Web-based Ordering & Ingredient Estimating for Bakery Manufacturer

Project Management Plan

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Document History

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*NM = Nontra Mahachanont

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Chapter One | Introduction

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

As a result of quantity demand, bakery manufacturer becomes an important source among wholesalers. Some bakery manufacturer has many wholesalers and orders, for example, many branches ordered bakery products more than ten thousand baths. This leads to the problems that the bakery manufacturer cannot manage or handle the information easily because of many factors such as time, communication and system. So we have an idea to create a new system that able to manage information easily and provide convenient order process for the wholesale side. These will make the managing process become more reliable and convenient because the system provides managing system function such as manage order, manage bakery product detail, manage member, manage bakery ingredient detail, estimate ingredient usage, record history and convert to graph.

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

Web-based Ordering & Ingredient Estimating for Bakery Manufacturer is a management system that helps the admin to manage ordering information and estimate ingredient usage. Then the system also helps the wholesaler to manage order and record ordered history. The project focuses on implementation of general order management system. The objective of this project is to develop management system that used with bakery manufacturer. Another objective is to develop a system that support web-based ordering for wholesaler.

1.3 Document Overview

The purpose of the Web-based Ordering & Ingredient Estimating for Bakery Manufacturer development plan is to guide the developer while develop the system. This project has been developed with 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.

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1.4 Objective

Firstly, the implement a software management system which would be include many management features, such as member management, product management, order management, ingredient estimation, report management and etc.

Second objective is to develop web-base online ordering for wholesale. This objective is to provide member management system and other service support wholesale side.

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

1.5 Work Products to be Develop

1.5.1 Deliverables and Delivery Instruction

No.	Deliverable	Media	No. of Copies	Date
1	 The Progress Report II Project Management Plan V.2.0 Web-based Ordering & Ingredient Estimating for Bakery Manufacturer Web 	Document Software	3	
	Progress II: Web-based Ordering & Ingredient Estimating for Bakery Manufacturer web application provides order management system and ingredient management system functions Features Select existing bakery product to product list Edit bakery product in current order's information Remove bakery product from current order's information Select repeat previous order information Save unfinished product list of order and return to continue later View all bakery product list in each order View total price of each order Send finished order form View successful order notification Search order information; - wholesaler ID - wholesaler name	Software		22 October 2014

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	<u> </u>		
- delivery date			
bakery product IDbakery product name			
- category			
View order information			
- wholesaler ID			
- wholesaler name			
- delivery date			
- bakery product list			
- bakery product quantity			
- total price of the order			
- discount of order			
Mark progressive of order status while the			
order in the preparation stage			
View progress order status while the order			
in the preparation stage			
Add ingredient information;			
- ingredient id			
- ingredient name			
- ingredient description			
- category			
- ingredient picture			
View ingredient information;			
- ingredient id			
ingredient nameingredient description			22.0 . 1 . 2014
- category			22 October 2014
- ingredient picture			
Edit ingredient information;			
- ingredient id			
- ingredient name			
- ingredient description			
- category			
- ingredient picture			
Remove existing ingredient			
Search ingredient information;			
- ingredient id			
- ingredient name - category			
- category			
<u>Documentation</u>			
- Software Requirement Specification	Dogwarant	2	
Document V.2.0	Document	3	
- Software Design Document V.2.0	Document	3	
- Software Test Plan Document V.2.0	Document	3	
- Software Test Record V.2.0	Document	3	
- Traceability Record V.2.0	Document	3	
- Project Status Report V.2.0	Document	3	
- Executive Summary V.2.0	Document	3	
	Document	3	

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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

SEI Software Engineering Institute

EPG Engineering Process Group

SMM Software Measurement and Metrics

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. [IEEE90]

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IEEE

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

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

Traceability

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

Validation

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

Verification

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

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Configuration Management

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

Design

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

Implementation

The period of time the software life cycle during which a software product is created from documentation and debugged. [IEEE90]

Work Product

Any tangible item that results 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 pertaining to the operation of a computer system. [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. [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. [IEEE90]
- (2) A set of activities designed to evaluate the process by which producers are developed or manufactured. [IEEE90]

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Chapter Two | Infrastructure

2.1 Software Development Life Cycle

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

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 for review and improve the software and its documents for each development progress until it has finished.

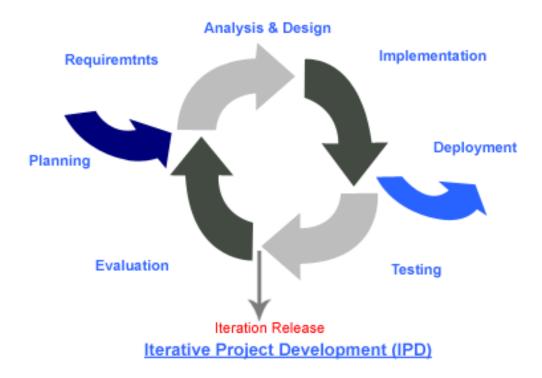


Figure 1: Iterative Development Model [1]

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2.2 Software Acquisition Plans

2.2.1 Design Tools

- Smart Draw 2013
- Visual Paradigm for UML 10.2
- Adobe Photoshop Elements 7.0
- Paint

2.2.2 Development Tools

- Microsoft SQL Server Management Studio
- Microsoft Visual Studio Ultimate
- Tortoise SVN

2.2.3 Configuration Management Tools

- Github
- Google Chrome
- Firefox

2.2.4 Document Tools

- Microsoft Office Word
- Microsoft Office PowerPoint
- Notepad ++
- Adobe Reader 9

2.2.5 Operating System

• Windows 7, Window 8

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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)

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Chapter Three | Management Procedures

3.1 Project Team Structure

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

3.2 Project Responsibility

No.	Participants	Responsibility			
	Miss. Nontra Mahachanont	Feasibility Study			
	All members	Project Proposal			
1	Miss. Nontra Mahachanont	Project Requirements Specification			
	Miss. Nontra Mahachanont	Project Plan			
	Mr. Parinya Panyanak	Project Design Document			
	Mr. Parinya Panyanak	Implementation			
	Mr. Parinya Panyanak	Test Report			
2		Review Document			
2	Aj. Phudinan Singkhamfu	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 the strategy for manage the changes by following these rules:

- Create requirement traceability to trace change document.
- Specify version of each document.
- Determine baseline document version.
- Approving the change request by project advisor.

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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 which 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.

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.

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.

Activities

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

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Chapter Five | Quality Planning

5.1 Reviews/Responsibility

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

5.2 Testing

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

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Chapter Six | Schedule and Milestones

6.1 Project Schedule

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

➤ **Feature#3:** Order Management System

- Wholesaler can order bakery product and manage them after the order has been sent. An order can select by adding, editing and removing bakery product name and bakery product quantity in their product list.
- Wholesaler can save unfinished bakery product list while they input numerous information (bakery product name and quantity) incomplete. Then wholesaler can return to continue their order later.
- Wholesaler can repeat previous order information from order history information.
- Wholesaler can view a summary of current bakery product list at the end of order information.
- Wholesaler can view the total price and discount of all bakery product list which has been ordered.
- Wholesaler can send finished order to the system.
- Wholesaler can receive confirmation notification by alert message on the screen.
- Admin can search order information by keywords of wholesaler ID, wholesaler name, delivery date, ingredient ID, ingredient name and category.
- Admin can view all order information of the wholesaler.
- Admin can mark progressive of order status while the order in the preparation stage.
- Wholesaler can view own order status in the preparation stage.
- An application provides order management system.
- An application provides order information such as bakery product ID, bakery product name, price, category and bakery product quantity.

➤ **Feature#4:** Ingredient Management System

- Admin can manage details of ingredient by provide the ingredient ID, ingredient name, ingredient description, category and ingredient picture.
- Admin can search ingredient information by keywords of ingredient ID, ingredient name and category.
- Admin can view ingredient information.
- An application provides ingredient management system.

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- An application provides ingredient information such as bakery product ID, bakery product name, category and bakery product picture.

						20	14	
	Task	Start	End	Dur	Aug	Sep	Oct	Nov
	Progress Report II	18/8/14	31/10/14	55				
1	Project Management Plan	18/8/14	2/9/14	12				
2	Software Requirement Specification	3/9/14	18/9/14	12				
3	Software Design Document	15/9/14	19/9/14	5				
3.1	Use Case Diagram Feature #3, #4	15/9/14	15/9/14	1				
3.2	Activity Diagram Feature #3, #4	17/9/14	18/9/14	2				
3.3	Sequence Diagram Feature #3, #4	18/9/14	19/9/14	2				
4	Implementation	12/9/14	17/10/14	26				
4.1	Implement Feature #3	12/9/14	29/9/14	12				
4.2	Implement Feature #4	29/9/14	17/10/14	15				
5	Test Plan Document	8/10/14	12/10/14	3				
6	Testing	19/10/14	22/10/14	3				
6.1	Test Feature #3	19/10/14	21/10/14	2				
6.2	Test Feature #4	21/10/14	22/10/14	2				
7	Trace ability Record	10/10/14	10/10/14	1				
8	Progress Report II Submission	22/10/14	22/10/14	1				
9	Progress Report II Presentation	29/10/14	31/10/14	3				

Figure 2: Progress Report II Milestone

As shown in figure 2, We will start develop the feature#3 and #4. In addition we will also start to do the development plan, quality plan, software requirement specification, software design, test plan and traceability record which represent by form of start date, end date and duration.

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Chapter Seven | Software Configuration Management

7.1 Software Configuration Management

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

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

C:\Users\VAiO\Desktop\Senior Project

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7.4 Software Configuration Item Table

No.	Item name	File name	File Type	Owner (Role)	Repository (Path)	Baseline Version
1	Project Management Plan	Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – PMP_V.2.0	.docx	PP, NM	C:\Users\VAiO\ Desktop\Senior Project\PMP	2.0
2	Software Requirement Specification	Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – SRS_V.2.0	.docx	PP, NM	C:\Users\VAiO\ Desktop\Senior Project\SRS	2.0
3	Software Design Document	Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – SDD_V.2.0	.docx	PP, NM	C:\Users\VAiO\ Desktop\Senior Project\SDD	2.0
4	Test Plan	Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – Test Plan_V.2.0	.docx	PP, NM	C:\Users\VAiO\ Desktop\Senior Project\Test Plan	2.0
5	Traceability Record	Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – TR_V.2.0	.docx	PP, NM	C:\Users\VAiO\ Desktop\Senior Project\TR	2.0
6	Software Source Code	Web-based Ordering & Ingredient Estimating for Bakery Manufacturer – Code_V.2.0	.zip	PP, NM	C:\Users\VAiO\ Desktop\Senior Project\Code	2.0

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Chapter Eight | Risk Management

Risk management is concerned with identifying risks and drawing up plans to minimize their effect on the project.

A risk is probability that some adverse circumstance will occur.

- Project risks effect 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 at the start of the development phase. All identified risks are documented and assessed in the Risk Management Process by the Project Team. In the Risk Management Process defines the possible risks and solution of them, and who is responsible for.

8.1 Risk Management Process

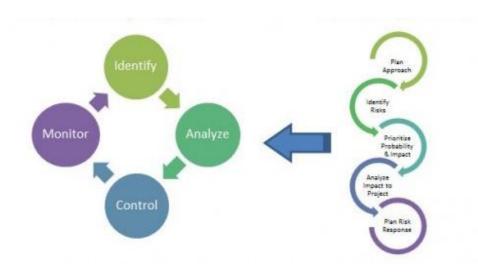


Figure 3: Risk Management Process Model [2]

- 1. Risk identify: identify 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.

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8.2 Risk Identification and Solutions

No.	Risk Statement	Risk Solution	Priority
1	The requirements might be change.	 Meeting and discuss the impact from 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 more hard 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 a work to left team member who doesn't get involved.	Low
5	Budget of developing may not enough.	• Ask for more budgets from project advisor.	Medium
6	Work products are 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, experienced developer and advisor. 	High
9	Ambiguous responsibility.	Always discuss the work together.	Medium
10	Team member misunderstand 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 testing process.	• Study testing technique during the test design.	Medium
13	The computer Crash.	• Save file in Github.	Medium
14	Bad communication between team members	• Try to understand each other and exchange more information together.	Medium

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Chapter Nine | References

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