

|  |  |  |
| --- | --- | --- |
| **No.** | **Participants** | **Roles** |
| 1 | Miss. Nontra Nonsee | Development Team Member |
| 2 | Mr. Parinya Panyanak | Development Team Member |
| 3 | Aj. Phudinan Singkhamfu | Project Advisor |

## 3.2 Project Responsibility

|  |  |  |
| --- | --- | --- |
| **No.** | **Participants** | **Responsibility** |
| 1 | Miss. Nontra Nonsee | Feasibility Study |
| All members | Project Proposal |
| Miss. Nontra Nonsee | Project Requirements Specification |
| Miss. Nontra Nonsee | Project Management Plan |
| Mr. Parinya Panyanak | Project Software Design Document |
| Mr. Parinya Panyanak | Implementation |
| Mr. Parinya Panyanak | Software Test Report Document |
| 2 | Aj. Phudinan Singkhamfu | Review Document |
| Approve The Document |
| Approve Change Document |

## 3.3 Change Management

Change Management manages all of the changes in the project during the development process. All of the change requests will be recording into the change management document.

We have a strategy for managing the changes by following these rules:

* We will create requirement traceability to trace change document.
* We will specify a version of each document.
* We will determine the baseline document version.
* The changes must be approving the change request by the project advisor.

# **Chapter Four | Quality Standard**

## 4.1 ISO29110 for Very Small Entity (VSE)

ISO29110 is a guide applies to a Very Small Entity (VSE), enterprise, organisation, department or project up to 25 people, dedicated to software development. The Guide provides Project Management and Software Implementation processes. It integrate practices based on the selection of ISO/IEC 12207- *Systems and Software Engineering —Software Life Cycle Processes* and ISO/IEC 15289 - *Software Engineering – Software Life Cycle Process – guidelines for the content of software life cycle process information products (documentation)* standards elements. [11]

### 4.1.1 Project Management Process

The purpose of the Project Management Process is to improve the success rate of projects in all areas of knowledge, which allows complying with the project’s objectives in the expected quality, time and cost. [12]

**Activities**

* Project Planning Process
* Project Plan Execution Process
* Project Assessment and Control Process
* Project Closer Process

### 4.1.2 Software Implementation Process

The purpose of the Software Implementation process is the systematic performance of the analysis, design, construction, integration and tests activities for new or modified software products according to the specified requirements. [13]

**Activities**

* Software Implementation Initiation Process
* Software Requirements Analysis Process
* Software Architectural Design Process
* Software Construction Process
* Software Integration and Test Process
* Software Delivery Process

# **Chapter Five | Quality Planning**

## 5.1 Reviews/Responsibility

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Stage Exit Review** | | | | |
| **No.** | **Stage** | **Review Item** | **Responsibility** | **Reviewer** |
| 1 | Project Planning | Project Management Plan | NN | All members  Advisor |
| 2 | Requirements Specification | Project Proposal | All members | All members  Advisor |
| Software Requirement Specification | NN | All members  Advisor |
| 3 | Architecture and Detailed Design | Software Design Document | PP | All members  Advisor |
| 4 | Development | Implementation | PP | All members  Advisor |
| Unit Test Report | PP | All members  Advisor |
| 5 | Software Testing | System Test Report | PP | All members  Advisor |
| 6 | Project Monitoring and Control | Traceability Record | NN | All members  Advisor |
| Project Status Report | NN | All members  Advisor |
| Change Request | NN | All members  Advisor |

## 5.3 Testing

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Process** | | | |
| **No.** | **Test** | **Verification** | **Responsibility** |
| 1 | Unit Testing | All members  Advisor | Parinya Panyanak |
| 2 | System Testing | All members  Advisor | Parinya Panyanak |

# **Chapter Six | Schedule and Milestones**

## 6.1 Project Schedule

According from Figure 2 to Figure 12 was show the schedule and milestones of the Web-based Ordering & Ingredient Estimating for Bakery Manufacturer. During a period, there are work terminologies. And the description is shown below that:

* **Feature#1:** User Management System

**-** The admin can activate a user.

**-** The admin can manage a user details by provides the username, password, first name, last name, phone number, address, and picture.

**-** The admin can display a user list.

**-** The admin can view a user details consist of the user ID, username, telephone number, address, profile picture, create date, and last sign in date.

- The member can sign in to the system.

**-** The admin can search a member details by the user ID, username, and first name.

- The member can logout from the system.

- The member can update a personal profile.

- The member can display own personal details consist of the user ID, username, telephone number, address, profile picture, create date, and last sign in date.

- The member can view own personal details consist of the user ID, username, telephone number, address, profile picture, create date, and last sign in date.

- An application provides a user management system.

* An application provides a validation message when the error occurs.

- An application provides a member details consist of the user ID, username, telephone number, address, profile picture, create date, and last sign in date.

* **Feature#2:** Product System

- The admin can manage a product details by provides the product name, product picture, category, description, and price.

- The admin can display a bakery product list such as the product ID, product name, category, product picture, and price.

- The admin can display a bakery product details consist of the product name, category, information, product picture and price.

- The member can search a bakery product details by the product ID, product name, category, and price.

- The member can view a bakery product list such as the product ID, product name, category, product picture, and price.

- The member can view a bakery product details consist of the product name, category, information, product picture and price.

- An application provides a product management system.

* An application provides a validation message when the error occurs.

- An application provides a product information consist of the product name, category, information, product picture and price.

* **Feature#3:** Order System

- The wholesaler can order a bakery product and manage them on the time constraint.

- The wholesaler can save unfinished product cart. Then the wholesaler can return to continue their order later.

- The wholesaler can make an order by repeat ordered history information.

- The wholesaler can view a bakery product list at the summary order cart.

- The wholesaler can view the total price and discount from orders.

- The wholesaler can send a finished product cart to the system.

* The worker can view current an order details consist of the product picture, product name, quantity, price, total price, discount, delivery date, and order status.
* An application provides the current order details consist of the product picture, product name, quantity, price, total price, discount, delivery date, and order status.
* The worker can know the real-time orders.

- The worker can mark a progressive of order status in each work stage.

- The wholesaler can view own order status while an order in an action stage.

- An application provides an order management system.

* An application provides a validation message when the error occurs.

- An application provides an order details consist of the username, order date, delivery date, product picture, product name, and quantity.

* The wholesaler can search the own ordered history by the filter keywords of the order date, delivery date, product name, and order status.
* The wholesaler can view the own order history list such as the order ID, order status, product picture, order date and delivery date.
* The wholesaler can view the own order history information consist of the order ID, product name, product picture, quantity, delivery date, order date, price, total price, discount, and order status.
* The worker can search all order history by the filter keywords of the username, first name, order date, and delivery date.
* The worker can view all order history such as the username, first name, last name, order status, order date, and delivery date.
* The worker can view all order history information consist of the order ID, username, first name, last name, product name, quantity, delivery date, order date, and order status.
* **Feature#4:** Ingredient Management System
* The admin can manage ingredient details by provides the ingredient name, category, and ingredient picture.
* The admin can search ingredient details by the filter keywords of the ingredient name, and category.
* The admin can view an ingredient details consist of the ingredient ID, ingredient name, category, and ingredient picture.
* An application provides an ingredient management system.
* An application provides a validation message when the error occurs.
* An application provides an ingredient details consist of the ingredient ID, ingredient name, category, and ingredient picture.
* **Feature#5:** Ingredient Estimation
* The admin can manage a menu recipe information by provides the ingredient name, quantity, and unit.
* The admin can search menu recipe information by the filter keywords of the product name, category, price, and ingredient name.
* The admin can view all product list.
* The admin can view a menu recipe information consist of the ingredient ID, ingredient picture, ingredient name, and category.
* An application provides a validation message when the error occurs.
* An application provides a menu recipe information consist of the ingredient ID, ingredient name, quantity, and unit.
* An application provides an ingredient estimation function.
* The worker can choose a period at a start to end for processing ingredient estimation result.
* The worker can view ingredient estimation result consist of the ingredient name, quantity, and chart.
* **Feature#6:** Report System
* The wholesaler and worker can create a report according their permission.
* The wholesaler and worker can view the report contents.
* The wholesaler and worker can save and print a report as a PDF file format.
* An application provides a report system.
* The wholesaler and worker can view a chart by choosing the filter keywords of the period.
* The wholesaler and worker can view a chart by choosing the year to show the statistical in each month.
* The wholesaler and worker can view a chart by choosing the filter keywords of the period.
* The wholesaler and worker can view a result chart consist of the chart image and statistical data.
* An application provides convert function from the existing statistical data to be a chart.



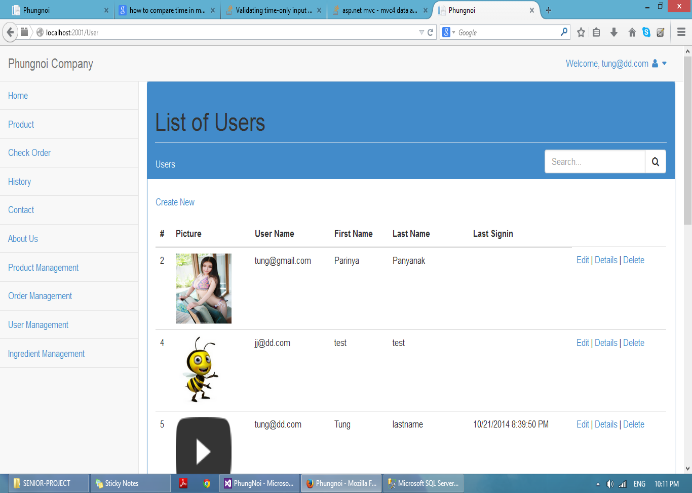
**Figure 2: Proposal Milestone**

As shown in figure 2, There are the details of each task that our have done with the documentation that represent the form of a start date, end date, and duration.

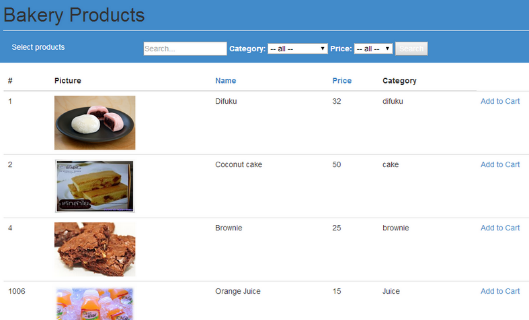


**Figure 3: Progress Report I Milestone**

As shown in figure 3, We will start develop the feature#1 and #2. We will also begin to do the development plan, quality plan, software requirement specification, software design, test plan, test record, and traceability record. It is representing the form of a start date, end date, and duration.

 **Figure 4: User Management System Example**

As shown in figure 4, it is an example of member list page in a first feature is a user management system.

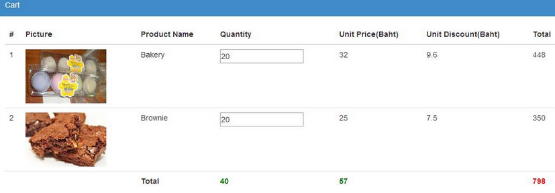
 **Figure 5: Product System Example**

As shown in figure 5, it is an example of a bakery product page in a second feature is a product system.

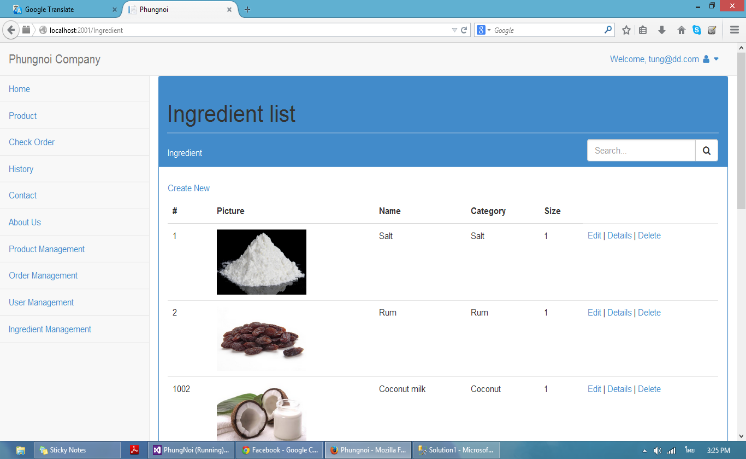


**Figure 6: Progress Report II Milestone**

As shown in figure 6, We will start develop the feature#3 and #4. We will also begin to do the development plan, quality plan, software requirement specification, software design, test plan, test record, and traceability record. It is representing the form of a start date, end date, and duration.

  **Figure 7: Order System Example**

As shown in figure 7, it is an example of product cart page in a third feature is an order system.



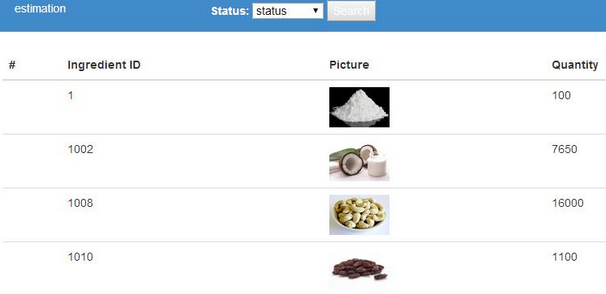
**Figure 8: Ingredient Management System Example**

As shown in figure 8, it is an example of an ingredient list page in a fourth feature is an ingredient management system.

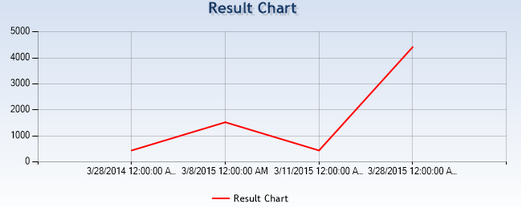


**Figure 9: Final Progress Report Milestone**

As shown in figure 9, We will start develop the feature#5 and #6. We will also begin to do the development plan, quality plan, software requirement specification, software design, test plan, test record, and traceability record. It is representing by form of a start date, end date, and duration.

**Figure 10: Ingredient Estimation Example** 

As shown in figure 10, it is an example of an ingredient estimation page in a fifth feature is an ingredient estimation system.

 **Figure 11: Report System Example**

As shown in figure 11, it is an example of a chart page in a sixth feature is a report system.



**Figure 12: Publication Milestone**

As shown in figure 12, We will start to update the development and deployment that represent the form of a start date, end date, and duration.

# **Chapter Seven | Software Configuration Management**

## 7.1 Software Configuration Management

The Software Configuration Management is a set of activitie designed. It controls a change by identifying the work products that are likely to change, establishing relationships among them. It can be defining mechanisms for managing different versions of these work products, controlling the changes imposed, adding, and reporting on the changes made. In other words, SCM is a methodology to control and manage software development project. [14]

## 7.2 Filename Format

For the filename format that we using for all project document is: [Project name]-[Document name]\_[Version].file type

## 7.3 Project Repository

D:\Senior Project

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Item name** | **File name** | **File Type** | **Owner (Role)** | **Repository (Path)** | **Baseline Version** |
| 1 | Project Proposal | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – Project Proposal\_V.1.4 | .docx | PP, NN | D:\Senior Project\Project Proposal\Docx\Project Proposal | 1.4 |
| 2 | Project Management Plan | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – PMP\_V.3.0 | .docx | PP, NN | D:\Senior Project\Project Final\Docx\PMP | 3.0 |
| 3 | Software Requirement Specification | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – SRS\_V.3.0 | .docx | PP, NN | D:\Senior Project\Project Final\Docx\SRS | 3.0 |
| 4 | Software Design Document | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – SDD\_V.3.0 | .docx | PP, NN | D:\Senior Project\Project Final\Docx\SDD | 3.0 |
| 5 | Software Test Plan Document | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – Test Plan\_V.3.0 | .docx | PP, NN | D:\Senior Project\Project Final\Docx\Test Plan | 3.0 |
| 6 | Software Test Record | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – Test Record\_V.3.0 | .docx | PP, NN | D:\Senior Project\Project Final\Docx\Test Record | 3.0 |
| 7 | Traceability Record | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – TR\_V.3.0 | .docx | PP, NM | D:\Senior Project\Project Final\Docx\TR | 3.0 |
| 8 | 30 Seconds Video Presentation | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – VDO\_V.1.0 | .mp4 | PP, NN | D:\Senior Project\Show Pro\VDO | 1.0 |
| 9 | Poster Size A1 | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – Poster\_V.1.0 | .png | PP, NN | D:\Senior Project\Show Pro\Poster | 1.0 |
| 10 | Software Product | Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – Software\_V.3.0 | .zip | PP, NN | D:\Senior Project\Project Final\Product | 3.0 |

## 7.4 Software Configuration Item Table

# **Chapter Eight | Risk Management**

The risk management is concern with identifying risks and drawing up plans to minimize their effect on the project.

A risk is probability that some adverse circumstance will occur. [15]

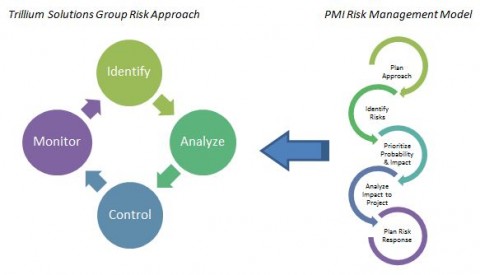
- Project risks affect schedule or resources.

- Product risks affect the quality or performance of the software being developed.

- Business risks affect the project team during developing or procuring the software.

Identified risks at the start of the project and the beginning of the development phase. All identified risks are documented and assessed in the Risk Management Process by the Project Development Team. In the Risk Management Process defines the possible risks, a solution of them, and who responsible.

## 8.1 Risk Management Process



**Figure 13: Risk Management Process Model [16]**

1. Risk identify: identify the project, product, and business risks.

2. Risk analyze: Assess the likelihood and consequences of the risks.

3. Risk controlling: Draw up plans to avoid or minimize the effects of the risks.

4. Risk monitoring: Monitor the risks throughout the project.

## 8.2 Risk Identification and Solutions

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Risk Statement** | **Risk Solution** | **Priority** |
| 1 | The requirements might be changed. | * Meeting and discuss the impact of the changed requirements with the team member and project advisor. * Design system which changed requirements and related with the other requirements. * Use software configuration management and follow change management step. | High |
| 2 | During the implementing, the internet maybe out of order or slow. | * Change the working place. | Medium |
| 3 | The deliverables maybe delay. | * Try to study harder than previous work. * Ask a professional to make faster understand. * Try to follow the schedule and milestone. | High |
| 4 | Team member maybe get engaged and can’t develop the project. | * Assign work to left team member who doesn’t get involved. | Low |
| 5 | The budget for developing may not enough. | * Ask for more budgets from the project advisor. | Low |
| 6 | Work products not submitted on time. | * Establish the project plan. * Develop project follow the project plan. | High |
| 7 | Work products are not traceable. | * Create the traceability record. | Medium |
| 8 | Team member lack skill and knowledge. | * Team member is tutoring implementation. * Ask for assistance and support from textbooks, websites, an experienced developer, and advisor. | High |
| 9 | Ambiguous responsibility. | * Always discuss the work together. | Medium |
| 10 | Team member misunderstands system work. | * The member’s review system before development phase and use diagram to explain system working. | High |
| 11 | Human resource not enough. | * Planning schedule and hard working. | Medium |
| 12 | Unfamiliar with a testing process. | * Studying test technique during the test design. | Medium |
| 13 | The computer crash. | * Always save all file in Github repository. | Medium |
| 14 | Bad communication between team members | * Try to understand each other and exchange more information together. | Medium |

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