** MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Document

Smart Buy

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| --- | --- |
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| **Capstone Project code** | SFM |

-Ho Chi Minh City, 01/2014-

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# Definitions, Acronyms, and Abbreviations

|  |  |
| --- | --- |
| 1. Learning outcome | Student study result |

# Report No.2 Software Project Management Plan

## Problem Definition

### Name of this Capstone Project

Student Finance Management (SFM)

### Problem Abstract

Currently at FPT University, the record and the financial information of each student are stored separately in different Excel spreadsheets. Therefore, the process of information retrieval of each student record or listing registered students in each trimester is extremely complicated. Besides, the school’s staff faces difficulties in managing student records and notifying required tuition fees to each specific student.

In order to reduce the cost of those processes, SFM system was created to simplify the process of organizing records. The system will support the information retrieval of student records, automatically sends notification mail to students, and optimizes the monitoring and the financial management procedure.

### Project Overview

#### Current Situation

FPT University currently manages student records manually through Excel spreadsheets. However:

* Spreadsheets only support analyzing and storing data.
* Since it is difficult to retrieve and email to each specific student their record and tuition fees information for the next trimester, the school only sends students notification of deadline for registering to study in the next trimester.

The system will solve those problems by supporting the school’s staff to:

* Import all data from Excel spreadsheets to the system’s database
* Retrieve the information of a specific student easily
* Calculate plan for each student.
* Automatically email each student notification for their specific situation (study record, required tuition fees)

The system also let students keep track on their records

#### The Proposed System

While handling the requirements of the system we found out some difficulties as follows:

* Import many excel files without closely associated. Validate data processing facing many difficulties.
* Processing and storage data related to the school's financial facing many difficulties due to lack of understanding of the financial regulations of the university.
* How to solve the prerequisite courses or subjects that the school canceled

In order to solve these problems, our group has agreed to make the corresponding solutions:

* Using the open source Apache POI to process input data
* Thanks to the support from the University's finance department
* Thanks to the Education department of the university to provide information of courses and specific relationship of each subject

##### System

The Student Finance Management system is intended to help managing student financial records and data. It requires web browser and Internet connection to operate. System can match existing records with newly imported data, calculate financial plan for students, notify and send email to students according to the plan. The system will have following functions:

* **For admin:**
* Admins can manage accounts, manage and configure the system.
* **For students:**
* Students can request to view their own records and financial status.
* **For staff:**
* Staff can import excel file or manually enter new student record data.
* **For manager:**
* Managers can use the system to search information based on student id, name and payment status.

#### Boundaries of the System

* The system can be used by every people with a laptop/computer.
* The system is **not intended** for managing these aspects:
* Managing learning outcome(1) detail.
* Managing exam’s information.
* Managing student’s schedule.
* The language of the system is English.
* The complete product includes:
* The website, for staff and user.
* All the process document involved.

#### Future plans

The current system can only be applied to FPT University. We design the system can be expanded and applied to many universities across the country.

#### Development Environment

##### Hardware requirements

**For server**

|  |  |  |
| --- | --- | --- |
| Windows | Minimum Requirements | Recommended |
| Internet Connection | Cable, Wifi (4 Mbps) | Cable, Wifi (8 Mbps) |
| Operating System | Window Server 2008 | Window Server 2008 |
| Computer Processor | Intel® Xeon ® 1.4GHz | Intel® Xeon ® Quad Core  (12M Cache, 2.50 GHz |
| Computer Memory | 1GB RAM | 2GB or more |

Table 1: Hardware Requirement for Server

##### Software requirements

|  |  |  |
| --- | --- | --- |
| Software | Name/ Version | Description |
| Environment | Java EE 6 | Specification for developing web application |
| IDE | Intellij IDEA 14.1 | Programming tools |
| DBMS | MySQL 5.6 | Used to create & manage the database for system |
| Source control | TortoiseSVN 1.8.11 | Used for source control |
| Web browser | Chrome 42 or above | Testing browser |

## Project organization

### Software Process Model

This project is developed under waterfall model.

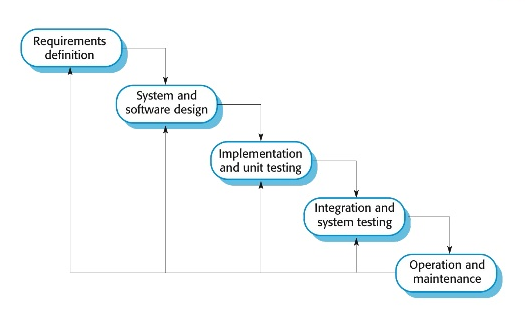


Figure 1: Waterfall model

Reference: Page 30, chapter 2, Software process model, SOFTWARE ENGINEERING 9th Edition, by Ian Sommerville.

### Roles and responsibilities

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Full name** | **Role in Group** | **Responsibilities** |
| **1** | Kieu Trong Khanh | Project manager | * Specify user requirement * Control the development process * Give out technique and business analysis support |
| **2** | Tran Khac Vy | Team Leader, BA, DEV, Tester | * Managing process * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |
| **3** | Ho Doan Trung | Team Member, BA, DEV, Tester | * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |
| **4** | Le Tuan Anh | Team Member, BA, DEV, Tester | * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |
| **5** | Nguyen Khoa Anh Tuan | Team Member, BA, DEV, Tester | * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |
| **5** | Tran Quan Phuc | Team Member, BA, DEV, Tester | * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |

Table 3: Roles and Responsibilities Details

### Tools and Techniques

|  |  |
| --- | --- |
| Tool/ Technique | Name/ Version |
| Frontend | HTML, CSS, JavaScript, jQuery, Bootstrap |
| Backend | JavaEE, Servlet, JSP, Hibernate |

## Project Management Plan

### Task

#### Create Project Charter

* Description: Create Project Charter to introduce about this Project.
* Deliverables: Finish the Project Charter before September 6th 2015.
* Resources Needed : 1 people for 7 days
* Dependencies and Constraints : N/A
* Risks : N/A

#### Create Software Project Management Plan

* Description: Create Software Project Plan, create task list, milestone and assign task to members.
* Deliverables : Finish Software Project Management Plan before September 13th 2015
* Resources Needed : 1 people for 7 days
* Dependencies and Constraints : Finish Project Charter
* Risks : Plan is impractical
* Solutions : have a buffer, use tool supports planning such as Microsoft Project

#### Create Software Requirements Specifications

* Description: Create Software Requirement based on collected requirements.
* Deliverables : Finish Software Requirements Specifications before September 20th 2015
* Resources Needed : 5 people for 7 days
* Dependencies and Constraints : Finish Project Management Plan and understand requirements clearly
* Risks: Misunderstanding requirements, lack of requirements or changing requirements in future, underestimate requirements.
* Solutions: discuss in group and review carefully, group and customer in pairs.

#### Design

* Description: Standardize and extend the current Database, create Software Design Description and create test cases.
* Deliverable: Finish Software Design Description before September 27th, 2015.
* Resources Needed: 4 people for 7 days.
* Dependencies and Constraints: Software Requirement Specifications is completed.
* Risks: Data redundancy, duplication of data.
* Solutions: Do research to understand more about the selected architecture.

#### Coding

* Description: Implement the system follow Software Design Description.
* Deliverable: Finish Source Code before October 18th, 2015.
* Resources Needed: 4 people for 21 days.
* Dependencies and Constraints: Complete Software Design Description.
* Risks: Team members may not understand new technologies through. Layout design may take a lot of time.
* Solutions: Members should be trained themselves and support each other.

#### Testing

* Description: Perform testing the system.
* Deliverable: Test report and source code after testing not later than October 21st, 2015.
* Resources Needed: 5 people for 3 days
* Dependencies and Constraints: Coding and finished.
* Risks: Testing runs behind schedule.
* Solutions: Must have reasonable testing plan. Test cases should be clear and follow work flow.

#### Deployment

* Description: Deploy the system into LAN connection, create user manual and installation.
* Deliverables : Running website, user manual and installation guide before October 25th, 2015
* Resources Needed : 5 people for 4 days
* Dependencies and Constraints : Finish testing and fatal errors fixed
* Risks : the software is not compatible with the system it was deployed in
* Solutions : The software should be tested on some systems have similar technical details

#### Training

* Description: Help user familiar with ATPM systems
* Risks: Template data file is not appropriate to standard template in system
* Solutions: close communicate with user, good support in initial time

### Task sheet: Assignments and Timetable

### All Meeting Minutes

Refer to Meeting Minutes folder.

## Coding Convention

Java: Using to develop Website.

Summary:

* Naming Convention.
  + Use camel case for both variable and function name.
  + Use pascal case for class name.
* Indentation.
  + Four spaces should be used as the unit of indentation. The exact construction of the indentation (spaces vs. tabs) is unspeciﬁed. Tabs must be set exactly every 8 spaces (not 4).
  + Avoid lines longer than 80 characters, since they’re not handled well by many terminals and tools.
* Declaration.
  + One declaration per line is recommended since it encourages commenting.
  + In absolutely no case should variables and functions be declared on the same line.
  + Do not put different types on the same line.
* Code Examples

Follow “Code Conventions for the Java TM Programming Language, by Sun Microsystems, rev April 20, 1999”.

<http://www.oracle.com/technetwork/java/codeconventions-150003.pdf>