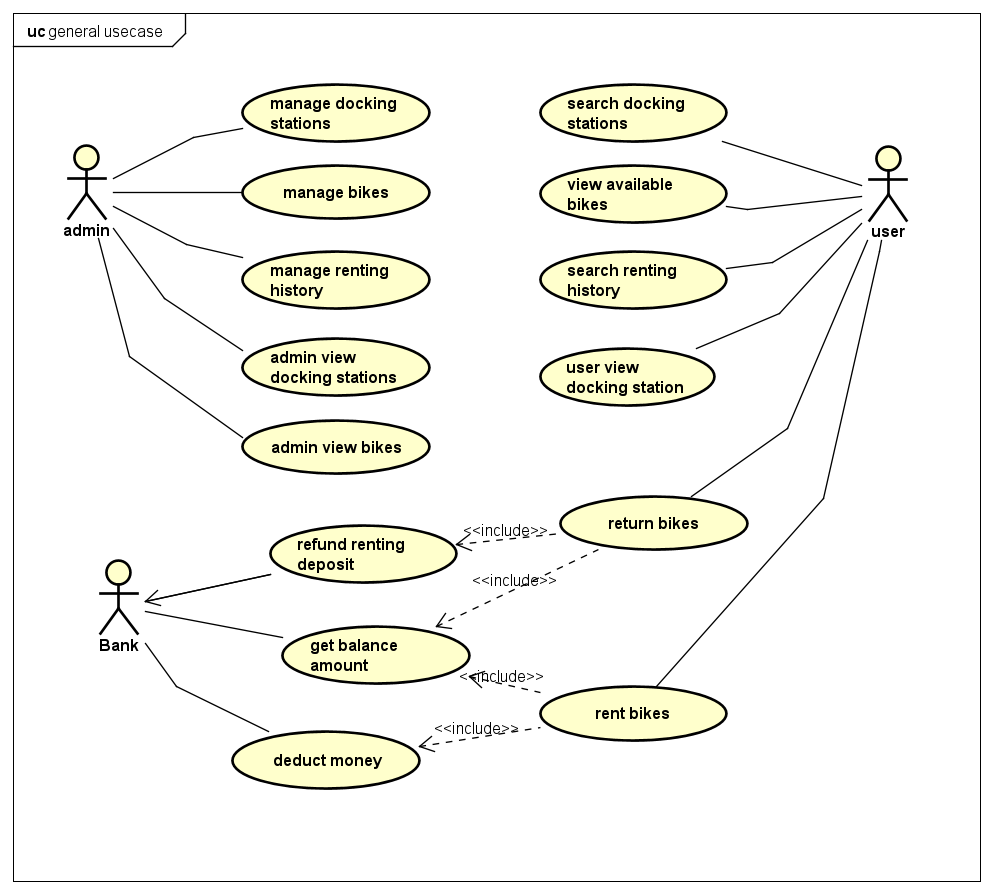
Requirement Analysis

Group ICT1.k62.20201-09

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* Hoàng Tuấn Anh Văn
* Phạm Văn Khoa

# Use case diagram

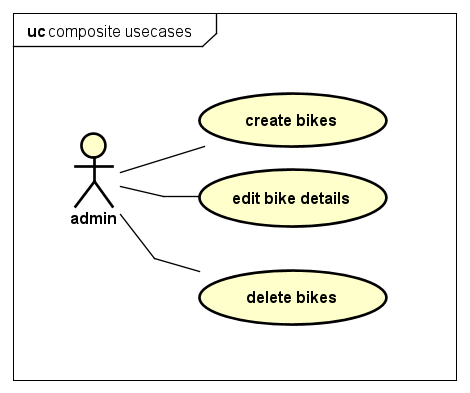
## General use case diagram



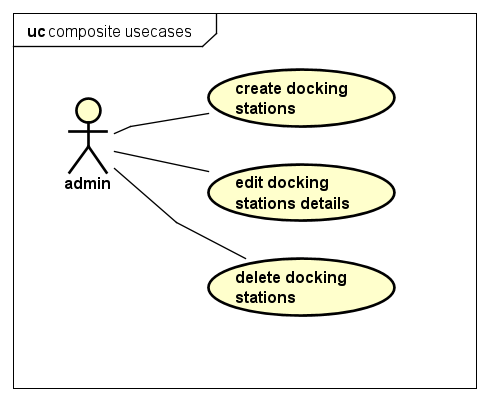
Composite use cases:

* Manage bikes
* Manage docking stations
* Manage renting history
* Rent bikes
* Return bikes

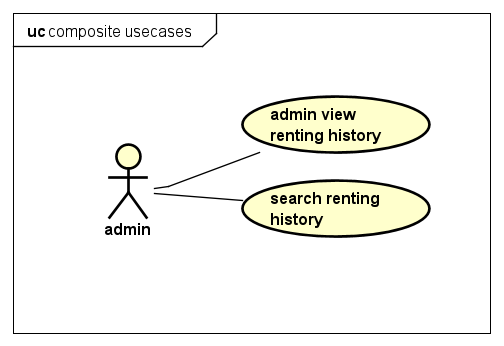
## Use case diagram for “Manage bikes”



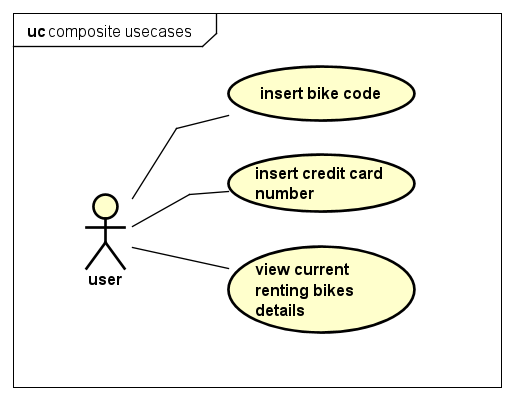
## Use case diagram for “Manage docking stations”



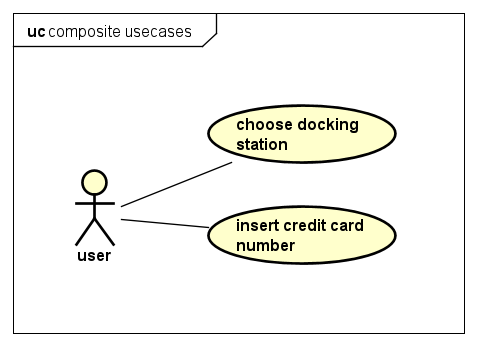
## Use case diagram for “Manage renting history”



## Use case diagram for “Rent bikes”



## Use case diagram for “Return bikes”



# Use case specification

## Use case “Edit bikes detail”

|  |  |  |  |
| --- | --- | --- | --- |
| UC Code | UC001 | Use case name | Edit bike details |
| Actor | Admin | | |
| Description | The “edit bike details” use case is initiated when admin press edit button in the bike detail page. Subsequently, a new page with title “Update bike details” appears containing current information about the selected bike. Admin can then edit each individual fields. The page can be dismissed by clicking either “Save” or “Cancel” button. Pressing “Save” button will result in the entry of selected bike be updated to reflect changes, while “Cancel” button made no changes to that bike | | |
| Precondition | Admin successful Login | | |
| Main flow of event (success) | | # | Doer | Action | | --- | --- | --- | |  | Admin | Choose edit bike button in bikes page | |  | Software | displays admin edit bike screen | |  | Software | Update details in edit screen with selected bike | |  | Admin | enters bike details to update | |  | Admin | Choose save bike button | |  | Software | checks if the entered detail fields is valid | |  | Software | Save updated bike if details is valid | |  | Software | Displays successfully update bike detail message | |  | Software | Close edit page and return to bike list page | | | |
| Alternative flow of event | |  |  |  | | --- | --- | --- | | # | Doer | Action | |  | Admin | Cancels edit page at any time | | 4a | Admin | Clears any field before saving | | 5b | Admin | Choose cancel button | | 6a. | Software | Notifies error “Invalid field input” if the entered detail field is invalid, go to step 2 | | 6b | Software | Notifies information “No field change” if nothing is edited, go to step 2 | | | |
| Post condition | No | | |

\* Bike edit input requirements:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Data field** | **Description** | **Required?** | **Valid condition** | **Example** |
| 1. | Name | The name of this bike | Yes | Characters and numbers only | Eco Bike |
| 2 | Type | The bike’s type | Yes | Characters and numbers only | EBike |
| 3 | Weight | The bike’s weight (in kilograms) | Yes | Numbers only | 30 |
| 4 | License Plate | The bike’s license series | Yes | Characters and numbers only | ECOB12345 |
| 5 | Manufacturing Date | The bike’s manufacturing date | Yes | Check for valid date format | 12/10/2015 |
| 6 | Producer | The bike’s producer company | Yes | Characters and numbers only | Thong Nhat |
| 7 | Cost | The bike’s cost | Yes | Currency format | 10.000.000 |

## Use case “Insert Credit Card Number”

|  |  |  |  |
| --- | --- | --- | --- |
| UC Code | UC002 | Use case name | Insert Credit Card Number |
| Actor | User | | |
| Precondition | Choose Docking Station | | |
| Main flow of event  (success) | |  |  |  | | --- | --- | --- | | # | Doer | Action | |  | User | Press “Return bike” button. | |  | System | Display “Please insert credit card number”. | |  | User | Insert credit card number. | |  | System | Refund deposit money. | |  | System | Check balance. | |  | System | Deduct renting money. | |  | System | Display “Return bike successfully” | | | |
| Alternative flow of event | |  |  |  | | --- | --- | --- | | # | Doer | Action | | 2a. | System | Display error: You don’t have any bike rented. | | 3a. | System | Display error: Invalid credit card number. | | 6a. | System | Display error: Insufficient balance. | | | |
| Post condition | No | | |

\* Credit card number input requirement:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Data field** | **Description** | **Required?** | **Valid condition** | **Example** |
|  | Credit card number |  | Yes | Only digits | 123456789 |

## Use case “Insert Bike Code”

|  |  |  |  |
| --- | --- | --- | --- |
| UC Code | UC003 | Use case name | Insert Bike Code |
| Actor | User | | |
| Precondition | No | | |
| Main flow of event  (success) | |  |  |  | | --- | --- | --- | | # | Doer | Action | | 1. | User | Press "Rent Bike" button. | | 2. | System | Display dialog to enter bike code. | | 3. | User | Enter bike code (description below \*). | | 4. | User | Request for bike (press submit button). | | 5. | System | Check if bike code is empty or not. | | 6. | System | Check if bike code is valid or not. | | 7. | System | Check if bike has already been rented or not. | | 8. | System | Prompt user and move to another screen to show state when renting bike. | | | |
| Alternative flow of event | |  |  |  | | --- | --- | --- | | # | Doer | Action | | 5a. | System | Error: bike code is empty. | | 6a. | System | Error: bike code is invalid. | | 7a. | System | Error: bike has been rented. | | | |
| Post condition | No | | |

\* Bike code input requirement:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Data field** | **Description** | **Required?** | **Valid condition** | **Example** |
| 1. | Bike code | Each bike has a unique code. User must enter bike code to rent bike. | Yes | Bike code must be same with valid code in the system | EBIKE0001 |

## Use case “Search docking stations”

|  |  |  |  |
| --- | --- | --- | --- |
| UC Code | UC002 | Use case name | User Search Docking Stations |
| Actor | User | | |
| Description | The “user search docking stations” use case is initiated when user press the search bar in the docking stations list page. Subsequently, a new page with title “Search Docking Station” appears containing a bar for user to enter search keyword. User then can enter some keyword which is contained in the address or name of target docking station. System then display a list of station matched the input keyword. | | |
| Precondition | Admin successful Login | | |
| Main flow of event (success) | | # | Doer | Action | | --- | --- | --- | |  | User | Choose search bar in Docking Station List Page | |  | Software | Displays Search Station screen | |  | User | Enter search keyword | |  | User | Enter search button | |  | Software | Search for stations that match the keyword | |  | Software | Display list of matched station | | | |
| Alternative flow of event | |  |  |  | | --- | --- | --- | | # | Doer | Action | |  | User | Cancels search page at any time | | 4a | User | Choose cancel button | | 5b | Software | Display “No matching station” | | | |
| Post-condition | None | | |

\* Input requirement:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Data field** | **Description** | **Required?** | **Valid condition** | **Example** |
| 1. | Search Keyword |  | Yes | Characters and digits, no special characters | 90 Nguyen Van Cu Street |

# Glossary

## Introduction

This document is used to define terminology specific to the problem domain, explaining terms, which may be unfamiliar to the reader of the use-case descriptions or other project documents. Often, this document can be used as an informal data dictionary, capturing data definitions so that use-case descriptions and other project documents can focus on what the system must do with the information.

## Definitions

The glossary contains the working definitions for the key concepts in the Course Registration System

### Admin

The person who owns the right to manage various categories in the system including bikes, docking stations,…

### User

The person who interact with the software in order to rent bike from docking station

### Bike

A bicycle or motorcycle in docking station that users can rent

### Docking Station

An area to rent or return bikes

### Renting history

Information about previous bike renting details

### Bike code

A unique sequence of characters that is used to specify a bike

### Credit card

User’s banking credit information that is used to rent or return bike

### Renting deposit

A sum payable as a first installment on renting a bike (the balance being payable later)

### Balance amount

Amount of money in credit card

# Supplementary specification

The purpose of this document is to define requirements of the Eco Bike Rental System. This Supplementary Specification lists the requirements that are not readily captured in the use cases of the use-case model. The Supplementary Specifications and the use-case model together capture a complete set of requirements on the system

## Functionality

## Usability

## Performance

## Reliability

## Security