VIETNAM GENERAL CONFEDERATION OF LABOUR

**TON DUC THANG UNIVERSITY**

**FACULTY OF INFORMATION TECHNOLOGY**



**INFORMATION TECHNOLOGY PROJECT 2**

**STUDENT MANAGEMENT SYSTEM**

*Instructor*: **ĐẶNG MINH THẮNG**

*Student*: **NGUYỄN CHÂU THẢO QUÂN – 51600072**

Class **: 16050310**

Course  **: 20**

**HO CHI MINH CITY, 2020**

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ACKNOWLEDGEMENTS

**PROJECT IS ACCOMPLISHED**

**AT TON DUC THANG UNIVERTY**

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*TP. Hồ Chí Minh, ngày tháng năm*

*Authors*

*(signature and full name)*

*Nguyễn Châu Thảo Quân*

TEACHER’S CERTIFICATION AND EVALUATION SECTION

**Instructor’s certification section**

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Ho Chi Minh city, ngày tháng năm

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**Examiner’s evalutation section**

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ABSTRACT

System analysis and design is an dispensable first step in the software system development process. It is realized and assumed that information system analysis and design is the most vital stage in software development process. Otherwise, a mistake in the data design process can lead to a poor quality product or no long-term value.

The management and provision of information about the educational process is an essential part of effective management of the educational process in the institutes of higher education. Nowadays, along with the development of science and technology, the demand for the informatics applications is also increasing rapidly. The construction of management system to meet above these demands is very essential. Student management is not an exception. The birth of student management system will reduce manpower, helping to manage students and even making it more convenient and especially helpful.

The requirements of a reliable student management system are analysed, formed a use-case diagram of student management system, designed and implemented the architecture of the application. Regarding the implementation process, modern approaches were used to develop a reliable websites written by PHP.

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LIST OF NOTATIONS AND ABBREVIATIONS

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# REQUIREMENT ANALYSIS AND DESIGN

## Introduction

The Student Management System can handle all the details about a student, student personal details, academic details, college details etc., The Student Manage System is an automated version of manual student management process.

### Purpose

This System Requirements Specification contains the complete system requirements for the Student Management System and describes the design decisions, architectural design and the detailed design needed to implement the system. It provides the visibility in the design and information needed for software support.

### System Perspective

The proposed system will be developed using MVC architecture and be compatible with any platform. The front end of the system will be developed using Laravel’s blade engine and backend will be developed using Laravel

## Actors And Use Cases Descriptions

### Diagrams

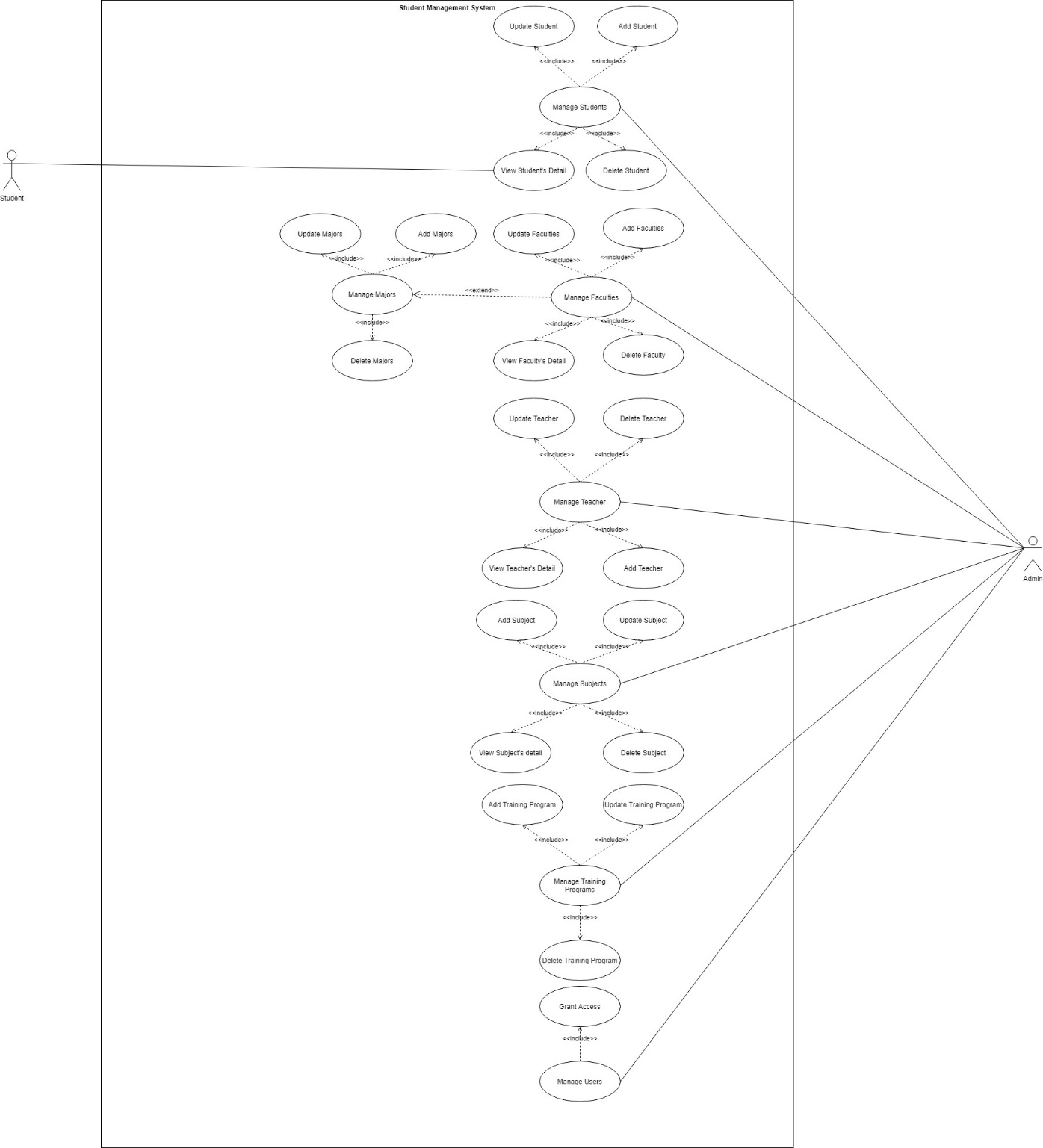


Figure .: Student Information Management

### Actors Description

|  |  |  |
| --- | --- | --- |
| **#** | **Actors** | **Definitions** |
| 1 | Admin |  |
| 2 | Teacher |  |
| 3 | Student |  |

Table .: Actors description table

### Use Case Description

#### Functional Requirements

|  |  |
| --- | --- |
| **Use Case ID:** | UC01 |
| **Use Case Name:** | Add Student |
| **Description:** | This use case allow user to add the new informations of student. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A new student is enlisted. |
| **Main Flow:** | 1. User clicks on button “Quản Lý Sinh Viên” on the left sidebar.  2. System displays a list of student.  3. User clicks on button “+” on the top of the list.  4. System displays a form which allows user to add a new student.  5. User enters student’s information and submits.  6. System validates these information.  7. System displays an added student to the list.  8. Use Case ends. |
| **Alternative Flow:** | 6a. Missing the required information or duplicating the information.  1. Error messages display under these fields.  2. Use case resumes at main flow step 5. |
| **Exception Flow:** |  |

Table .: Use Case “Add Student”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC02 |
| **Use Case Name:** | Update Student |
| **Description:** | This use case allow user to update student’s informations. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | Any student’s information is updated. |
| **Main Flow:** | 1. User click the button “Quản Lý Sinh Viên” on the left sidebar.  2. System displays a list of students.  3. User click on button “✍” on the right of a specific student on the list.  4. System displays a form which allows user to update student’s information.  5. User enters new informations which are needed to update and submits.  6. System displays student’s profile with updated informations.  7. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Update Student”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC03 |
| **Use Case Name:** | View Student’s Detail |
| **Description:** | This use case allow user to view a detailed information of specific student including their personal information, the information at university. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A student’s profile displays. |
| **Main Flow:** | 1. User clicks the button “Quản Lý Sinh Viên” on the left sidebar.  2. System displays a list of student.  3. User clicks on student’s name.  4. System displays a student’s profile.  5. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use case “View Student's Detail”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC04 |
| **Use Case Name:** | Delete Student |
| **Description:** | This use case allow user to delete a specific student from a list. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A deleted student is removed from list. |
| **Main Flow:** | 1. User click the button “Quản Lý Sinh Viên” on the left sidebar.  2. System displays a list of student.  3. User click on button “–” on the right of a specific student in the list.  4. System refreshes a list and removes a deleted student from a list.  5. User can click on 🗑 to view all deleted students.  6. System will display a list of deleted students.  7. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Deleted Student”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC05 |
| **Use Case Name:** | Add Teacher |
| **Description:** | This use case allow user to add the new informations of a new teacher. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A new teacher is enlisted. |
| **Main Flow:** | 1. User click on button “Quản Lý Giảng Viên” on the left sidebar.  2. System displays a list of teacher.  3. User click on button “+” on the top of the list.  4. System displays a form which allows user to add a new teacher.  5. User enters all teacher’s information and submits.  6. System validates these information.  7. System displays an added teacher into a list.  8. Use Case ends. |
| **Alternative Flow:** | 6a. Missing the required information or duplicating information.  1. Error messages display under these fields.  2. Use case resumes at main flow step 5. |
| **Exception Flow:** |  |

Table .: Use Case “Add Teacher”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC06 |
| **Use Case Name:** | Update Teacher |
| **Description:** | This use case allow user to update a new teacher’s informations including their personal information, the information at university. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | Any teacher’s information is updated. |
| **Main Flow:** | 1. User click on button “Quản Lý Giảng Viên” on the left sidebar.  2. System displays a list of teacher.  3. User click on button “✍” on the right of a specific teacher in the list.  4. System displays a form which allows user to update teacher’s information.  5. User enters the informations which are needed to update and submits these information.  6. System displays teacher’s profile with updated informations.  7. Use Case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Update Teacher”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC07 |
| **Use Case Name:** | View Teacher’s Detail |
| **Description:** | This use case allow user to view a detailed information of specific teacher including their personal information, the information at university. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | Teacher’s profile displays. |
| **Main Flow:** | 1. User click the button “Quản Lý Giảng Viên” on the left sidebar.  2. System displays a list of teacher.  3. User click on teacher’s name.  4. System displays teacher’s profile.  5. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “View Teacher’s Detail”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC08 |
| **Use Case Name:** | Delete Teacher |
| **Description:** | This use case allow user to delete a specific teacher from a list. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A deleted teacher is removed from list. |
| **Main Flow:** | 1. User click the button “Quản Lý Giảng Viên” on the left sidebar.  2. System displays a list of teacher.  3. User click on button “–” on the right of a specific teacher in the list.  4. System refreshes a list.  5. User can click on 🗑 to view all deleted teachers.  6. System will display a list of deleted teachers.  7. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Delete Teacher”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC09 |
| **Use Case Name:** | Add Faculty |
| **Description:** | This use case allow user to add a specific faculty into a list. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A new faculty is added to the list. |
| **Main Flow:** | 1. User click the button “Quản Lý Khoa” on the left sidebar.  2. System displays a list of faculty.  3. User click on button “+” on top of the list.  4. System displays a form which allows user to add a new faculty.  5. User enter faculty’s information and submits.  6. System validates these information.  7. Use Case ends. |
| **Alternative Flow:** | 6a. Missing id, name or dupplicating.  1. Error messages display under these fields.  2. Use case resumes at main flow step 5. |
| **Exception Flow:** |  |

Table .: Use Case “Add Faculty”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC10 |
| **Use Case Name:** | Update Faculty |
| **Description:** | This use case allow user to update a specific faculty into a list. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | The updated information of faculty displays into a list. |
| **Main Flow:** | 1. User click the button “Quản Lý Khoa” on the left sidebar.  2. System displays a list of faculty.  3. User click on button “✍” on the right of a specific faculty on the list.  4. System displays a form which allows user to add a new faculty.  5. User enter faculty’s information and submits.  6. System displays a list of faculty with updated informations.  7. Use Case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Update Faculty”

|  |  |
| --- | --- |
| **Use Case ID:** | UC11 |
| **Use Case Name:** | View Faculty |
| **Description:** | This use case allow user to view faculty’s detailed information. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | Faculty’s detail displays. |
| **Main Flow:** | 1. User click the button “Quản Lý Khoa” on the left sidebar.  2. System displays a list of faculty.  3. User click on a specific faculty’s name.  4. System displays faculty’s detailed information.  5. Use Case ends. |
| **Alternative Flow:** |  |
| **Exception Flow** |  |

Table .: Use Case “View Faculty's Detail”

|  |  |
| --- | --- |
| **Use Case ID:** | UC12 |
| **Use Case Name:** | Delete Faculty |
| **Description:** | This use case allow user to delete a specific faculty with its information. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | Faculty are removed from list and so are its related information. |
| **Main Flow:** | 1. User click the button “Quản Lý Khoa” on the left sidebar.  2. System displays a list of faculty.  3. User click button “–” on the right of a specific faculty.  4. System refreshes a page.  5. User can click on 🗑 to view all deleted faculties.  6. System will display a list of deleted faculties.  7. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Delete Faculty”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC13 |
| **Use Case Name:** | Add Subject |
| **Description:** | This use case allow user to add a specific subject into a list. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A new subject is enlisted. |
| **Main Flow:** | 1. User click the button “Quản Lý Môn Học” on the left sidebar.  2. System displays a list of subjects.  3. User click on button “+” on top of the list.  4. System displays a form which allows user to add a new subject.  5. User enter subject’s information and submits.  6. System validates these information.  7. Use Case ends. |
| **Alternative Flow:** | 6a. Missing required information or dupplicating.  1. Error messages display under these fields.  2. Use case resumes at main flow step 5. |
| **Exception Flow:** |  |

Table .: Use Case “Add Subject”

|  |  |
| --- | --- |
| **Use Case ID:** | UC14 |
| **Use Case Name:** | Update Subject |
| **Description:** | This use case allow user to update a specific subject from a list. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | A replaced information of subject displays. |
| **Main Flow:** | 1. User click the button “Quản Lý Môn Học” on the left sidebar.  2. System displays a list of subject.  3. User click on button “✍” on the right of a specific subject on the list.  4. System displays a form which allows user to update a new subject.  5. User enter faculty’s information which are needed to updated and submits.  6. System displays subject’s detail with updated informations.  7. Use Case ends. |
| **Alternative Flow:** |  |

Table .: Use Case “Update Subject”

|  |  |
| --- | --- |
| **Use Case ID:** | UC15 |
| **Use Case Name:** | View Subject |
| **Description:** | This use case allow user to view subject’s detailed information. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | Subject’s detailed information displays. |
| **Main Flow:** | 1. User click the button “Quản Lý Môn Học” on the left sidebar.  2. System displays a list of subject.  3. User click on a specific subject’s name.  4. System displays subject’s detail.  5. Use Case ends. |
| **Alternative Flow:** |  |

Table .: Use Case “View Subject's Detail”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC16 |
| **Use Case Name:** | Delete Subject |
| **Description:** | This use case allow user to delete a specific subject. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access to the dashboard. |
| **Post-conditions:** | Subject are removed from list. |
| **Main Flow:** | 1. User click the button “Quản Lý Môn Học” on the left sidebar.  2. System displays a list of subject.  3. User click button “–” on the right of a specific subject.  4. System refreshes a page and removes a deleted subject.  5. User can click on 🗑 to view all deleted subjects.  6. System will display a list of deleted subjects.  7. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Delete Subject”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC17. |
| **Use Case Name:** | Add Training Program. |
| **Description:** | This use case allow user to add a new training program. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access the dashboard. |
| **Post-conditions:** | A new training program is enlisted |
| **Main Flow:** | 1. User click the button “Quản Lý Chương Trình Đào Tạo” on the left sidebar.  2. System displays a list of training programs.  3. User click button “+” on top of the list.  4. System displays a form which allows user to add a new training program.  5. User enters the information and submits.  6. System validates these information.  7. Use Case ends. |
| **Alternative Flow:** | 6a. Missing the required informations  1. Error messages display under these required fields.  2. Use Case resumes in main flow step 5 |
| **Exception Flow:** |  |

Table .: Use Case “Add Training Program”

|  |  |
| --- | --- |
| **Use Case ID:** | UC18. |
| **Use Case Name:** | Update Training Program. |
| **Description:** | This use case allow user to update the information of training program. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access the dashboard. |
| **Post-conditions:** | A new information of training program is updated |
| **Main Flow:** | 1. User clicks the button “Quản Lý Chương Trình Đào Tạo” on the left sidebar.  2. System displays a list of training programs.  3. User clicks button “✍” on top of the list.  4. System displays a form which allows user to update a new information of training program.  5. User enters the information and submits.  6. System validates these information.  7. Use Case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Update Training Program”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC19. |
| **Use Case Name:** | Delete Training Program. |
| **Description:** | This use case allow user to delete a specific training program. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access the dashboard. |
| **Post-conditions:** | A training program is removed from list. |
| **Main Flow:** | 1. User clicks the button “Quản Lý Chương Trình Đào Tạo” on the left sidebar.  2. System displays a list of training programs.  3. User clicks button “–” on top of the list.  4. System refreshes and removes a deleted training program from list.  5. User can click on 🗑 to view all deleted training programs.  6. System will display a list of deleted training programs.  7. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Delete Training Program”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC20. |
| **Use Case Name:** | Grant Access. |
| **Description:** | This use case allow user to authorize a specific user with roles. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | User is permitted to access the dashboard. |
| **Post-conditions:** | A user is granted a role. |
| **Main Flow:** | 1. User clicks the button “Quản Lý Tài Khoản” on the left sidebar.  2. System displays a list of accounts.  3. User clicks button 🡻 on right of an account to the list and clicks on “Phân Quyền”.  4. System refreshes a lists.  5. User can click on 🡻 to view all roles of an account with the checked checkbox.  6. Use case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Grant Access”

|  |  |
| --- | --- |
| **Use Case ID:** | UC21. |
| **Use Case Name:** | Add Major. |
| **Description:** | This use case allow user to add a new major. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | 1. User is permitted to access the dashboard.  2. A new faculty is added.  3. A profile of a faculty displays. |
| **Post-conditions:** | A new major is enlisted |
| **Main Flow:** | 1. User click the button “Quản Lý Khoa” on the left sidebar.  2. System displays a list of faculties.  3. User click faculty’s name.  4. System displays faculty’s profile.  5. User clicks on button “+” on top of the list of majors.  6. System displays a form which allows user to add a new major.  7. User enters the informations and submits  8. System validates these information.  9. Use Case ends. |
| **Alternative Flow:** | 8a. Missing the required informations  1. Error messages display under these required fields.  2. Use Case resumes in main flow step 5 |
| **Exception Flow:** |  |

Table .: Use Case “Add Major”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC22. |
| **Use Case Name:** | Update Major. |
| **Description:** | This use case allow user to update a specific major. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | 1. User is permitted to access the dashboard.  2. A new faculty is added.  3. A profile of a faculty displays. |
| **Post-conditions:** | The informations of a major is updated. |
| **Main Flow:** | 1. User click the button “Quản Lý Khoa” on the left sidebar.  2. System displays a list of faculties.  3. User click faculty’s name.  4. System displays faculty’s profile.  5. User clicks on button “+” on top of the list of majors.  6. System displays a form which allows user to update a new information.  7. User enters the informations and submits.  8. Use Case ends. |
| **Alternative Flow:** |  |
| **Exception Flow:** |  |

Table .: Use Case “Update Major”.

|  |  |
| --- | --- |
| **Use Case ID:** | UC23. |
| **Use Case Name:** | Delete Major. |
| **Description:** | This use case allow user to delete a specific major. |
| **Actor(s):** | Admin |
| **Pre-conditions:** | 1. User is permitted to access the dashboard.  2. A new faculty is added.  3. A profile of a faculty displays. |
| **Post-conditions:** | A major is deleted. |
| **Main Flow:** | 1. User click the button “Quản Lý Khoa” on the left sidebar.  2. System displays a list of faculties.  3. User click faculty’s name.  4. System displays faculty’s profile.  5. User clicks on button “–” on right of the list of majors.  7. System refreshes a list and a deleted major is removed from list.  8. Use Case ends. |
| **Alternative Flow:** | 8a. Missing the required informations  1. Error messages display under these required fields.  2. Use Case resumes in main flow step 5 |
| **Exception Flow:** |  |

Table .: Use Case “Delete Major”

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