**MINISTRY OF EDUCATION AND TRAINING**



**FPT UNIVERSITY**

Capstone Project Document

**NEXT BUS STATION**

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| **Capstone Project code** | TMST |

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# Definitions, Acronyms, and Abbreviations

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| **No.** | **Abbreviation & Acronym** | **Definition** |
| 1 | NBS | Next Bus Station |
| 2 | GPS | Global Positioning System |

# Introduction

## Project Information

- Project name: **Next Bus Station**

- Project Code: **TMST**

- Product Type: **Mobile Application, Website**

- Start Date: **January 06th, 2014**

- End Date:

## Introduction

Nowadays bus becomes a popular transportation, especially for students and workers. Many applications have been published for supporting bus users. But most of them are just showing buses’ route and stations, some have search route functions but working online and users cannot cached searched data for offline using. Hence, users cannot be supported when they are on bus about which station is next or whether next station is their expected one. If they have only the address, how can they know where to get off…? Next Bus Station is an app that support users both online and offline with feature functions to solve those problems.

## Current Situation

Below are some comparison applications and users behaviors:

* Windows phone applications (BusMap, BusHCM, Taxi – Xe Bus Hà Nội, VietBus…): they have functions such as look up buses’ information, show buses’ routes on map, find route between two points… but don’t have functions to let users know which next stations is when they are on bus, and cannot let users add more attributes to stations for easier searching.
* When users have an address which is not very well-known, they may know which bus they have to get on somehow, but will be anxious about which station to get off. And if they don’t have network connection or GPS devices when they are on bus, they cannot know where they are currently at.

## Problem Definition

Below are the advantages and disadvantages of current bus application in Windows Phone store and website in Vietnam:

* Advantages:
  + Easy to use. Most features are offline.
  + Provide users quick access to information about buses and stations’ information.
* Disadvantages:
  + Cannot support users when they are currently on bus such as next stations, get to know which expected station is based on address...
  + Cannot alert users when their expected station comes.
  + Cannot let users recommend more attributes or download defined attributes which help them to recognize station easier.
  + Require users to have network connection or GPS.
  + Totally offline applications may contain out-of-date information.

## Proposed Solution

The application uses GPS to track user location to alert user when expected station comes near. Users can upload more attributes for stations or upload locations to make searching for stations easier. Users can use functions online and offline in different modes, but they will have some policies to keep them using online. Users can search for next station without GPS by providing their address, this can be done online or offline with saved locations.

### Feature functions

* Users can show bus route and set reminders based on station or location.
* Users can set location on to keep tracking about next station of bus.
* Users can create their own route to use as a bus route.
* Users can search for next station by providing their current address.
* Users can upload their recommend locations and download approved locations from server to improve search engine.
* Users can search bus route online and offline with different policy for each.

### Advantages and disadvantages

* Advantages: Provide users many supports from searching for bus route to alert their expected stations. They can use most of functions in offline mode and can upload data to server.
* Disadvantages: Users must have suitable mobile device or laptop, and internet connection is required once in a while for keeping data in local database. Besides that, data which is gotten from <http://buyttphcm.com.vn/> may be out-of-date, or that website may not available anymore, so it is essential to get actual data from users’ recommendation.

## Functional Requirements

Function requirements of the system are listed as below:

### Show Route and Tracking

* User choose to show bus route or created route they are on and enable tracking to know which next station is and alert when set station comes near.
* User add reminders at stations or location.
* User can get next station by providing address only.

### Location Management

* User can upload and download location to use for set reminders and search routes.

### Self-created Route.

* User can create new routes based on existing buses and stations’ information.
* User can search routes and cached them for offline using.

### System Management

* Staff can manage all parsed data such as bus, station, location, user, report…
* Staff have to approve uploaded location to make it downloadable.
* Staff have to approve changes between parsed data and current data to make changes.

## Role and Responsibility

|  |  |  |  |  |
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Table 1 Roles and Responsibility