** MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Document

**Laptop Reviews**

|  |  |
| --- | --- |
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| **Capstone Project code** | LRA |

-Ho Chi Minh City, ***05/2015***-

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***ACKNOWLEDGEMENTS***

We wish to thank various people for their contribution to this project: Our teachers for their advice and participation in the final review, our friends for their valuable technical support.

Special thanks should be given to Mr.Kiều Trọng Khánh, our research supervisor for his professional guidance and the useful, constructive recommendations throughout the course of this project.

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# Definitions, Acronyms, and Abbreviations

|  |  |
| --- | --- |
| LRA | Laptop Reviews |
| UI | User interface |

# Report No.2 Software Project Management Plan

## Problem Definition

### Name of this Capstone Project

Laptop Reviews (LRA)

### Problem Abstract

Today, there are many brands of laptops, and each brand has specific component manufactures. We cannot compare quality between 2 laptop based on their specification because quality of a laptop come from quality of components. A laptop of this brand maybe has the same specification with another one but has different quality. The customers may be wrong if they buy a laptop based on their outfit or specification. Our system will help user to make a good decision when buy a laptop by gathering reviews from trusted websites, classifying and showing them to users.

### Project Overview

#### Current Buying Habits

In Vietnam, people tend to choose laptops base on what they hear from sellers at electronic markets or what they read on some technical forums, websites. These activities have limitations. Sellers’ advices may be not accurate, some reviews may be non-sense and are not classified. Moreover, it will take lots of time for people to come to electronic markets to have laptops’ information or read reviews on many forums, websites. After searching on Google, we found this page: [www.buydig.com](http://www.buydig.com). They offer classified reviews for laptops but not all laptops. Therefore, customers will be upset when they can’t find what they need. Our solution will do a better job. We will gather and classify the reviews from trusted websites so that customers can make the best decision. Moreover, customers can claim for laptops which they can’t see on our system and get notification when those laptops’ information is updated.

#### The Proposed System

The system is intended for use by those with a smart phone or a laptop/computer with Internet connection. The system will have the following functions:

##### Web

* Admins can manage accounts.
* System can parse product, classify review and store to database.
* Staff can configure system, manage parser, train machine, manual update dictionary and check feedbacks from users.
* Users can search laptop’s information and give feedbacks.

#### Boundaries of the System

* The system can be used by every people with a smart phone or a laptop/computer with Internet connection.
* The language of the system is English.
* The complete product includes:
  + The website, for staff and user.
* All the process document involved.

#### Development Environment

##### Hardware requirements

**For server**

|  |  |  |
| --- | --- | --- |
| Windows | Minimum Requirements | Recommended |
| Internet Connection | Cable, Wifi (4 Mbps) | Cable, Wifi (8 Mbps) |
| Operating System | XP, Vista, 7, 8 | XP, Vista, 7, 8 |
| Computer Processor | Intel® Core 2 Duo | Intel® Core(TM) i5 CPU , M 460 @ 2.53GHz |
| Computer Memory | 1GB RAM | 3GB or more |

Table 1: Hardware Requirement for Server

Table 1: Hardware Requirement for Server

##### Software requirements

* Microsoft Windows 8.1: operating system and platform for development.
* SQL Server 2008 Express R2: used to create and manage the database for system.
* StarUML: used to create models and diagrams.
* Skype: used for communication and meeting.
* Visual Studio 2013: used to implement website and web service.
* Github.com & TortoiseSVN: used for source control.

## Project organization

### Software Process Model

Project is developed under agile model.



Figure 1: Agile Development Model

For more information: <http://www.qabaguru.com/agile-development-model/>

(Owner: Yes-M Systems – the organization provides IT Training and Staffing)

Explanation: We choose Agile Development Model because of the following reason:

* A key principle of agile development is that testing is integrated throughout the lifecycle. This allows the product owner to make adjustments if necessary and gives the product team early sight of any quality issues.
* Agile development principles encourage user involvement throughout the product’s development, which helps to ensure that any necessary decisions can be taken at the earliest possible opportunity, while there’s still time to make a material difference.

### 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** | Vo Thi Minh Chau | Team Leader, BA, DEV, Tester | * Managing process * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |
| **3** | Nguyen Van Hon | Team Member, BA, DEV, Tester | * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |
| **4** | Dinh Huu Toan | Team Member, BA, DEV, Tester | * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |
| **5** | Tran Manh Khuong | Team Member, BA, DEV, Tester | * Designing database * Clarifying requirements * Prepare documents * GUI Design * Create test plan * Coding * Testing |

Table 2: Roles and Responsibilities Details

### Tools and Techniques

- Front-end technologies: HTML5, CSS3, JavaScript, jQuery, AJAX.

- Back-end: Website: ASP.NET MVC4 + Entity Framework 5.

- Web Server: Microsoft IIS.

- Database Management System: MS SQL Server 2008 Express R2.

## Project Management Plan

### Software Development Life Cycle

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Phase**  **/Iteration** | **Description** | **Deliverables** | **Resource needed** | **Dependencies and Constrains** | **Risks** |
| **Preliminary Investigation or Analysis** | - Study similar existing systems.  -Identify and clarify requirements for the system in general. | - Introduction of proposed system.  - Project task plan.  - Software requirement specification.  - Prototypes. | 20 man-days | N/A | - Missing  requirement  - Unclear  scope of  project  - Lack of  member share  of understand |
| **Data Management** | - Collect data from websites. | - Data management service. | 30 man-days | N/A | - Lack of experience.  - The implemented parsers are not the best.  - Lack of test data. |
| **Training Machine** | -Teach the system how to synchronize products’ names. | N/A | 10 man-days | Depends on “Data management”. | - Not have a clear understanding about business process. |
| **Dictionary Management** | - Input data manually.  - Import data from excel files.  - Find synonyms and antonyms form dictionary websites. | - Dictionary management service. | 30 man-days | N/A | - Lack of experience.  - The dictionary is not variety. |
| **Analyzing Comment Algorithm** | - Build algorithm to analyze comments then classify them into 3 groups: positive, negative and neutral. | - Classified comment system. | 30 man-days | Depend on “Data management” and “Dictionary management”. | - The implemented algorithm is not the best.  - Lack of test data.  - Lack of experience on analyzing sentence’s meaning. |
| **Main User’s Functions** | - User can search a product.  - Let user see classified comments of each product.  - Member (staff and admin) can manage profile. | - Main user’s functions on web. | 20 man-days | Depend on “Data management”, “Dictionary management” and “Analyzing Comment Algorithm”. | - Lack of experience.  - Not have a clear understanding about business process. |
| **User Account**  **Management** | - Manage user accounts in the system. | - Account management system. | 10 man-days | N/A | - Lack of experience.  - Not have a clear understanding about business process. |

Table 3: Iteration

### Iteration Detail

#### Phase 1: Preliminary Investigation or Analysis

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Identifying and studying existing systems** | Find which systems currently provide similar service, their strengths and weakness. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **2. Identifying and clarifying main functions.** | Define which main functions system should provide. | ChauVTM |
| **3. Introduction.** | Complete Introduction Report. | ToanDH, KhuongNM |
| **4. Project Management**  **Plan.** | Prepare Project  Management Plan. | ChauVTM |
| **5. Website Prototype.** | Build a prototype of proposed system (Website). | ToanDH, HonNV |
| **6. Design Entity Relationship diagram** | Design Entity Relationship diagram. | ChauVTM, HonNV, ToanDH, KhuongNM |

Table 4: Phase 1: Preliminary Investigation or Analysis

#### Phase 2: Data Management

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Identifying Requirement and Planning** | Which feature this function should have and how to implement. | ChauVTM |
| **2. Create parsers** | Create appropriate parsers to parse data from many websites. | ChauVTM |
| **3. Implement UI** | Create the interface for user. | ChauVTM, ToanDH |
| **4. Testing** | Test system behavior and performance.  Test user behavior and performance. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **5. Document** | Adding SRS, SDD,  Installation Guide, Manual  Guide | ChauVTM, HonNV, ToanDH, KhuongNM |

Table 5: Phase 2: Data Management

#### Phase 3: Training Machine

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Identifying Requirement and Planning** | Which feature this function should have and how to implement. | ChauVTM |
| **2. Train machine** | Compare many string comparison algorithms and choose the best one.  Implement algorithm.  Implement merging and splitting products’ names function. | ToanDH |
| **3. Implement UI** | Create the interface for user. | ToanDH |
| **4. Testing** | Test system behavior and performance.  Test user behavior and performance. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **5. Document** | Adding SRS, SDD,  Installation Guide, Manual  Guide | ChauVTM, HonNV, ToanDH, KhuongNM |

Table 6: Phase 3: Training Machine

#### Phase 4: Dictionary Management

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Identify Requirement and Planning** | Which feature this function should have and how to implement. | ChauVTM |
| **2. Input data manually** | Build a function which let user input data by manually inputting. | ToanDH, KhuongNM |
| **3. Import excel file** | Build a function which let user input data by importing excel file. | KhuongNM |
| **4. Find synonyms and antonyms** | Build a function which let system find synonyms and antonyms of existed words in dictionary from dictionary websites automatically. | ChauVTM |
| **5. Implement UI** | Create the interface for user. | ChauVTM, ToanDH |
| **6. Test** | Test system behavior and performance.  Test user behavior and performance. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **7. Document** | Adding SRS, SDD,  Installation Guide, Manual  Guide | ChauVTM, HonNV, ToanDH, KhuongNM |

Table 7: Phase 3: Dictionary Management

#### Phase 5: Analyzing Comment Algorithm

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Identifying Requirement and Planning** | Which feature this function should have and how to implement. | ChauVTM |
| **2. Choose algorithm** | Compare many algorithms and choose the best one. | ChauVTM |
| **3. Implement algorithm** | Implement the chosen algorithm to classify the comments into 3 groups: positive, negative and neutral. | ChauVTM |
| **4. Testing** | Test system behavior and performance. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **5. Document** | Adding SRS, SDD,  Installation Guide, Manual  Guide | ChauVTM |

Table 8: Phase 5: Analyzing Comment Algorithm

#### Phase 6: Main User’s Functions

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Identify Requirement and Planning** | Which feature this function should have and how to implement. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **2. Manage User** | Allow staff to manage user accounts. | HonNV |
| **3. View Product ‘s Details** | Allow user view details of the product. | HonNV |
| **4. Search Product** | Allow user to search product. | HonNV |
| **5. Test** | Test system behavior and  Performance.  Test user behavior and  Performance. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **6. Document** | Adding SRS, SDD,  Installation Guide, Manual  Guide | ChauVTM, HonNV, ToanDH, KhuongNM |

Table 9: Phase 6: Main User’s Functions

#### Phase 7: User Account Management

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Identify Requirement and Planning** | Which feature this function should have and how to implement. | ChauVTM, HonNV, ToanDH, KhuongNM |
| **2. Manage account** | Staff can manage accounts in the system. | KhuongNM |
| **3. Test** | Test system behavior and  performance  Test user behavior and  performance | ChauVTM, HonNV, ToanDH, KhuongNM |
| **4. Document** | Adding SRS, SDD,  Installation Guide, Manual  Guide | ChauVTM, HonNV, ToanDH, KhuongNM |

Table 10: Phase 7: User Account Management

### All Meeting Minutes

Refer to Meeting Minutes folder.

## Coding Convention

C#: Using to develop website.

Summary:

* Naming Convention:
  + For variable’s name, use camel case. Eg: minValue, maxValue,…
  + For function name, class name, use pascal case. Eg: SearchProduct, ImportFile,…
* Layout Convention:
  + Write only one statement/declaration per line.
  + Indent continuation one tab stop (four spaces).
  + Add at least one blank line between method definitions and property definitions.
  + Use parentheses to make clauses in an expression apparent.
* Commenting Convention:
  + Place the comment on a separate line, not at the end of a line of code.
  + Begin comment text with an uppercase letter.
  + End comment text with a period.
  + Insert one space between the comment delimiter (//) and the comment text.
  + Do not create formatted blocks of asterisks around comments.
* Language Guidelines:

Using C# Code Convention From:

<http://msdn.microsoft.com/en-us/library/vstudio/ff926074.aspx>