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| **Software design** |
| Student Management System |
| Version 1.0 |
| Prepared by class SE1316, Group 5  Hoàng Hồng Quang  Nguyễn Minh Hiếu  Đỗ Huy Hoàng  Đỗ Thành Đạt  April 2, 2020 |

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**Revision history**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Authors** | **Modifications** | **Version** |
| 02-April | Group 5 |  | 1.0 |
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1. **Document description**
2. **SRS overview**

***2.1. List of system users***

***2.2. List of use cases***

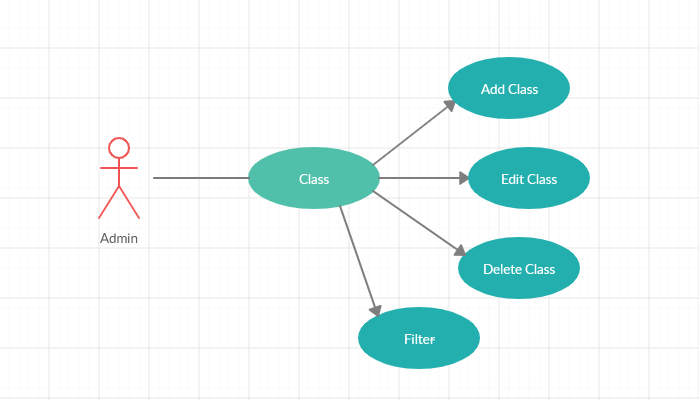
1. Home
2. Class
3. Teacher
4. Student
5. Subject
6. About

***2.3. Use case diagram***

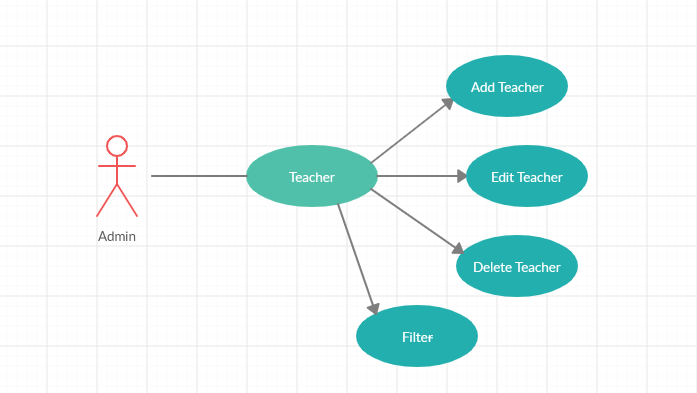
**2.3.1. Preliminary use case diagram**

**2.3.2. Use case detail diagrams**

***2.3.2.1. Use case “Class”***



***2.3.2.2. Use case “Teacher”***

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***2.3.2.3. Use case “Student”***

***2.3.2.4. Use case “Subject”***

***2.4. Activity diagrams of use case scenarios***

**2.4.1. Activity diagram for use case “”**

Check reservations for this book?

Borrow (Update copy type & reservation status)

Reserved by any other user or Borrower is not the first in reservation

Not reserved by any other user or Borrower is the first in reservation

Available

1. **Table details**

Note: Attribute with underline is Primary key

* + 1. **Table name: Student**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| StudentID | Integer | Unlimited | Primary key |
| Name | Nvarchar | 500 | Not null |
| Gender | Boolean | Unlimited | Not null |
| Date Of Birth | Date | Unlimited | Allows null |
| Address | Nvarchar | 500 | Allows null |
| Phone | Nvarchar | 500 | Allows null |
| Email | Nvarchar | 500 | Allows null |

* + 1. **Table name: Class**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| ClassID | Integer | Unlimited | Not null |
| ClassName | Nvarchar | 500 | Not null |

* + 1. **Table name: Mark**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| MarkID | Integer | Unlimited | Not null |
| StudentID | Integer | Unlimited | Not null |
| SubjectID | Integer | Unlimited | Not null |
| Test1 | Integer | Unlimited | Allows null |
| Test2 | Integer | Unlimited | Allows null |
| Test3 | Integer | Unlimited | Allows null |
| FinalTest | Integer | Unlimited | Allows null |

* + 1. **Table name: Study**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| StudyID | Integer | Unlimited | Not null |
| StudentID | Integer | Unlimited | Not null |
| ClassID | Integer | Unlimited | Not null |

* + 1. **Table name: Teach**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| ID | Integer | Unlimited | Not null |
| TeacherID | Integer | Unlimited | Not null |
| SubjectID | Integer | Unlimited | Not null |

* + 1. **Table name: Teacher**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| TeacherID | Integer | Unlimited | Not null |
| Name | Nvarchar | 500 | Allows null |
| Gender | Nchar | 10 | Allows null |
| Date Of Birth | Date | Unlimited | Allows null |
| Address | Nvarchar | 500 | Allows null |
| Phone | Nvarchar | 500 | Allows null |
| Email | Nvarchar | 500 | Allows null |

* + 1. **Table name: Subject**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| SubjectID | Integer | Unlimited | Not null |
| SubjectName | Nvarchar | 500 | Allows null |
| SubjectCode | Nchar | 10 | Allows null |

* + 1. **Table name: Subject**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Type** | **Size** | **Note** |
| ID | Integer | Unlimited | Not null |
| ClassID | Integer | Unlimited | Not null |
| TeacherID | Integer | Unlimited | Not null |

1. **Class diagram (p.61 – p70)**
   1. **List of classes in the Layers**

Layer GUI

Layer DA

Student Database

TeacherDAO

TeacherGUI

ClassGUI

SubjectGUI

StudentGUI

Note: Allow to use

BL: Business logic DT: Data transfer

DA: Data access

Layer DT

Teacher

MainFormGUI

Student

Class

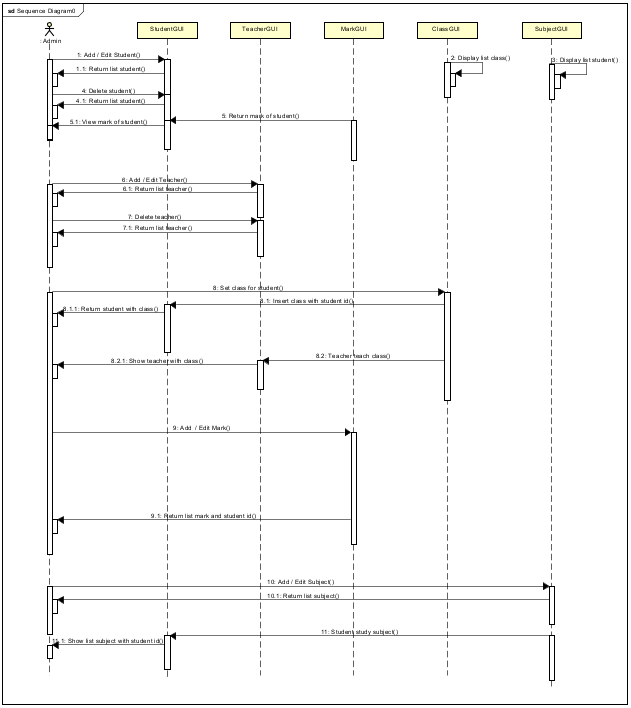
Subject

ClassDAO

StudentDAO

SubjectDAO

* 1. **Modeling the Class Behaviors - sequence diagrams (p. 66, 77)**

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1. **User Interface Model Design**
   1. **User interface model design**

**51.1. Screen “”**

**51.2. Screen “”**

**51.3. Screen “”**

**51.4. Screen “”**

**51.5. Screen “”**

* 1. **Interface Flow Diagrams (p. 51)**

Main form (main menu)

Subject

Class

Teacher

Student

[Click]

[Click]

[Click]

[Click]