**WIL Report Management System**

Project plan

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By

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# **Chapter One | Introduction**

## **Project Deliverables**

|  |  |  |  |
| --- | --- | --- | --- |
| **Phase** | **Documents** | **Software** | **Due Date** |
| proposal | Project proposal | - | 02/02/2017 |
| Progress I | The progress report I   * Project plan V.0.1 * Software Requirement Specification V.0.1 * Software Design V.0.1 * Test record V.0.1 * Traceability record V.0.1 | Prototype of software V.0.1 for progress I | 09/03/2017 |
| Progress II | The progress report II   * Project plan V.0.2 * Software Requirement Specification V.0.2 * Software Design V.0.2 * Test record V.0.2   Traceability record V.0.2 | Prototype of software V.0.2 for progress II | 30/03/2017 |
| Final progress | The final progress report   * Project plan V.1 * Software Requirement Specification V.1 * Software Design V.1 * Test record V.1   Traceability record V.1 | Prototype of software V.1 for the final progress | 27/04/2017 |

## **Roles and Responsibility**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Participants** | **Roles** | **Responsibility** |
| 1 | Phinthip Samutloiwon | Project manager, UI designer, Quality Assurance, Tester | Document  Create and Review  - Project Proposal  - Project Management Plan  - Software Requirement Specification  - Software Design Document  - Traceability record  Software code  - Develop  - Test |
| 2 | Veerapat In-ongkarn | Programmer, Architecture designer, UI designer, System Analysis, Technical consultant, Tester | Document  Create and Review  - Project Proposal  - Project Management Plan  - Software Requirement Specification  - Software Design Document  - Traceability record  Software code  - Develop  - Test |
| 3 | Dr. Prompong Sugunnasil | Project Advisor | Review and Approve  - Document  - Change Request |

# **Chapter Two | Managerial process plan**

## **2.1 Project estimation**

**2.1.1 Task duration estimation**

**Progress I**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Task** | **Assignee** | **Estimation (hours)** | **Start On** | **Due On** |
| 1 | Project planning | Phinthip | 8 | 03/02/2017 | 04/02/2017 |
| 2 | Requirement Analysis | Phinthip, Veerapat | 8 | 04/02/2017 | 05/02/2017 |
| 3 | SRS Documenting | Phinthip | 30 | 06/02/2017 | 16/02/2017 |
| 4 | Software design | Veerapat |  |  |  |
| 5 | Coding feature #1 (User management) | Veerapat |  |  |  |
| 6 | Coding feature #2 (Task management) | Veerapat |  |  |  |
| 7 | Test planning | Phinthip, Veerapat |  |  |  |
| 8 | Testing | Phinthip, Veerapat |  |  |  |
| 9 | Test recording | Phinthip, Veerapat |  |  |  |
| 10 | Traceability recording | Phinthip | 2 | 17/02/2017 | 17/02/2017 |
| 11 | Document reviewing | Phinthip | 15 | 25/02/2017 | 31/02/2017 |
| 12 | Presentation preparing | Phinthip | 2.5 | 07/03/2017 | 08/03/2017 |
| 13 | Presentation | Phinthip, Veerapat | 1 | 09/03/2017 | 09/03/2017 |
| Total | | |  |  |  |

**Progress II**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Task** | **Assignee** | **Estimation (hours)** | **Start On** | **Due On** |
| 1 | Project planning | Phinthip | 5 | 10/03/2017 | 11/03/2017 |
| 2 | Requirement Analysis | Phinthip, Veerapat | 20 |  |  |
| 3 | SRS Documenting | Phinthip | 25 |  |  |
| 4 | Software design | Veerapat |  |  |  |
| 5 | Software design documenting | Phinthip | 20 |  |  |
| 6 | Coding feature #3 (Progress tracking) | Veerapat |  |  |  |
| 7 | Coding feature #4 (report export) | Veerapat |  |  |  |
| 8 | Coding feature #5 (Notification) | Veerapat |  |  |  |
| 9 | Test planning | Phinthip, Veerapat |  |  |  |
| 10 | Testing | Phinthip, Veerapat |  |  |  |
| 11 | Test recording | Phinthip, Veerapat |  |  |  |
| 12 | Traceability recording | Phinthip | 1 |  |  |
| 13 | Document reviewing | Phinthip | 10 |  |  |
| 14 | Presentation preparing | Phinthip | 2.5 |  |  |
|  | Presentation | Phinthip, Veerapat | 1 |  |  |
| Total | | |  |  |  |

**Final progress**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Task** | **Assignee** | **Estimation (hours)** | **Start On** | **Due On** |
| 1 | Project planning | Phinthip | 4 |  |  |
| 2 | Reviewing SRS Document | Phinthip | 10 |  |  |
| 3 | Reviewing software design document | Phinthip | 10 |  |  |
| 4 | Integrating all features | Veerapat |  |  |  |
| 5 | Testing | Phinthip, Veerapat |  |  |  |
| 6 | Test recording | Phinthip, Veerapat |  |  |  |
| 7 | Reviewing traceability record | Phinthip | 2 |  |  |
| 8 | Document combine + review | Phinthip | 6 |  |  |
| 9 | Presentation preparing | Phinthip | 4 |  |  |
| 10 | Presentation | Phinthip, Veerapat | 1 |  |  |
| Total | | |  |  |  |

**2.1.2 Resource and cost estimation**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Item** | **Unit** | **Cost (Thai Baht)** |
| 1 | Printing | - | 2000 |
| 2 | Working space + Internet service + electricity | - | 600 |
| 3 | Human resources | 2 | 0 |
| 4 | Training (online resource) | - | 0 |
| 5 | Transportation | - | 1000 |

Most of project expense comes from hard copy of documents, transportation, internet connection and electricity. Hard copy of documents includes all document of each progress. Transportation includes fuel cost and transportation service. Working space includes cost of internet and electricity fee inside working space. This project use open source, free ware, and free service for software development, so there are no cost of development tools.

## **2.2 Risk management plan**

**2.2.1 Identification of project risk**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Risk** | **Risk type** | **Probability** | **Impact** |
| R1 | Late delivery | Process | 50% | High |
| R2 | Date of submission or plan is changed | Process | 20% | High |
| R3 | Requirement is changed | Progress | 20% | High |
| R4 | Hardware is broken | Technology | 15% | High |
| R5 | Less quality of documentation | Human | 15% | High |
| R6 | Documentation files or source code loss due to computer crash | Technology | 10% | High |
| R7 | Misunderstanding of work concept | Human | 10% | High |
| R8 | Server connection problem | Technology | 5% | High |
| R9 | Lacking of skill and knowledge | Human | 30% | Medium |
| R10 | Sickness | Human | 30% | Medium |

**2.2.2 Risk Mitigation, Monitoring, and Management**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Mitigation** | **Monitoring** | **Management** |
| R1 | Reschedule a plan | * Weekly reporting each member progress * Closely tracking the progress with schedule. Moving behind schedule would cause the late delivery. * Number of hours to do each task | Consult supervisor for a late submission or other available solution |
| R2 | Working ahead of schedule | Available date of students, supervisor, and mentor | Consult with supervisor to about the submission date |
| R3 | * Meeting and discussion in team * Consult with supervisor for clear scope of requirement and project | * Confusion of requirements and project scope * Number of meeting and discussion about requirements and scope of work | * Define clearly scope of project * Limit the number of requirements |
| R4 | Fixing the hardware | The stability of development tools and computer while working | * Avoid overheating of computer * Avoid over using od computer * Using other hardware |
| R5 | * Always reviewing documents * Checking grammar and plagiarism with online tools | * Many mistake from document revision * High score of grammar and plagiarism report from checking tools | Asking for helps from supervisor or seniors |
| R6 | * Using version control * Backing up data | The stability of development tools and computer while working | * Avoid overheating of computer * Avoid over using od computer * Reducing memory usage * Changing computer |
| R7 | Explain in deep detail to team member | * Not matching understanding concept with other members * Confusion behavior of team member | * Have a discussion in team * Explaining the detail of complex points * Asking question to make sure other members understand the concept correctly |
| R8 |  |  |  |
| R9 | Researching on websites and books | * Cannot find their own solution * Frequency of researching on googles | * Asking for helps from supervisor or seniors * Joining a training course |
| R10 | * Taking enough rest and sleep * Doing routine exercise * Having enough nutrition * Be aware of accidents | * Have a sign of illness | * Consulting with supervisor to make change the size of project scope |

# **Chapter Three | Technical process plan**

## **Process model**

**Iterative model**

The iterative development process model combines the benefits of Prototyping and Waterfall model. The basic idea is that the software is developed in increments, each increment adding some functional capability to the system until the full system is implemented. [29] This model does not attempt to start with a full specification of requirements. [30] Instead, development begins by specifying and implementing just part of the software, which is then reviewed in order to identify further requirements. This process is then repeated, producing a new version of the software at the end of each iteration of the model. [31]

**Proposal phase**: This phase focus to create a proposal for “WIL report management system” which contains project introduction, motivation, technology tools, quality standard, and the plan of this project.

**Document plan phase**: This phase focus on creating a plan, design, and requirements. It contents Project management plan, Software requirement specifications, and Software design document.

**Iterate all feature**: Repeating the process of planning, implementation, testing, and reviewing of wash feature to the final feature. The rest of documents will be done on this phase, which are Testing plan, Test record, and reviewing of all documents.

## **Software resources**

**3.2.1 Design Tools:** Draw io ,Visual paradigm

**3.2.2 Development Tools:** Atom, Phpmyadmin

**3.2.3 Configuration Management Tools:** GitHub, SourceTree

**3.2.4 Document Tools:** Microsoft word

## **Hardware and Material resources**

**3.3.1 DELL Vostro**

**Processo**r Intel Core i5-5200U (2.20 GHz)   
**Memory** 4 GB DDR3L 500 GB 5400 RPM  
**Graphics** NVIDIA GeForce GT830M (2GB GDDR3)  
**Screen size** 14 inch (1366x768) HD  
**Operating system** Windows 8.1

**3.3.2 MacBook Pro (Retina, Mid 2014)**

**Processor** 2.5 GHz Intel Core i7  
**Memory** 16 GB 1600 MHz DDR 3  
**Graphics** NVIDIA GeForce GT 750M 2048MB Intel Iris Pro 1536MB  
**Screen size** 15 inch  
**Operating system** macOS Sierra

# **Chapter Four | Quality plans**

## **Quality Standard**

“WIL Report management” system follows **ISO 29110 for Very Small Entity (VSE)** for the Quality standard.

**4.1.1 Project Management Process** [4]

**4.1.1.1 PM Purpose**

The purpose of the Project Management process is to establish and carry out in a systematic way the tasks of the software implementation project, which allows complying with the project’s objectives in the expected quality, time and costs.

**4.1.1.2 PM objectives**

**PM.01:** The Project Plan for the execution of the project is developed according to the Statement of Work and validated with the Customer. The tasks and resources necessary to complete the work are sized and estimated

**PM.02:** Progress of the project is monitored against the Project Plan and recorded in the Progress Status Record. Corrections to remediate problems and deviations from the plan are taken when project targets are not achieved. . Appropriate treatment is taken to correct or avoid the impact of risk. Closure of the project is performed to get the Customer acceptance documented in the Acceptance Record.

**PM.03:** The Change Requests are addressed through their reception and analysis. Changes to software requirements are evaluated for cost, schedule and technical impact.

**PM.04:** Review meetings with the Work Team and the Customer are held. Agreements are registered and tracked.

**PM.05:** Risks are identified as they develop and during the conduct of the project.

**PM.06:** A software Version Control Strategy is developed. Items of Software Configuration are identified, defined and base lined. Modifications and releases of the items are controlled and made available to the Customer and Work Team including the storage, handling and delivery of the items.

**PM.07:** Software Quality Assurance is performed to provide assurance that work products and processes comply with the Project Plan and Requirements Specification.

**4.1.1.3 PM Activities**

**PM.01 Project Planning**: The primary objective of this process is to produce and communicate effective and workable project plans. This process determines the scope of the project management and technical activities, identifies process outputs, project tasks and deliverables, establishes schedules for project task conduct, including achievement criteria, and required resources to accomplish project tasks.

**PM.02 Project Plan Execution**: To implement the actual work tasks of the project in accordance with the project plan. Ideally when the project plan has been agreed and communicated to all teams’ members, work of the development of the product, which is the subject of the project, should commence.

**PM.03 Project Assessment and Control**: purpose is to determine the status of the project and ensure that the project performs according to plans and schedules, within projected budgets and it satisfies technical objectives. This process includes redirecting the project activities, as appropriate, to correct identified deviations and variations from other project management or technical processes. Redirection may include re-planning as appropriate.

**PM.04 Project Closure**: - typically involves releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources and communicating project closure to all stakeholders. Often a final step is to undertake a Post Implementation Review (post-mortem) to identify the level of project success and note any lessons learned for future projects.

**4.1.2 Software Implementation (SI) Process**

**4.1.2.1 SI Purpose**

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.

**4.1.2.2 SI objectives**

**SI.01**: Tasks of the activities are performed through the accomplishment of the current Project Plan.

**SI.02**: Software requirements are defined, analyzed for correctness and testability, approved by the Customer, base lined and communicated.

**SI.03**: Software architectural and detailed design is developed and base lined. It describes the software items and internal and external interfaces of them. Consistency and traceability to software requirements are established.

**SI.04**: Software components defined by the design are produced. Unit test are defined and performed to verify the consistency with requirements and the design. Traceability to the requirements and design are established.

**SI.05**: Software is produced performing integration of software components and verified using Test Cases and Test Procedures. Results are recorded at the Test Report. Defects are corrected and consistency and traceability to Software Design are established.

**SI.06**: A Software Configuration that meets the Requirements Specification as agreed to with the Customer, which includes user, operation and maintenance documentations is integrated, base lined and stored at the Project Repository. Needs for changes to the Software Configuration are detected and related Change Requests are initiated.

**SI.07**: Verification and Validation tasks of all required work products are performed using the defined criteria to achieve consistency among output and input products in each activity. Defects are identified, and corrected; records are stored in the Verification/Validation Results.

**4.1.2.3 SI Activity**

The Software Implementation Process has the following activities:

SI.01 Software Implementation Initiation

SI.02 Software Requirements Analysis

SI.03 Software Architectural and Detailed Design

SI.04 Software Construction

SI.05 Software Integration and Tests

SI.06 Product Delivery

## **Quality Factors**

According to McCall’s factor model, the “WIL Report management system” should meet these following factors:

**4.2.1 Product Operation Factors**

|  |  |
| --- | --- |
| Correctness | The product should be able to provide more than 90% correctness of data from request, supported by the feature that the user made. |
| Reliability | The software product should be able to handle more than 90% of activity with less than 10% of software failure. |
| Integrity | The software product should be able to identify users which are student, mentor, and supervisor |
| Usability | User who use software product at first time should be able to use all features within an hour. |

**4.2.2 Product Revision Factors**

|  |  |
| --- | --- |
| Testability | The product should able to be tested 90% of it defined functionality. |

**4.2.3 Product Transition Factors**

|  |  |
| --- | --- |
| Reliability | More than 30% part of finished software product should be able to reuse in future development. |

## **Reviews and Responsibilities**

|  |  |  |  |
| --- | --- | --- | --- |
| Stage Exit Review | | | |
| No. | Stage | Review Items | Participation |
| 1 | Business Analysis | Project proposal | Phinthip, Veerapat |
| 2 | Project Planning | Project plan | Phinthip, Veerapat |
| 3 | Requirement Analysis and Specification | SRS | Phinthip, Veerapat |
| 4 | Architecture and Detailed Design | SDD | Phinthip, Veerapat |
| 5 | Software Implementation | Coding | Phinthip, Veerapat |
| 6 | Unit Testing and Software Testing | Test plan, Test record | Phinthip, Veerapat |
| 7 | Project Monitoring and Control | Traceability record | Phinthip, Veerapat |

# **Testing**

|  |  |  |
| --- | --- | --- |
| **No,** | **Test type** | **Participation** |
| 1 | Unit Testing | Veerapat |
| 2 | System Testing | Veerapat |
| 3 | Acceptance Testing | Phinthip, Veerapat |

# **Chapter Five | Schedule and Milestone**

|  |  |  |  |
| --- | --- | --- | --- |
| **Milestone** | **Description** | **Millstone Criteria** | **Planned date** |
| M0 | Start project | * Topic discussion | 02/12/2016 |
| M1 | Start proposal | * Scope and feature discussion * Proposal document and presentation | 02/02/2017 |
| M2 | Start progress I | * Re-submit proposal * Develop feature#1,#2 * Project plan, SRS, SDD documents * Progress I presentation | 09/03/2017 |
| M3 | Start progress II | * Re-submit progress I document * R-submit SRS, SDD documents * Develop feature #3,#4,#5 * Progress II presentation | 30/03/2017 |
| M4 | Start final progress | * Re-submit progress II * Integrate all features * Integrate all documents * Final progress presentation | 27/04/2017 |
| M5 | Close project | Final release | 29/04/2017 |