1. **Introduction**
2. **Project Information**

* Project name: **Roll Call System Mobile**
* Project Code: **RSM**
* Product Type: **Website, Phone Application**
* Start Date: **September 9th, 2013**
* End Date:

1. **Introduction**

Roll system was known with HPLite32, SimplePass of HP fingerpint system; roll system with ID card using by almost corp or com around the world; the system face identify by Uniqul – Finland publish on 7/15/2013 or LogonSmart by Asus. Today, the trend machines replace humans in the hard work or the work does not require high intelligence became popular. So roll system face recognition becomes ever more necessary. The number of students in a university as well as the number of employees in large corporations in Vietnam is increasing dramatically, which means that the system should have professional roll with accuracy high.

1. **Current Roll Call System**

Below are some current roll call system:

* By manual: This system is widely used in school, university. The instructor will call the name of each student, check the absent, then submit the result to log system.
* Using ID card: This system is usually used in corporations. Each employees has a card. The card will be read by a card reader to check the attendance of the employee.
* Using fingerprint: This system is currently used in FPT University. 15 minutes before and after a studying session, the student must show his fingerprint to a machine to take attendance.
* Using camera + face recognition: This system is just in experimental stage. Each classroom has a camera. At the beginning of the studying session, the instructor use the computer, connect to the camera and take picture of classroom. The system will recognize the student in the picture, write to roll call log system.

1. **Problem Definition**

Below are the advantage and disadvantage of current roll call systems:

* By manual

+ Advantage: Simple to implement, cheap.

+ Disadvantage: The roll call take 3-5 minutes, take effort of instructor, wrong roll call.

* Using ID card

+ Advantage: High accuracy, not take much effor to check attendance.

+ Disadvantage: High cost (ID Card, Card Reader). Risk of ID card lending, missing.

* Using fingerprint

+ Advantage: Quickly. No effort must be made from instructor.

+ Disadvantage: Cost of fingerprint reading machine. Risk of machine error. The student check the attendance but not go to class.

* Using camera + face recognition

+ Advantage: Quickly. The entire class picture can be stored as log.

+ Disadvantage: High cost (Camera cost). Face recognition not to accuracy.

1. **Proposed Solution**

The system is intented to used in only school or university, where the pupils/students sit in a classroom. The system must help blah blah…. In detail, the system will enable following function:

**5.1 Blah Blah**

* Advantage: Small cost or no cost (If the instructor has phone). Face Recognition accuracy is about 70~80%, will reach 100% with confirm from instructor. The attendance check is quickly (< 30 seconds). The taken picture can be stored as log.
* Disadvantage: Complex to implement. The accuracy can varies depend on: Noise, brightness, number of people, image solution… Need student’s picture to be used for recognition training.

**5.2 Advantage and disadvantage**

The advantage and disadvantage of the propesed solution:

* Advantage: Small cost or no cost (If the instructor has phone). Face Recognition accuracy is about 70~80%, will reach 100% with confirm from instructor. The attendance check is quickly (< 30 seconds). The taken picture can be stored as log.
* Disadvantage: Complex to implement. The accuracy can varies depend on: Noise, brightness, number of people, image solution… Need student’s picture to be used for recognition training.

1. **Functional Requirement**
2. **Role and Responsibility**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Full Name** | **Role** | **Position** | **Contact** |
| 1 | Kiều Trọng Khánh | Project Manager | Instructor | khanhkt@fpt.edu.vn |
| 2 | Phạm Huy Hoàng | Developer | Team Leader | hoangphse60740@fpt.edu.vn |
| 3 | Nguyễn Thanh Bình | Developer | Team Member | [binhnt60321@fpt.edu.vn](mailto:binhnt60321@fpt.edu.vn) |
| 4 | Nguyễn Quang Huy | Developer | Team Member | [huynq60551@fpt.edu.vn](mailto:huynq60551@fpt.edu.vn) |
| 5 | Đỗ Minh Đạt | Developer | Team Member | datdm60545@fpt.edu.vn |

# 1.1 Name of this Capstone Project

The roll system using mobile device (RSM)

## 1.2 Problem Abstract

Roll system was known with HPLite32, SimplePass of HP fingerpint system; roll system with ID card using by almost corp or com around the world; the system face identify by Uniqul – Finland publish on 7/15/2013 or LogonSmart by Asus. Today, the trend machines replace humans in the hard work or the work does not require high intelligence became popular. So roll system face recognition becomes ever more necessary. The number of students in a university as well as the number of employees in large corporations in Vietnam is increasing dramatically, which means that the system should have professional roll with accuracy high.

## 1.3 Project Overview

### 1.3.3 The Current System

**1.3.2 The Proposed System**

The system needs to support capture, send image to server and checking with data. The system will help management, add course, detected new stranger. The system will be hosted on webservices, which provides easy access for admin and client to using on any device. In detail, the system will enable following functions:

**1.3.2.1 Web**

- Admin can control who can use this system by set role, course, subject …

- The system help admin or user insert course (subject, date, time, human …), update course (set date, time, add new stranger …), delete a course or user when out off day.

- The system check attendance by using result from user’s image capture between 15’ before and after class time.

- The system help detected stranger in class and find out who absent.

- The system support user check attendance again for who missing (just today and one days before).

**1.3.2.2 Mobile**

**1.3.3 Boundaries of the System**

- The system is currently used for internal Viet Nam market. Serves for needs of Vietnamese customer.

- This system is used to manage the trading between customer and seller.

- This system is not intended for managing these aspects:

o Human Resources

o Finance

- The system supports English for customer and seller.

- The completed product includes:

o The website for customer and seller.

o All the process involved documents.

**1.3.4 Development Environment**

**1.3.4.1 Hardware requirements:**

- Personal computers for developing with the minimum configuration: CPU Core 2 Duo 2.0GHz, 2GB of RAM, 120GB of hard disk, and internet.

**1.3.4.2 Software requirements:**

o Microsoft Windows 7: operating system and platform for development

o MySQL Server 5.6: used to create and manage the database for system

o Glassfish 3.1.2: web server

o StarUML: used to create models and diagrams

o Microsoft Project 2010: used to manage process and work schedules.

o Skype: used for communication and meeting

o Source Control: GitHub and BitBucket code server

o Netbeans IDE 7.3: used to implement system.

**2. Project organization**

**2.1 Software Process Model**

Project is developed under agile model.

**2.3 Tools and Techniques**

- Front-end technologies: html5, json, CSS, JavaScript, jQuery, AJAX, Google Currency Converter, Google Map Street API

- Back-end: Java

- Web Server: Glassfish 3.1.2

- Database Management System: MySQL Server 5.6

**3.3 All Meeting Minutes**

Refer to Meeting Minutes folder.

**4. Coding Convention**

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