** MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Document

Student Finance Management

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-Ho Chi Minh City, 09/2015-*This page is intentionally left blank*

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# Definitions, Acronyms, and Abbreviations

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| --- | --- |
|  |  |

# Software Requirement Specification

## User Requirement Specification

### Guest Requirement

~~Guest is a person who doesn’t have access to the system. To use all functions, guest must login. This is a function guest can use:~~

* ~~Login. (trungHD)~~

### Student Requirement

Sinh viên là người sử dụng dịch vụ của hệ thống. Trong hệ thống hiện tại có 3 loại sinh viên là :

* Sinh viên thông thường
* Sinh viên vay vốn tín dụng
* Sinh viên thuộc dạng “Cùng bạn đầu tư”

Tất các các sinh viên đều có thể sử dụng một số chức năng dưới đây :

* Xem quá trình học tập
  + Xem các học kỳ đã học
  + Xem danh sách các môn học chưa hoàn thành (bao gồm các môn đang nợ hoặc các môn chưa đủ điều kiện để học nếu có)
* Xem tình trạng tài chính
* Xem tình trang nộp học phí của các kỳ đã học
* Xem tính trạng nộp học phí của các môn nợ (nếu có)
* Xem tổng số tiền đã vay và lãi vay đến thời điểm hiện tại
* Xem và cập nhật thông tin cá nhân

### Staff Requirement

Nhân viên là người quản lý các thông tin liên quan đến sinh viên, học tập và tài chính. Hệ thống sẽ phân loại nhân viên thành 3 loại như sau:

* Công tác sinh viên
* Quản lý danh sách sinh viên
* Quản lý đào tạo
* Quản lý kết quả học tập của sinh viên
* Quản lý tài chính
* Quản lý mức thu học phí
* Quản lý tiền thu đầu kỳ

### Manager Requirement

Manager là người kiểm soát thông tin về tài chính theo tiến trình học tập của sinh viên, bên cạnh đó manager còn quản lý tỉ giá ngoại tệ và số tiền học tương ứng với tín chỉ môn học. Manager có thể:

* View Finance Information
* Manage Academic Suspension
* Manage Exchange Rate

### Admin Requirement

Admin is the person who manages the system. Admin can use these functions:

* Configure system.
* Manage Course.
* Manage user.

## System Requirement Specification

### External Interface Requirement

#### User Interface

* General requirement for graphics user interface is the GUI should be simple, clear, intuitive, and reminiscent.
* The interface design is an iterate process includes: design, sketching, prototyping, user assessment.
* Some design principles will be taken into consideration:
  + UI for business web applications - Janko Jovanovic [Ref:http://www.smashingmagazine.com/2010/02/25/designing-user-interfaces-forbusiness-web-applications/]
  + Ten principles of effective web design – Vitaly Friedman [Ref:http://www.smashingmagazine.com/2008/01/31/10-principles-of-effective-webdesign/]

#### Hardware Interface

**N/A**

#### Software Interface

* Web application: works with Firefox (v30 or above), Chromes (v14 or above), Internet Explorer (v10 or above) browse.

#### Communication Protocol

* Use HTTP protocol 1.1 for communication between the web browser and the web server.

### System Overview Use Case

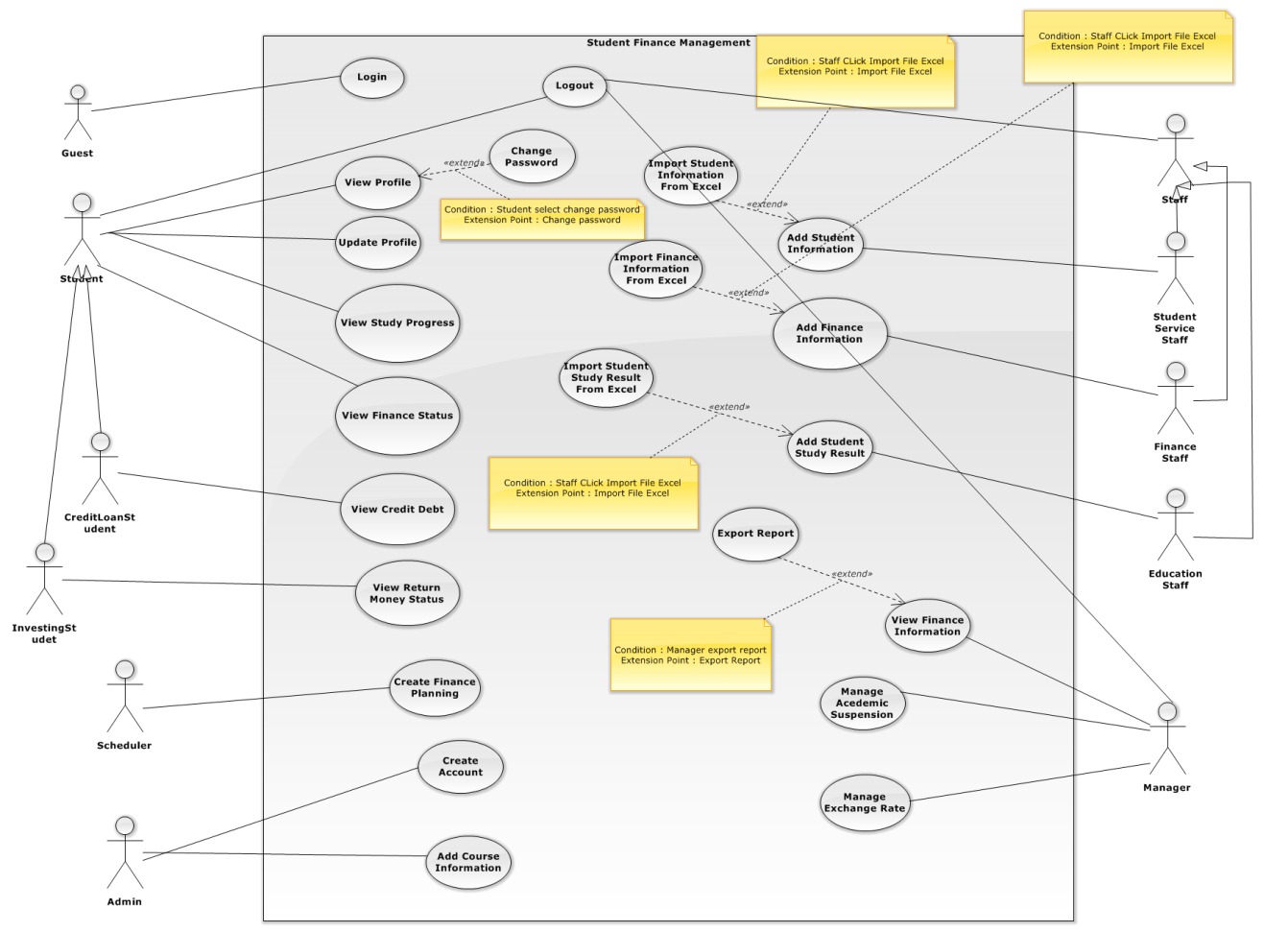


Figure 1: System Overview Use Case

### List of Use Case

## Software System Attribute

#### Usability

##### Graphic User Interface

* All the texts, labels and alerts will be written in Vietnamese, except some English terms that the school is using.

##### Usability

* The system is easy to use. The school’s staffs will need less than 3 days of training to use the system effectively.
* Students don’t need any training to use the system.

##### Installation

* User can follow installation and manual guide for installation. If there are any problems, users can contact developers for help.

#### Reliability

* System notification success rate is less than 2 failed notifications per 1000 sent.
* System email notification deliver success rate is less than 2 failed deliveries per 1000 sent.
* Scheduler task run at 00:00 every day with 100% execution rate.
* Web service API response success rate is less than 2 failed requests per 10,000 requests.

#### Availability

* **N/A**

#### Security

* All input data will be validated before saving into database.
* All privacy information such as password will be encrypted to ensure security.
* The system automatically authorizes all users when they login to the system.

#### Maintainability

* The system is separated into modules.

#### Portability

* All users can use application on every OS supported web browser.

#### Performance

* Requests from web application are responded in less than 10 seconds at 8 Mbps bandwidth speed.
* Mobile checker application should return card information in less than 1 minute at 8 Mbps bandwidth speed.
* Mobile printer application should write data to NFC card successfully in less than 1 minute at 8 Mbps bandwidth speed.

## Conceptual Diagram

Figure 35: ERD - Conceptual Diagram