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| Design Plan: Certificate Management System | Document Name: Problem Definition | SWD/Form No. 1 |
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DEFINITION OF THE PROBLEM

Problem definition of CERTIFICATE GENERATION SYSTEM Soft

Application:

The Certificate Department works for the "ABC" institute to developing the certification system for the students who have completed the exam. For each student who go to the "ABC" institute for register.

After that the student had registered, they must take an exam for each subject. The role of the exam center will be produce the certificate for the students.

It should also check whether the students have given the exam, if he/she has not given one exam, the certificate for the particular should not get printed instead it should generate the appropriate message to the students for that.

This mean the students have one year after he/she given one exam date, If the exam of the students has been failed or he/she have a special case and must take pause, they will be to take one more exam. The center exam will message the students which extend the date of the exam. If that times the exam is not successful, he/she needs to return registry for that certificate.

This form should be designed in such a way that it should contain name of the institute, name of the student, name of the certificate and exam date.

However, they also wishes that when he/she have issued certificate for the students. So, when he/she get a job or apply to a company. Because of the concern that students are actually granted a certificate at this institute, that company may be look up the information of her/him certificate when it was contact to institute.

The Certificate management system application will be provided the functions:

- User can search Class view description of a selected Class, and Class, update Class and delete Class.
- User will be able to search and generate report of Certificate Type, Student, and Certificate.
- User will be register for the student.

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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: CRS | SWD/Form No. 2A |
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CUSTOMER REQUIREMENT SPECIFICATION DOCUMENT

Client/ Project Undertaken: Certificate Generation System

1. List of inputs to the system

STUDENT (StudentID, StudentName, Address, DOB, Phone, Email, IdentityCard, Gender)

CERTIFICATE (CertificateID, CertificateName, CertificateNum)

STUDENT_CER (StudentID, CertificateID, Exam Date, Result)

DETAIL_CER (SubjectID, SubjectName, CertificateID)

EXAMMARK (StudentID, Exam Date, CertificateID, SubjectID, Mark)

USER (UserID, Fullname, Username Password, Address, DOB, Phone, Email, Gender).

USER_PERMISS (UserID, PerID)

PERMISS (PerID, PerName)

DETAIL_PER (DetPerID, ActionName, PerDate)

2. List of outputs expected from the system

- It should contain fields like (Student, Certificate and Result) will be display in Certificate for the students.
- After testing the student's detail of each certificate. Once the marks of the students is evaluated then the entry of the marks is done in this application system. Exam Center will be enter mark for detail of each certificate then the status of the pass or fail will be display (exam course, mark, detail certificate).

3. Overview of processes involved in the system

- Check registry input from student and login, logout user.
- Get the students selected by admin add to form registered.
- Get detail of each certificate selected by the students add to form result of exam.
- Calculate the mark of each subject for the students and check exam of the student.
- Check valid of the certificate for the students.
- User must create to list of the student who was completed or failed the exam.
- User must create to list of the student who need to reserve that exam course after test date for within a year.
- Check domain, reference of database.
- HELP (*It should display the short explanation of the project in order to guide the end user*).

4. Hardware and software required for implementing the project

• Hardware Requirements:

a. Server:

- CPU: Intel Core i3-2130U, 2.5GHz

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- RAM: 4GB or higher
- HDD: 120GB Hard Disk space or higher
- b. Client:
 - CPU: Intel Core i3-2130U, 2.5GHz
 - RAM: 2GB or higher
 - HDD: 80GB Hard Disk space or higher
- **Software Requirements:**
 - c. Server:
 - Windows Server 2012 R2 (or higher).
 - Microsoft SQL Server 2012 (or higher).
 - JDBC, JDBC Driver 4, JDK 1.8 (or higher).
 - Netbeans IDE 8.2 (or higher).
 - d. Client:
 - Windows 7 (or higher)
 - Microsoft SQL Server 2012 (or higher).
 - JDBC, JDBC Driver, JDK 1.8 (or higher).
 - Netbeans IDE 8.2 (or higher)

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| Design Plan: Certificate Management System | Document Name: Customer's Acceptance Criteria | SWD/Form No. 2B |
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CUSTOMER'S ACCEPTANCE CRITERIA

| S. No | Customer's Acceptance Criteria |
|--------------|--|
| 1. | User Login, logout check valid of form |
| 2. | Enter the mark detail of each certificate from form Marks |
| 3. | Create, update, delete and edit a registry form for the students, users |
| 4. | Design, create, update, modify, security and maintain database system |
| 5. | Produce the certificate for the students |
| 6. | It should generate the appropriate message to the students for the particular should not get certificate for the students. |
| 7. | Here the students result is to be displayed. |
| 8. | Valid of certificate for the students. |
| 9. | Database must back up, update, upgrade regularly. |

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PROJECT PLAN

1. Project Details

- **Name of the Client:** *Certificate Generation System*
- **Date of Project Plan:** October 9th, 2019
- **Project Vision/ Objectives:**

(Define the project vision/ objectives as stated by the client)

Project Vision: *The Certificate Department works for the "ABC" institute to developing the certification system for the students who have completed the exam.*

Project Objectives:

- The solutions to overcome difficult problem of current. They need to increase the efficiency and accuracy.
- Talking pressure off staff who have too much paperwork.
- Ensuring better communication between staff and Certificate department.
- Reducing boring and repetitive task.
- Reducing loss of data.

➤ **Scope:**

(Mention the scope of the project giving the locations that will be covered, processes, range of services, and so on.)

We will develop and implement certificate maps for the Certificate Department works for some center exam. Further, we will analyze and design student support processes and areas that increase students' ability to successfully navigate their way through their educational experience. We will be finished this project about December, 2019.

➤ **Our understanding of the client organization:**

(Give the range of services, functions, overview of processes, and so on.)

To overcome the above problem the organization had finally decided to computerize its certificate department. Organization wants following things to be implemented in the system. Here should be three logins.

- **User registry for the student.**
- **Certificate Cell.**

➤ **Project Organization with Responsibilities and Authorities:**

(Give the name of Project team members their roles and responsibilities.

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| Design Plan: Certificate Management System | Document Name: Project Plan | SWD/Form No. 3 |
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| Members | Role and Responsibilities |
|--------------------|---|
| Nghi Dang Quang | Analyst/ Designer/ Developer/ Tester/ Implementation |
| Khanh Nguyen Le | Analyst/ Implementation / Developer/ Tester |
| Thang To Toan | Analyst/ Designer/ Developer/ Tester |
| Thanh Nguyen Phuoc | Analyst/ Implementation / Developer/ Tester |

2. Project Initiation/ Requirement Documents

(Information required from the Client as inputs regarding his system; could be the information about his services, processes.)

Generate information about Certificate for the students.

3. Deliverables

(The documents to be handed over to the client – like CRS, Design Document, Installation Manual, User Manual, Maintenance Manual, and Code documents.).

- Code and some files *.jar, *.sql, *.mdf, *.ldf

4. Project Dependencies

(Any event or task outside the scope of the project, which will affect the success of the project.)

- Depend on Data input
- Depend on System performance
- Depend on User
- Depend on Security Procedures

5. Major Project Milestones

(Generating CRS, Building a Prototype.)

- Keep Satisfied
- Keep Interested
- Data entry Staff Receptionists
- Manage closely

6. Quality Plan

- **Review Activities** (Review meeting participants, frequency): We will be meet participants about at least twice a week, each meeting there is a check for each member in group to review processing, help to solve and trouble

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- **Testing Activities** (Final Test): Test spell design document, test case design DFD and database, Function, Coding and Demo.
- **Backup and recovery strategies** (in case of disk crash, network failures): Save files on device storage (USB, HDD) and use GitHub to synchronize all document relative of project. Each member store a copy of project in their own computer and one in their mail drive.

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|---|--|------------------------|
| Design Plan: Certificate Management System | Document Name: GUI Standards Document | SWD/Form No. 4 |
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DOCUMENT DESIGN

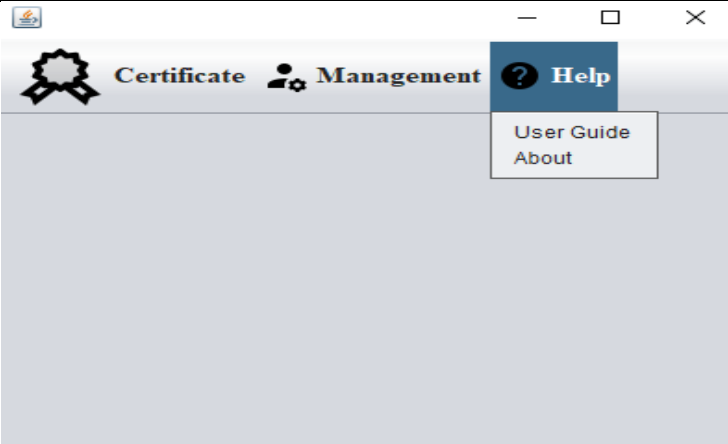
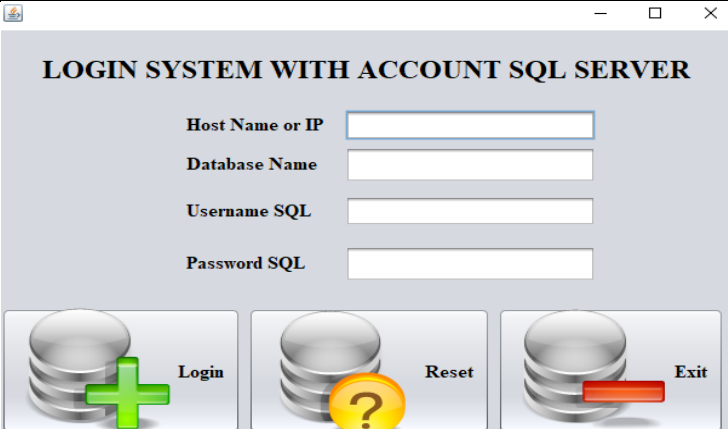
| PROPERTY | VALUE |
|--|-----------------|
| Document theme and color scheme | None |
| Form-Background color | Light Gray |
| Title-Font Size | 16 |
| Title-Font Color | Blue |
| Title-Font Style | Times New Roman |
| Title-Alignment | Center |
| Background color of Controls on the form | White |
| Foreground color of Controls on the form | Black |
| Control Caption – Font Size | 16 |
| Control Caption – Font Color | Black |
| Control Caption – Font Style | Times New Roman |
| Control caption and controls-Alignment | Left |
| Command button-Alignment | Center |

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| Design Plan: Certificate Management System | Document Name: Interface Design Document | SWD/Form No. 5 |
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INTERFACE DESIGN DOCUMENT

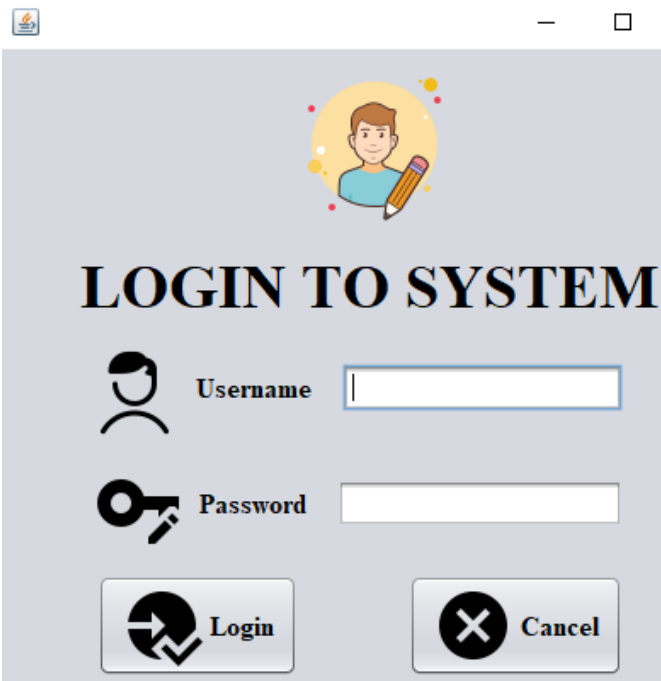
1. List of form to be created

| Document Name | Description | Controls on the Document |
|---------------|---|--------------------------|
| frDatabase |  | |
| frLogSQL |  | |

| | | |
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| | Prepared By (Student) | Approved By (Teacher) |
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Certificate Generation

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| | |
|--------------------|--|
| frUserlogin |  |
|--------------------|--|


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frManager


 Management Student


 Management Certificate

 Registry

 Management Exam Course


 Management Subject


 Entry Mark

 Report Exam


Certificate Check


Please enter ID Pass Code for check


 Search


 LogOut


frRegister



 Roll No :


 Full Name :


 Passport ID :


 E-mail :

 Phone :


 Exam Course :  Exam Date :


 Certificate ID :


 Registry


 Close



frEnMark


 Roll No :


 Full Name :


 Exam Course :


 Certificate ID :


 Detail Subject :  Mark:


 Add

 Edit

 Save

 Reset

 Delete

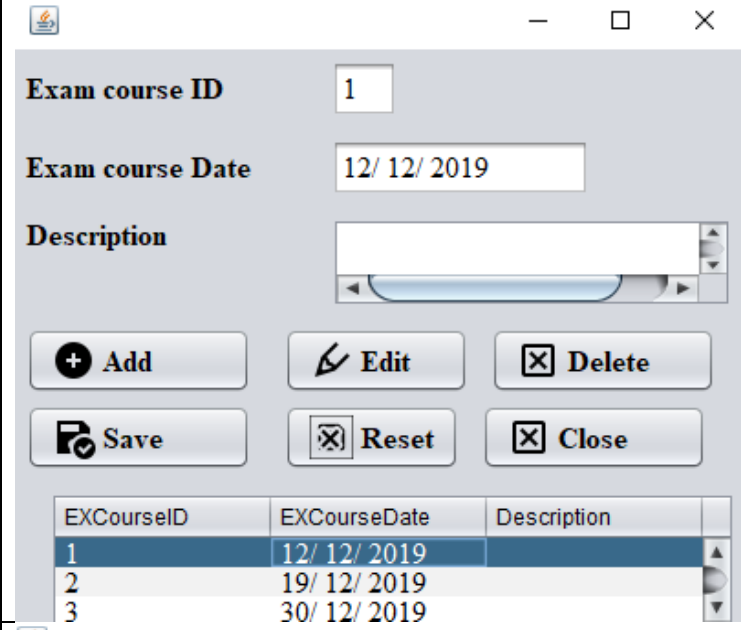
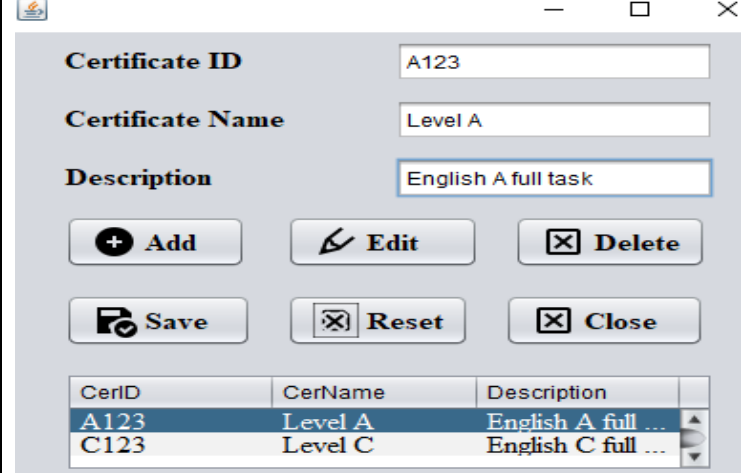
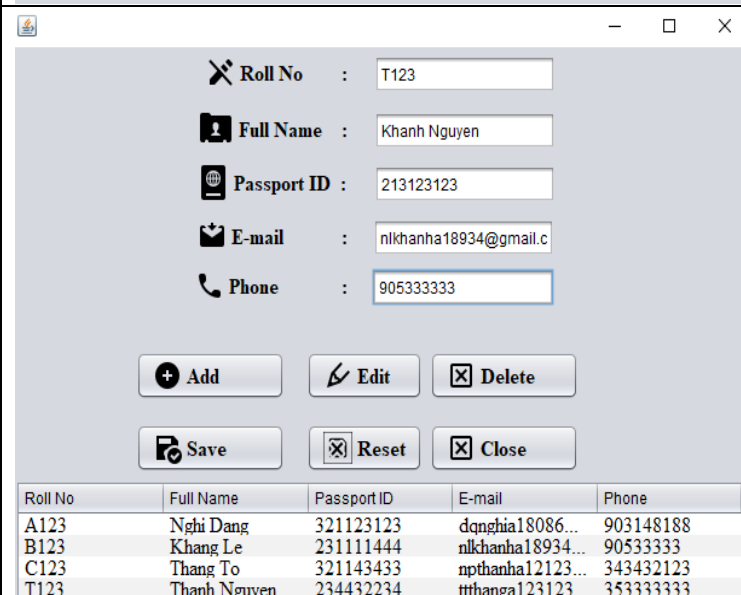
 Close

| RollNo | Full Name | Exam Course | Certificate Na... | Detail Subject | Mark |
|--------|-----------|-------------|-------------------|----------------|------|
| A123 | A Nguyen | A1 | Level A | Listening | 60 |
| A123 | A Nguyen | A1 | Level A | Reading | 30 |
| A123 | A Nguyen | A1 | Level A | Speaking | 90 |
| A123 | A Nguyen | A1 | Level A | Writing | 50 |

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Certificate Generation

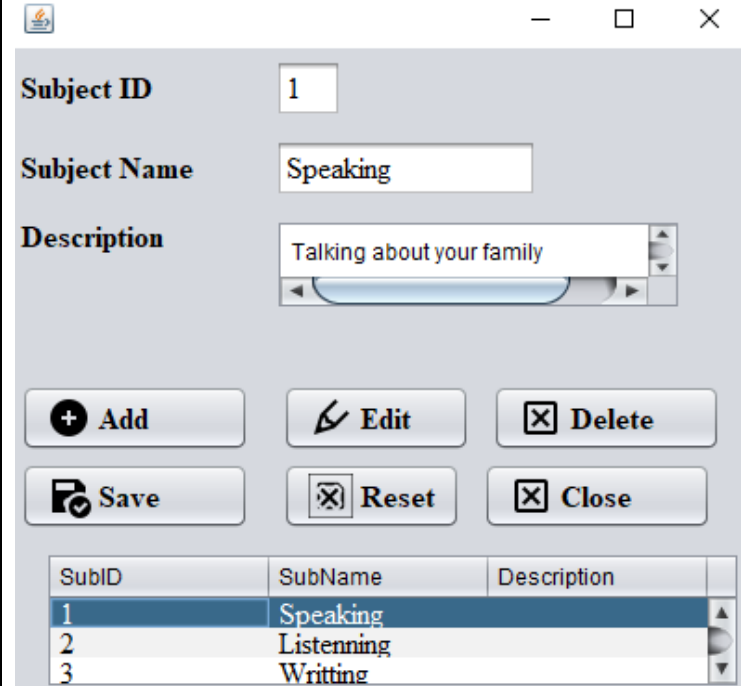
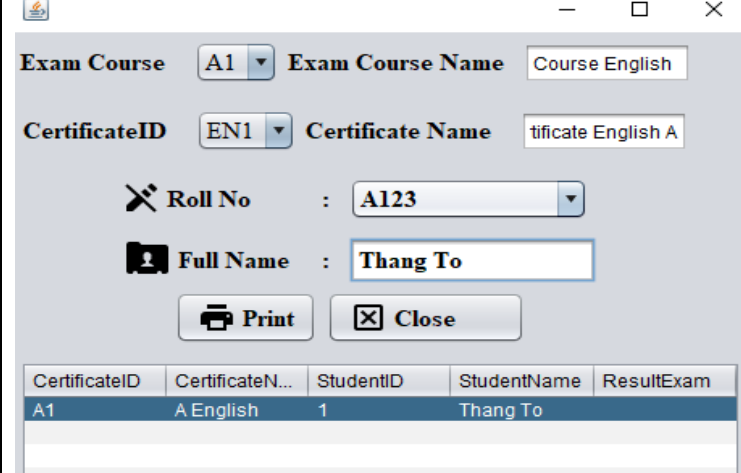
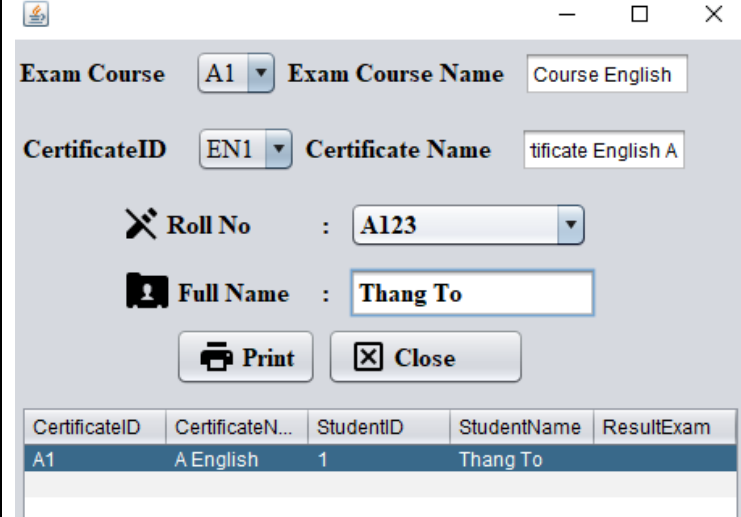
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| Design Plan: Certificate Management System | Document Name: Interface Design Document | SWD/Form No. 5 |
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| frMCourse |  <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>EXCourseID</th> <th>EXCourseDate</th> <th>Description</th> </tr> </thead> <tbody> <tr style="background-color: #e0e0e0;"> <td>1</td> <td>12/ 12/ 2019</td> <td></td> </tr> <tr> <td>2</td> <td>19/ 12/ 2019</td> <td></td> </tr> <tr> <td>3</td> <td>30/ 12/ 2019</td> <td></td> </tr> </tbody> </table> | EXCourseID | EXCourseDate | Description | 1 | 12/ 12/ 2019 | | 2 | 19/ 12/ 2019 | | 3 | 30/ 12/ 2019 | | | | | | | | | | | | | | | |
|-------------------|---|--------------------|------------------|-------------|--------|--------------|--------------------|-----------|--------------|--------------------|-----------|--------------|----------|------------|------------------|-----------|------|----------|-----------|------------------|-----------|------|--------------|-----------|----------------|-----------|--|
| EXCourseID | EXCourseDate | Description | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 12/ 12/ 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 19/ 12/ 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 30/ 12/ 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| frMCertifi |  <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>CerID</th> <th>CerName</th> <th>Description</th> </tr> </thead> <tbody> <tr style="background-color: #e0e0e0;"> <td>A123</td> <td>Level A</td> <td>English A full ...</td> </tr> <tr> <td>C123</td> <td>Level C</td> <td>English C full ...</td> </tr> </tbody> </table> | CerID | CerName | Description | A123 | Level A | English A full ... | C123 | Level C | English C full ... | | | | | | | | | | | | | | | | | |
| CerID | CerName | Description | | | | | | | | | | | | | | | | | | | | | | | | | |
| A123 | Level A | English A full ... | | | | | | | | | | | | | | | | | | | | | | | | | |
| C123 | Level C | English C full ... | | | | | | | | | | | | | | | | | | | | | | | | | |
| frMStudent |  <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Roll No</th> <th>Full Name</th> <th>Passport ID</th> <th>E-mail</th> <th>Phone</th> </tr> </thead> <tbody> <tr> <td>A123</td> <td>Nghi Dang</td> <td>321123123</td> <td>dqngghia18086...</td> <td>903148188</td> </tr> <tr> <td>B123</td> <td>Khang Le</td> <td>2311111444</td> <td>nlkhanha18934...</td> <td>905333333</td> </tr> <tr> <td>C123</td> <td>Thang To</td> <td>321143433</td> <td>npthanha12123...</td> <td>343432123</td> </tr> <tr> <td>T123</td> <td>Thanh Nguyen</td> <td>234432234</td> <td>ttthanga123123</td> <td>353333333</td> </tr> </tbody> </table> | Roll No | Full Name | Passport ID | E-mail | Phone | A123 | Nghi Dang | 321123123 | dqngghia18086... | 903148188 | B123 | Khang Le | 2311111444 | nlkhanha18934... | 905333333 | C123 | Thang To | 321143433 | npthanha12123... | 343432123 | T123 | Thanh Nguyen | 234432234 | ttthanga123123 | 353333333 | |
| Roll No | Full Name | Passport ID | E-mail | Phone | | | | | | | | | | | | | | | | | | | | | | | |
| A123 | Nghi Dang | 321123123 | dqngghia18086... | 903148188 | | | | | | | | | | | | | | | | | | | | | | | |
| B123 | Khang Le | 2311111444 | nlkhanha18934... | 905333333 | | | | | | | | | | | | | | | | | | | | | | | |
| C123 | Thang To | 321143433 | npthanha12123... | 343432123 | | | | | | | | | | | | | | | | | | | | | | | |
| T123 | Thanh Nguyen | 234432234 | ttthanga123123 | 353333333 | | | | | | | | | | | | | | | | | | | | | | | |

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Certificate Generation

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| | | |
|-------------------|--|--|
| frMSubject |  | |
| frMReport |  | |
| frMPrint |  | |

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frMSearch

The screenshot shows a Java Swing window titled "frMSearch". It contains several input fields and buttons. At the top, there are two rows of labels and inputs: "Exam Course" with a dropdown menu showing "A1" and "Exam Course Name" with a text field containing "Course English". Below these are "CertificateID" with a dropdown showing "EN1" and "Certificate Name" with a text field containing "tificate English A". Further down, there are two rows of labels and inputs: "Roll No" with a dropdown showing "A123" and "Full Name" with a text field containing "Thang To". At the bottom of the form area are two buttons: "Print" and "Close". Below the form area is a table with the following data:

| CertificateID | CertificateN... | StudentID | StudentName | ResultExam |
|---------------|-----------------|-----------|-------------|------------|
| A1 | A English | 1 | Thang To | |

| | | |
|--|------------------------------|------------------------------|
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Certificate Generation

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| Design Plan: Certificate Management System | Document Name: Table Design Document | SWD/Form No. 6 |
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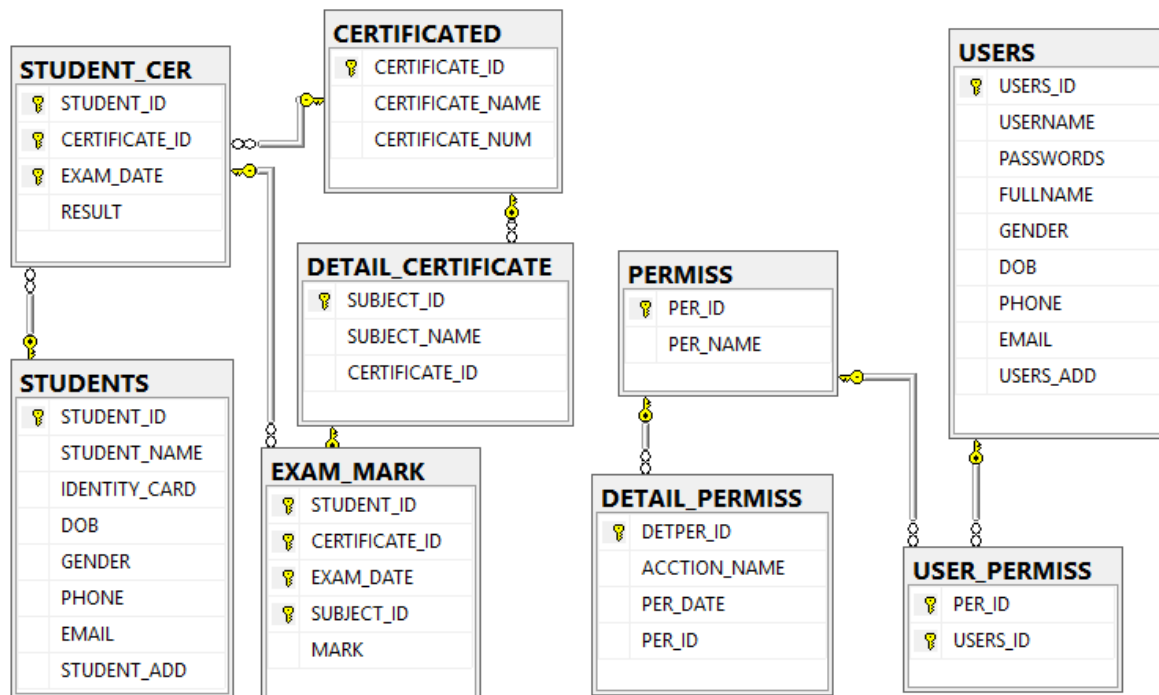
1. Database Structure

| Name of the Table | Table Description | Number of Fields | Primary Key | Related Tables | Foreign Key |
|-------------------|-------------------|------------------|--|--|--|
| Student | | 8 | StudentID | Subject, Exammark | |
| Certificate | | 3 | CertificateID | Student_Cer Subject, Exammark | |
| Student_Cer | | 4 | StudentID, ExamDate, CertificateID | Student, Certificate, Examresult, Exammark | <u>StudentID, CertificateID</u> |
| Detail_CER | | 3 | SubjectID | Certificate, Examresult, Exammark | CertificateID |
| ExamMark | | 5 | StudentID, CourseID, CertificateID, SubjectID | Student_Cer Subject | StudentID, ExamDate, CertificateID, SubjectID |
| Users | | 8 | UserID | | |
| Permiss | | 2 | PerID | DetailPer | |
| User_Per | | 2 | UserID, PerID | Permis, Users | UserID, PerID |
| DetailPer | | 4 | DetperID | Permiss | PerID |

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2. Algorithms and data structures



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| | Prepared By (Student) | Approved By (Teacher) |
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|---|---|------------------------|
| Design Plan: Certificate Management System | Document Name: Process Design Document | SWD/Form No. 7 |
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PROCESS DESCRIPTION DOCUMENT

1. ER Diagram

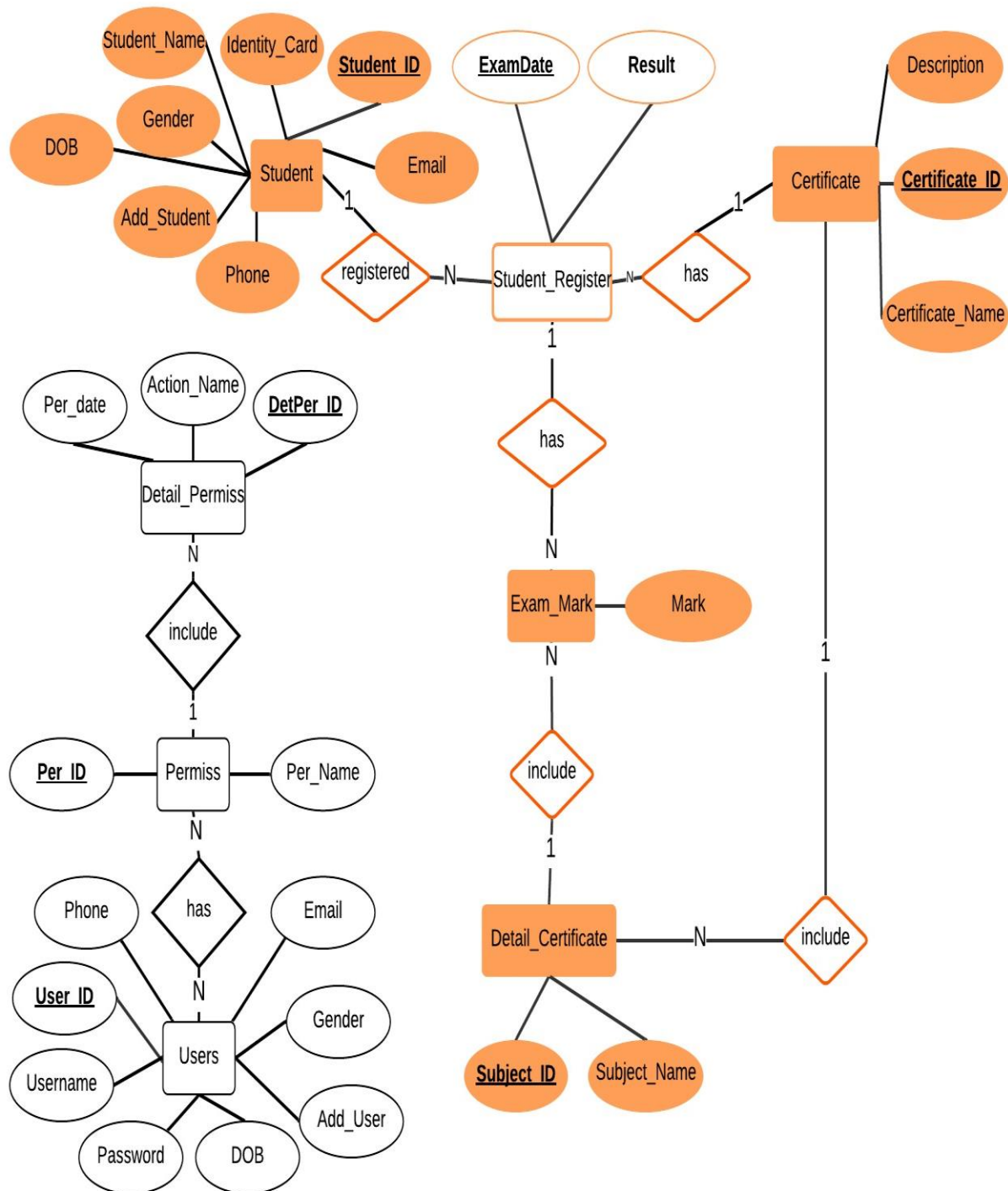


Figure FormNo7.1: ERD

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 2 of 19 |

2. Data Flow Diagram Context.

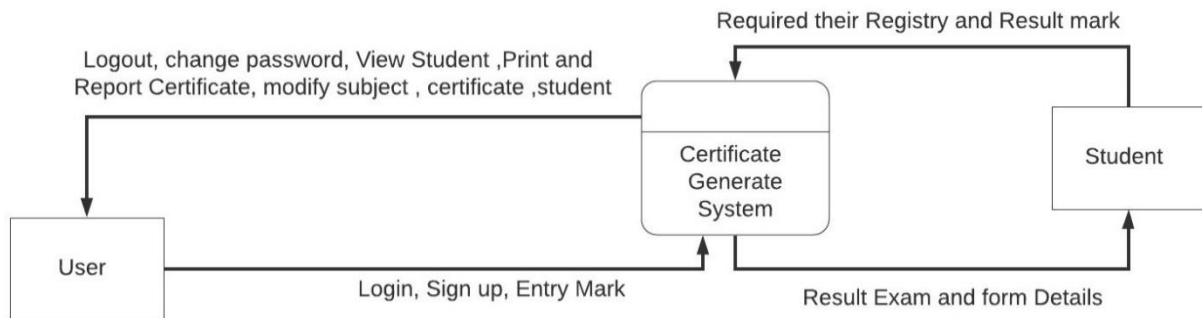


Figure FormNo7.2: DFD Level 1

Process Name: DFD context.

Process Description and Details:

2.1 DFD System:

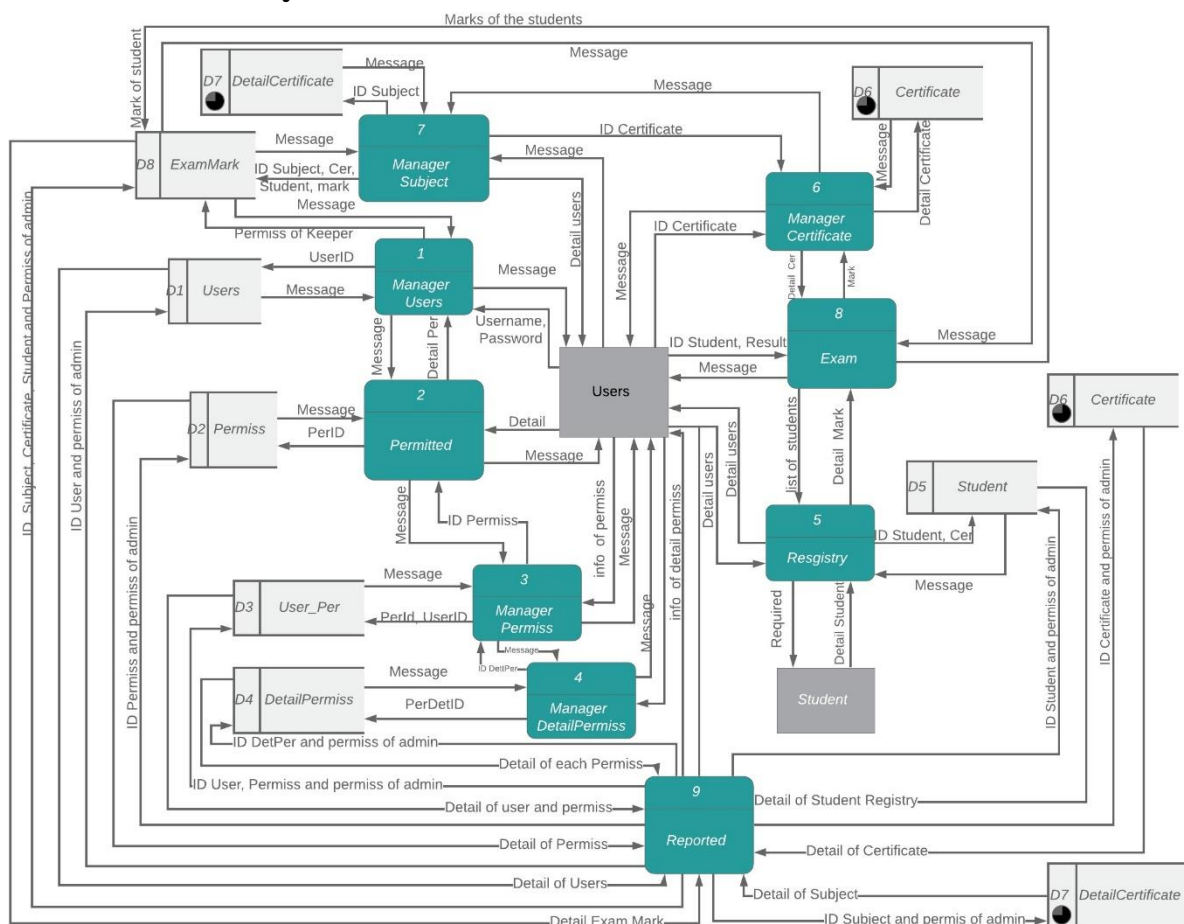


Figure FormNo7.2: DFD Level 1

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 3 of 19 |

2.2 DFD process 1

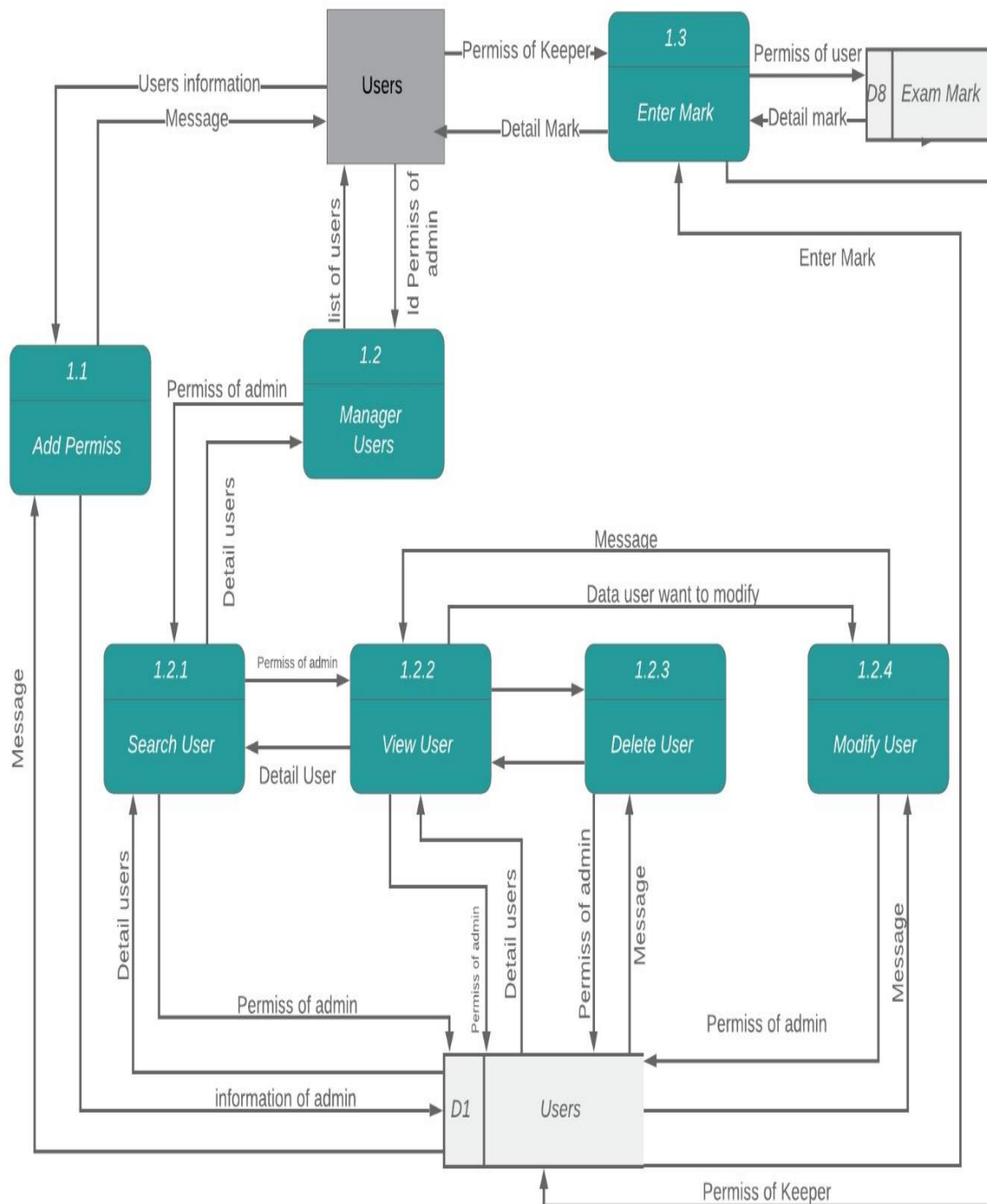


Figure FormNo7.2: DFD Level 1.1

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 4 of 19 |

2.3 DFD process 5

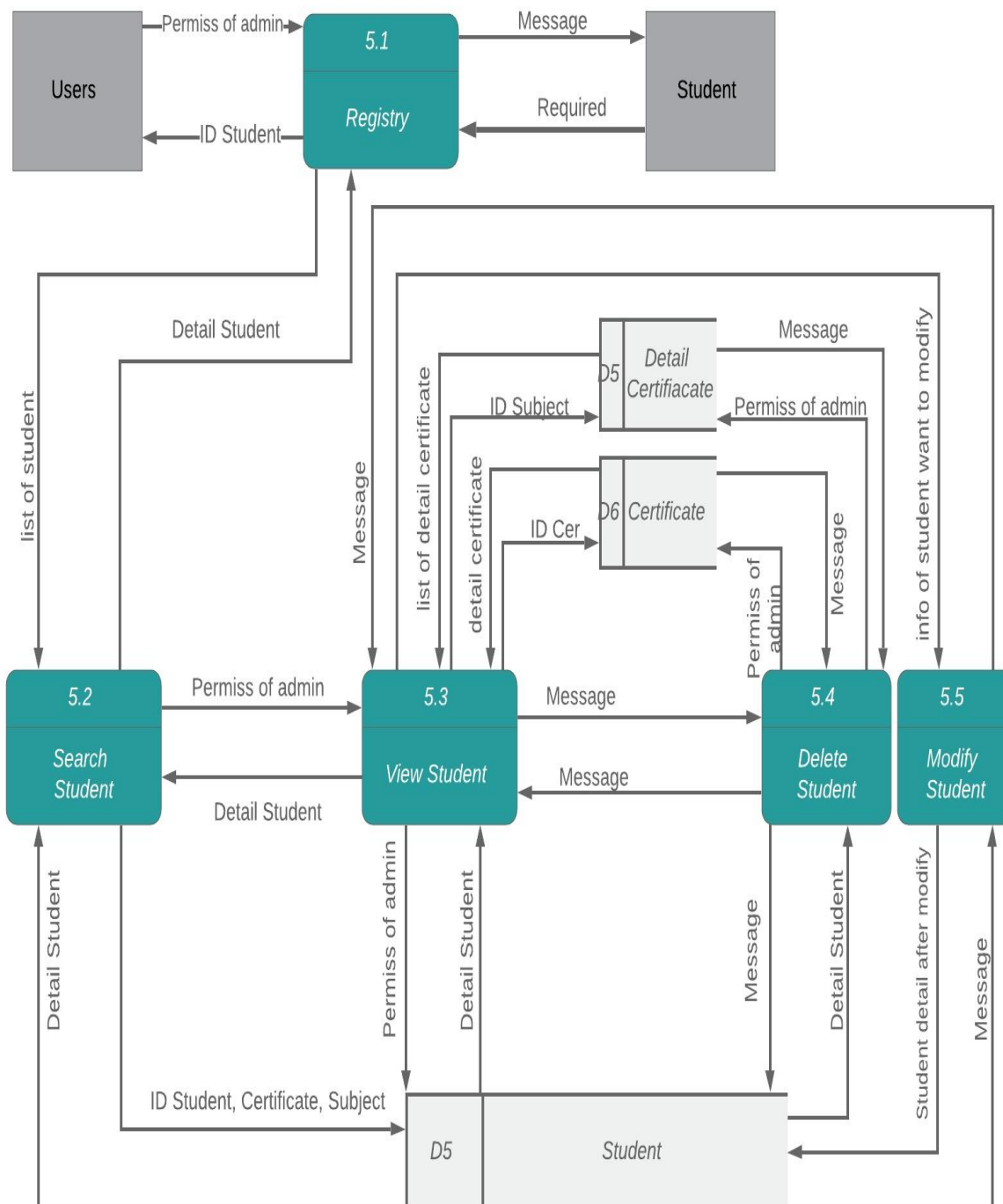


Figure FormNo7.2: DFD Level 1.5

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 5 of 19 |

2.4 DFD process 8

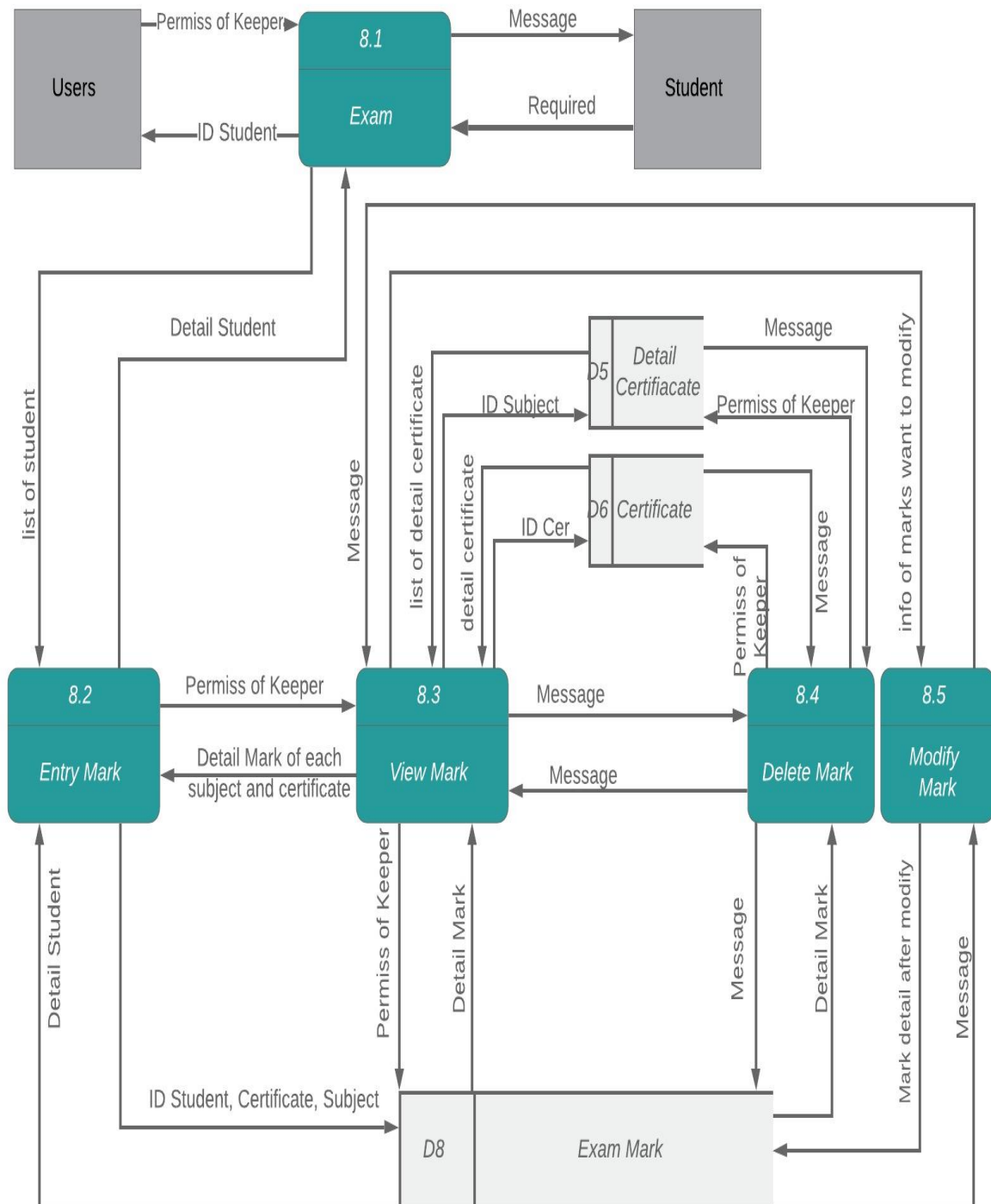


Figure FormNo7.2: DFD Level 1.8

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 6 of 19 |

2.5 DFD process 6

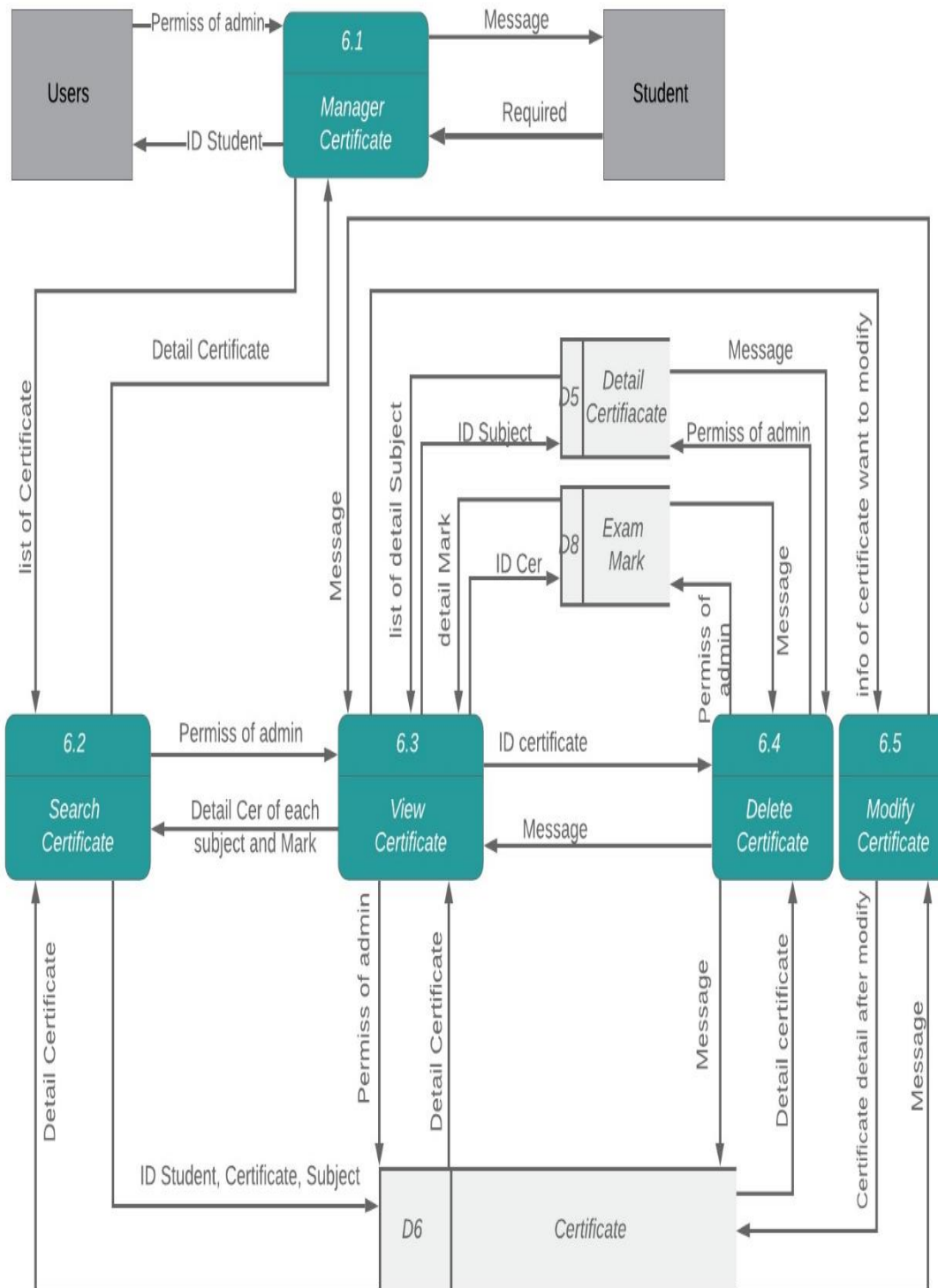


Figure FormNo7.2: DFD Level 1.6

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 7 of 19 |

2.6 DFD process 7

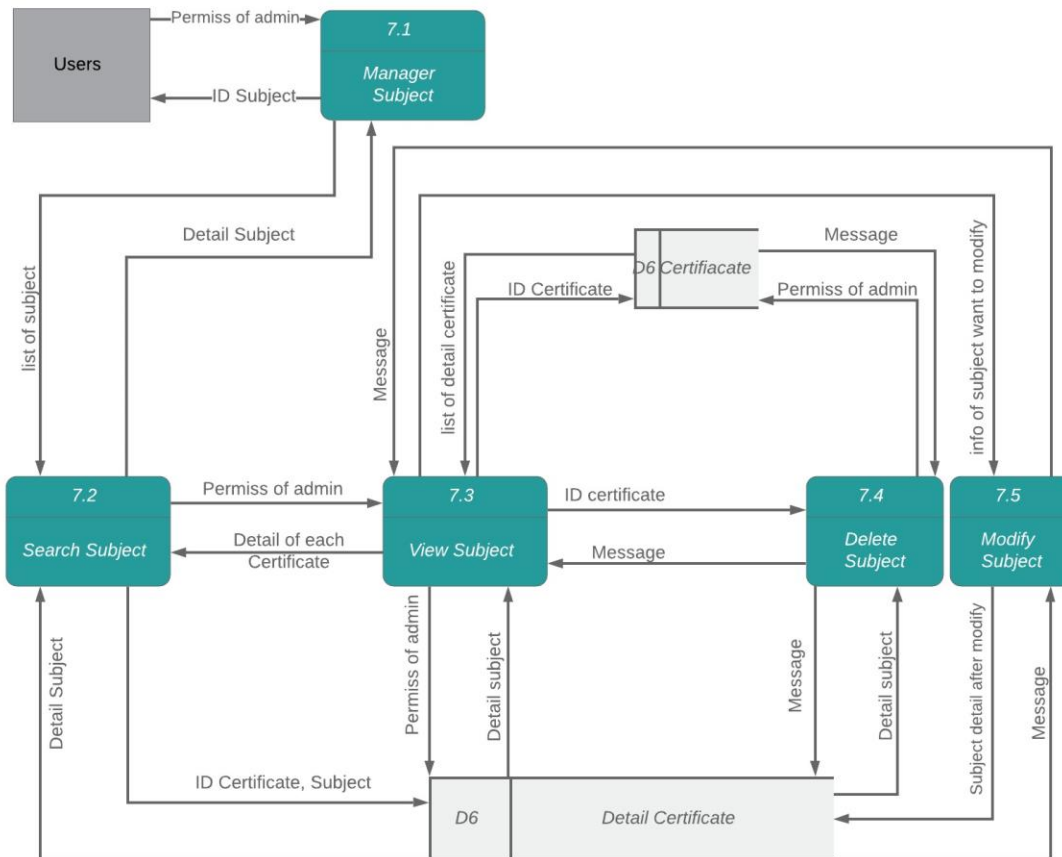


Figure FormNo7.2: DFD Level 1.7

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |


```

    usecaseDiagram
        actor Users
        actor D1 as D1 Users
        actor D2 as D2 Permiss
        actor D3 as D3 User_Per

        usecase 3.1 as 3.1 Manager Permiss
        usecase 3.2 as 3.2 Search User_Per
        usecase 3.3 as 3.3 View User_Per
        usecase 3.4 as 3.4 Delete User_Per
        usecase 3.5 as 3.5 Modify User_Per

        Users->>3.1: Permissions of admin
        3.1-->>Users: ID User, Permiss

        3.1->>3.2: list of user and permiss

        3.2->>3.3: Permissions of admin
        3.2->>3.3: Detail of each User and Permiss

        3.3->>3.4: ID certificate
        3.3->>3.4: Message

        3.4->>3.5: Message

        3.5->>3.4: info of user want to modify

        3.4->>3.3: Permiss of admin
        3.4->>3.3: Message

        3.3->>3.2: Detail user and permiss

        3.3->>D3: Permiss of admin
        3.3->>D3: Detail User and Permiss

        D3->>3.4: Detail User and Permiss

        D3->>3.5: user and permiss detail after modify

        D1->>3.3: detail users
        D1->>3.3: ID User

        D2->>3.3: ID Permiss

        D2->>3.4: Permiss of admin
        D2->>3.4: Message
  
```

Figure FormNo7.2: DFD Level 1.3

| | | |
|---|--|------------------------|
| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 9 of 19 |

2.8 DFD process 4

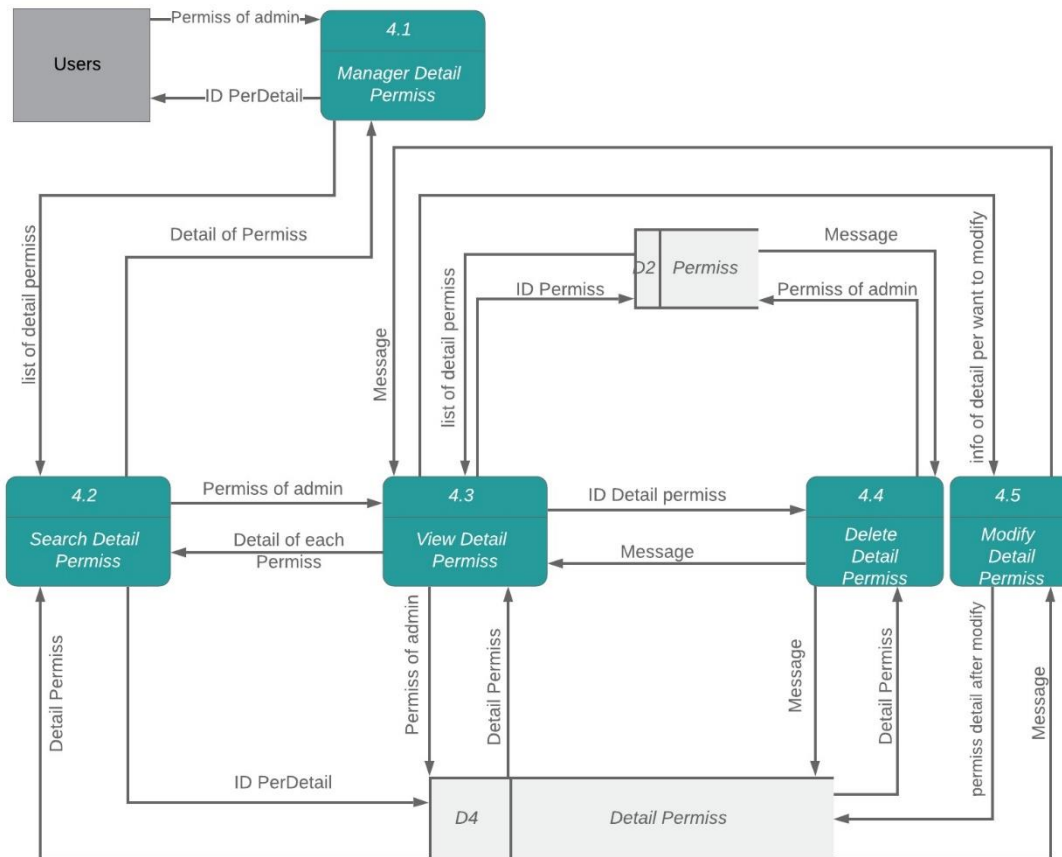


Figure FormNo7.2: DFD Level 1.4

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 10 of 19 |

2.9 DFD process 2

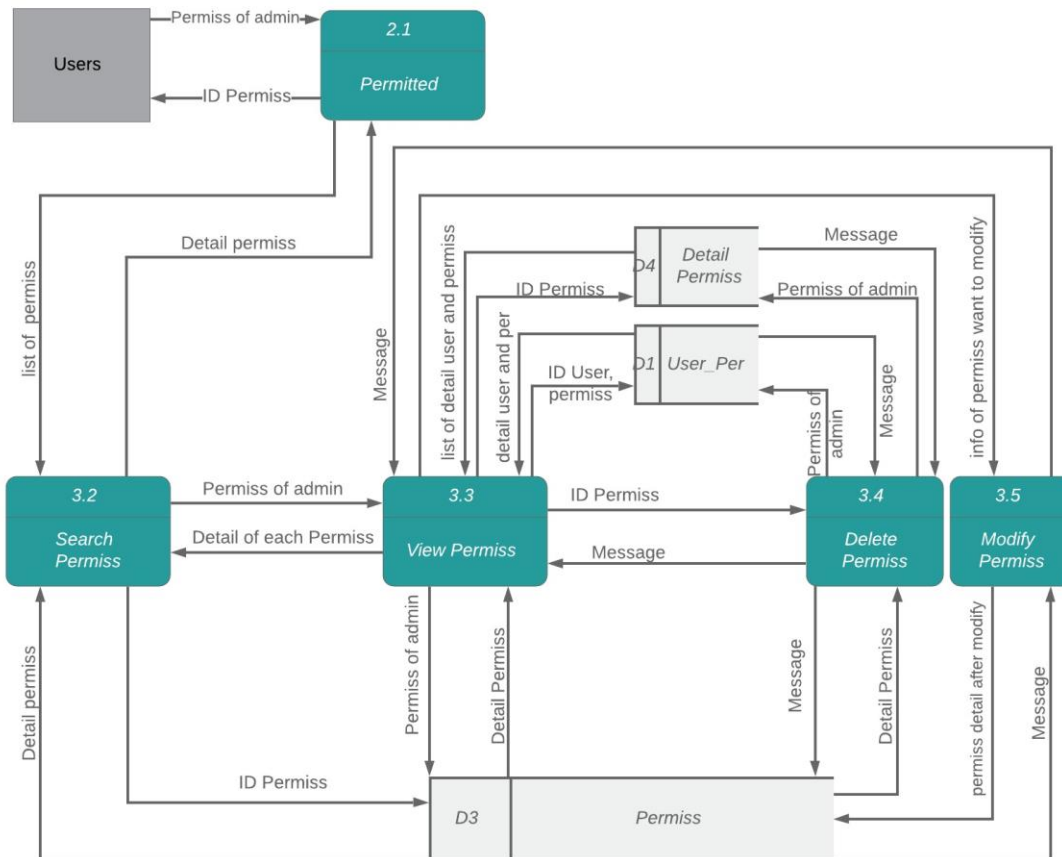


Figure FormNo7.2: DFD Level 1.2

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page 11 of 19 |

2.10 DFD process 10

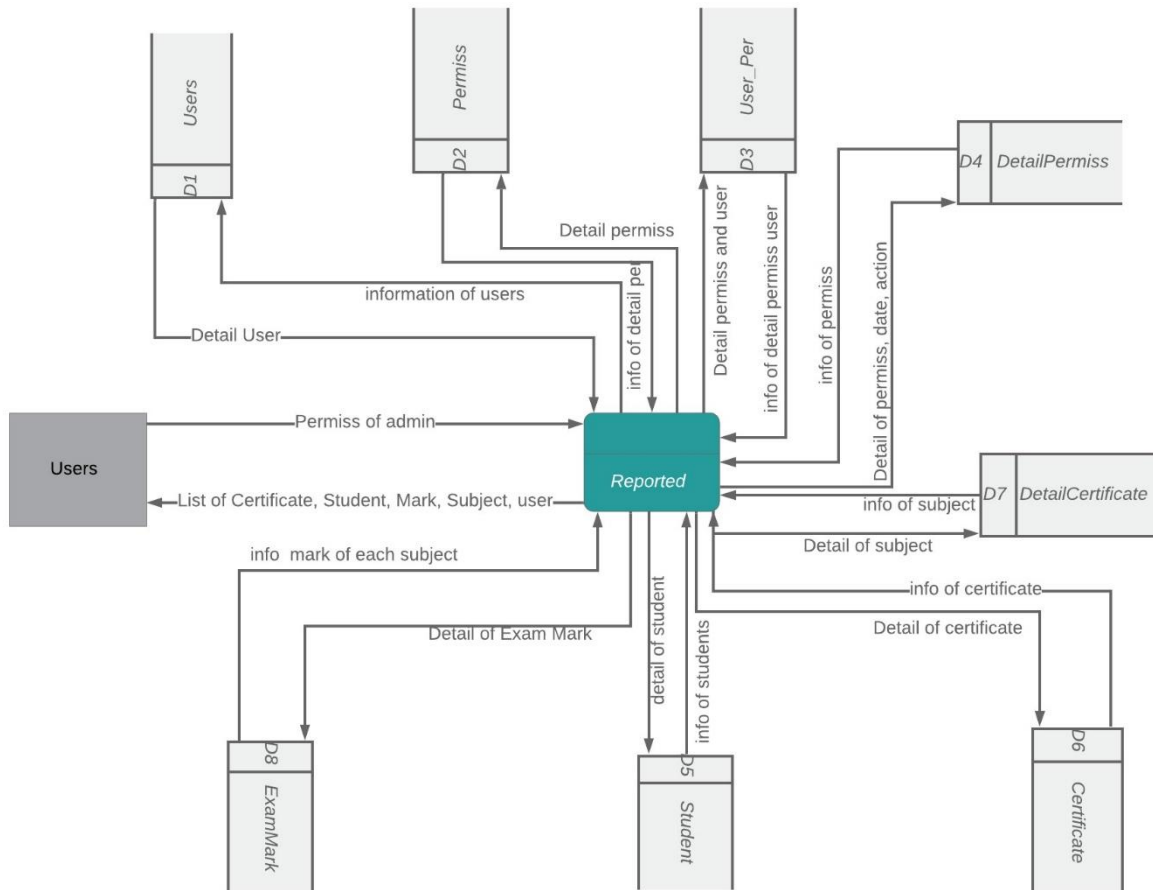


Figure FormNo7.2: DFD Level 1.10

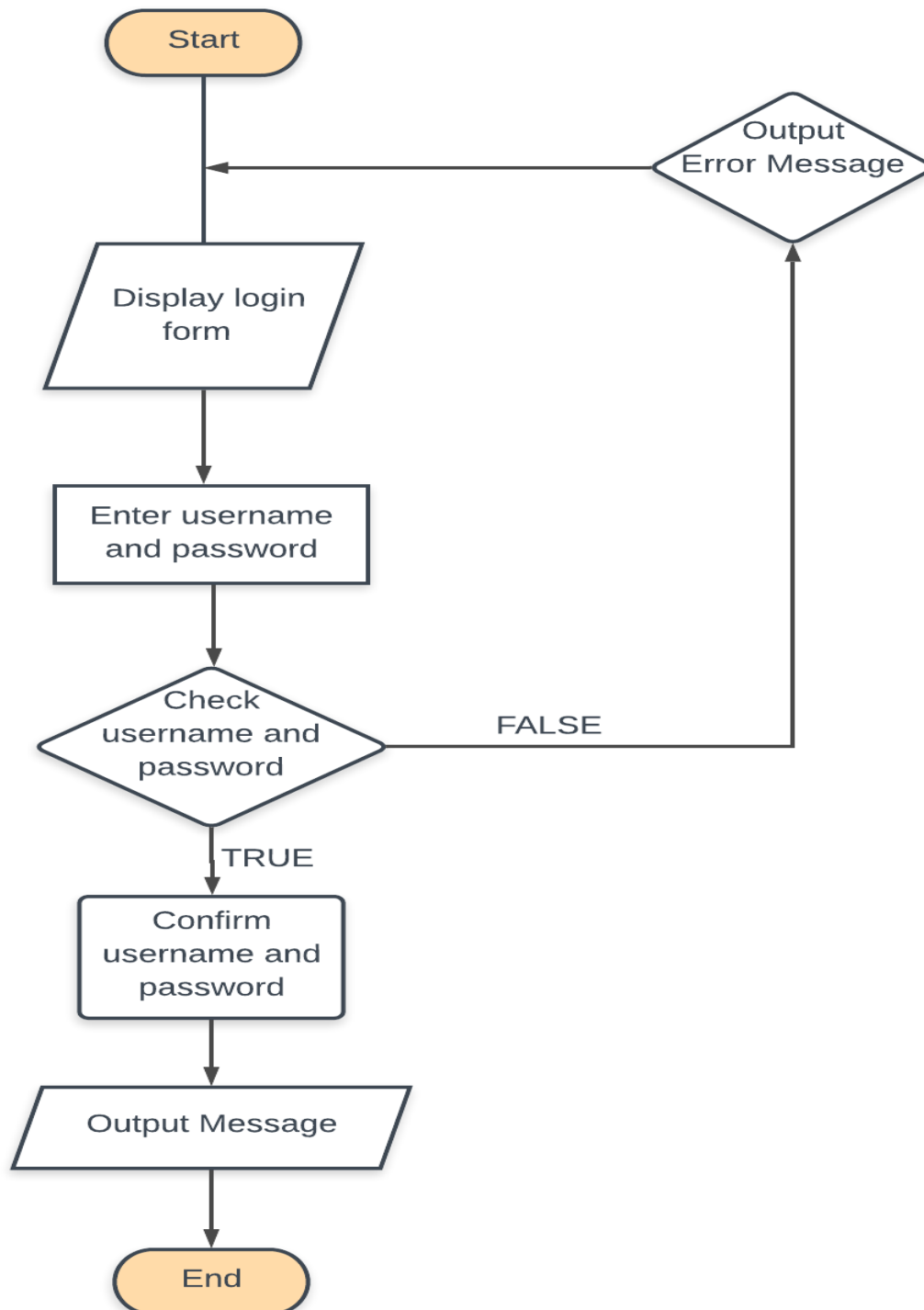
| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No 12 of 19 |

3.1 Process Name Flow Chart:

Process Description and Details:

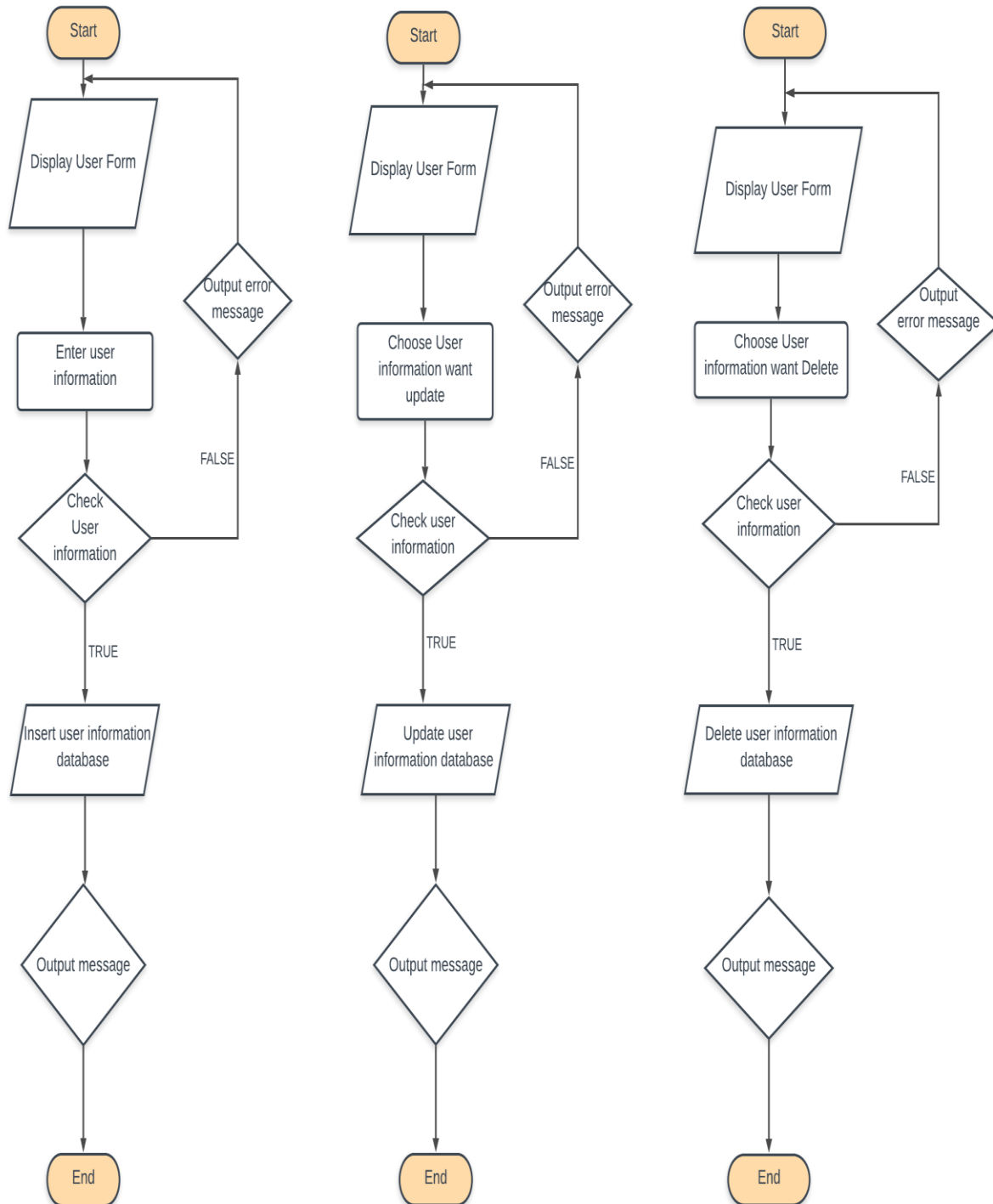
3.1.1 Login System.



| | | |
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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page 13 of 19 |

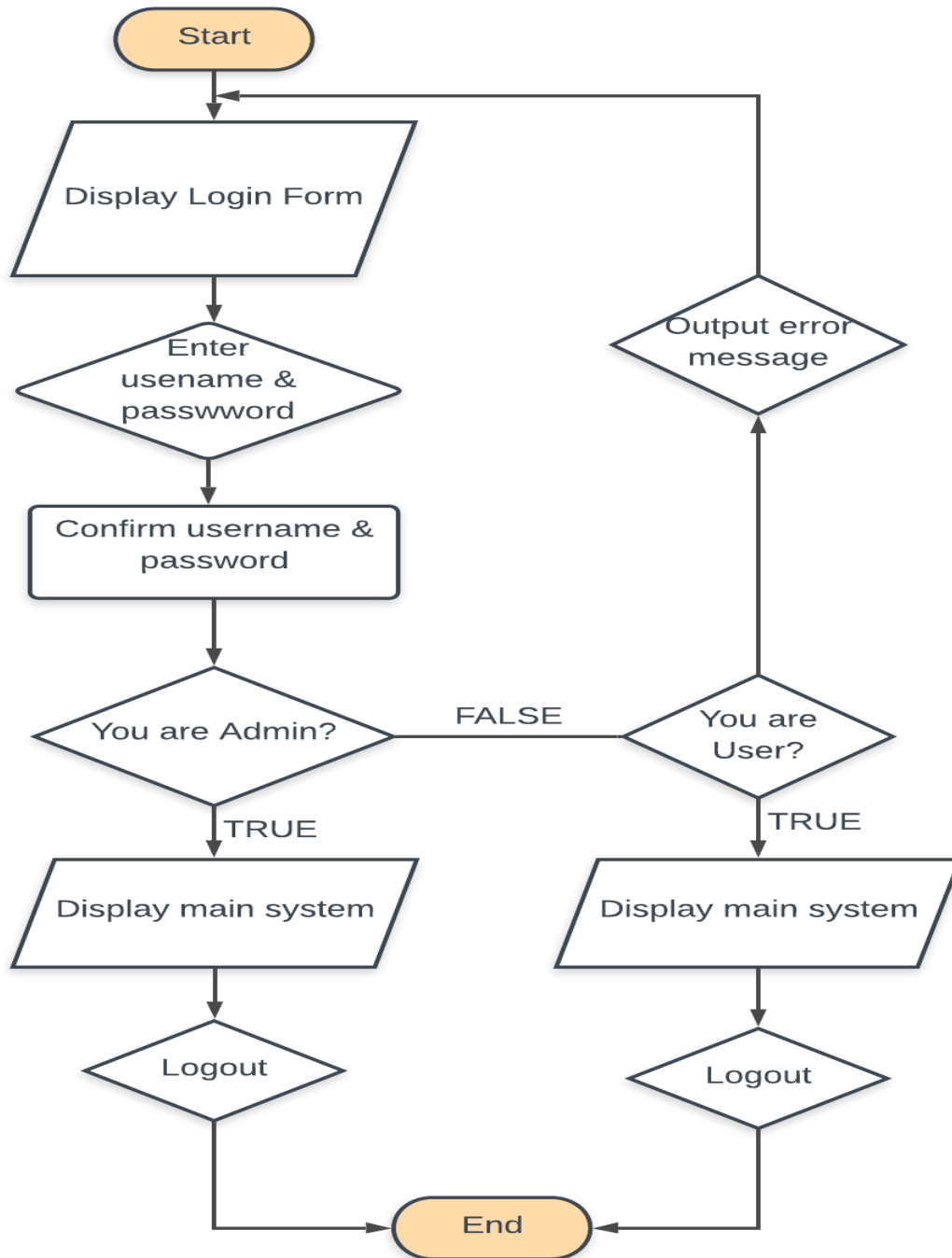
3.1.2 User management



| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page 14 of 19 |

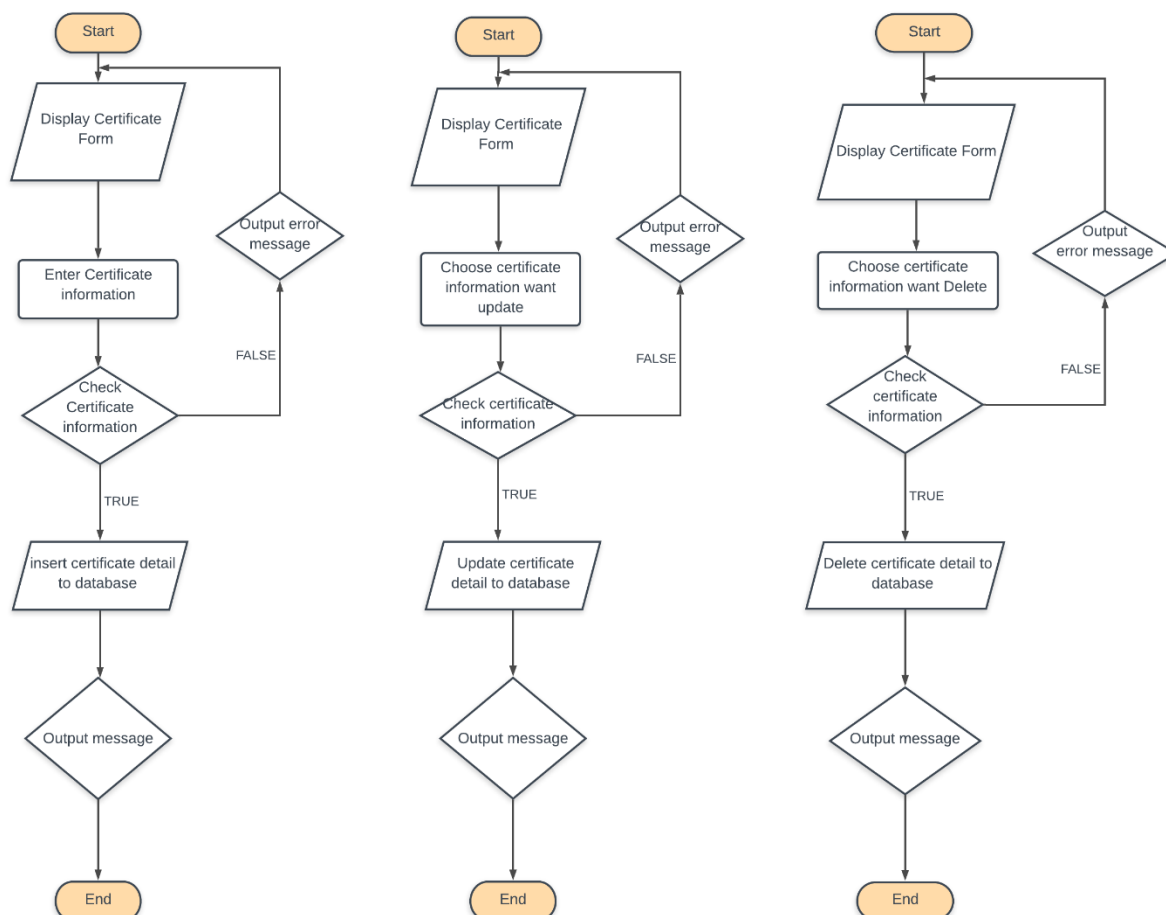
3.1.3 Permits management



| | | |
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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

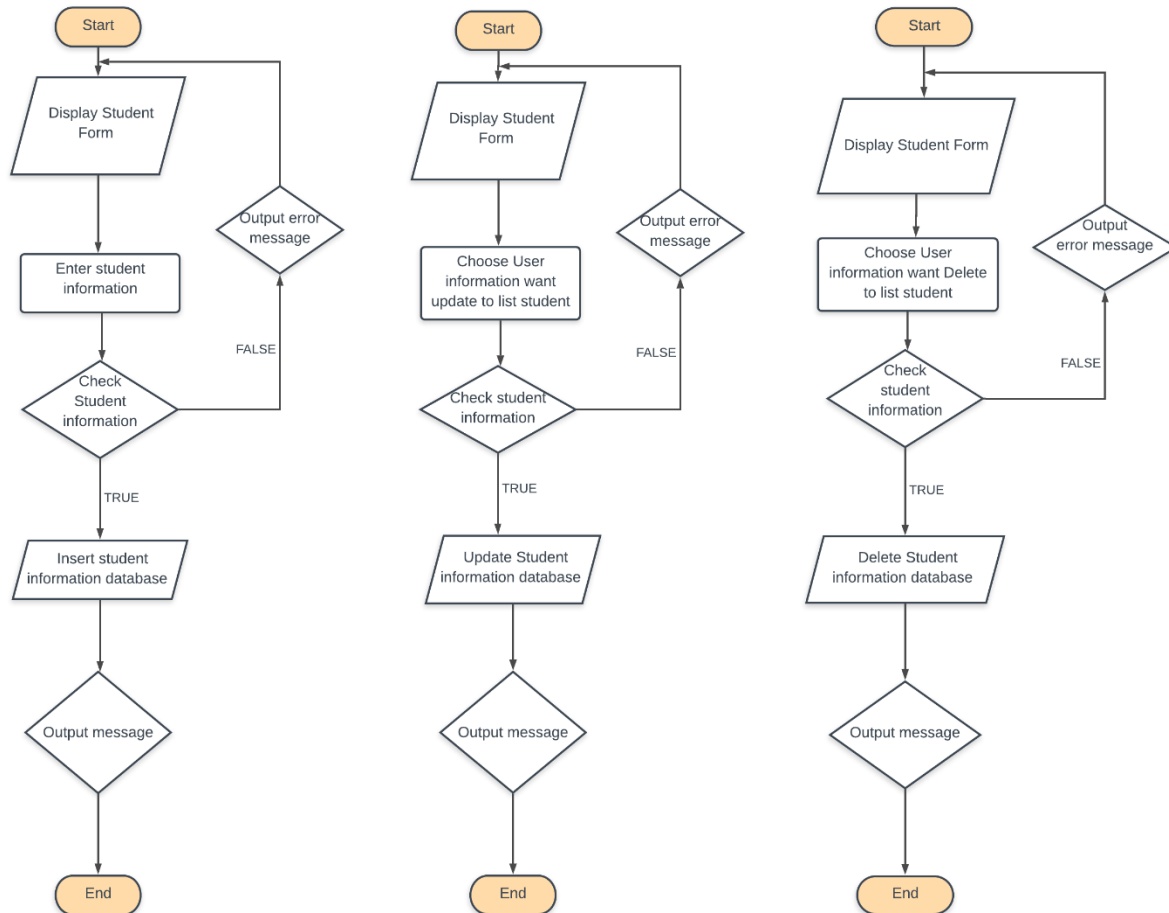
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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page 15 of 19 |

3.1.4 Management certificate



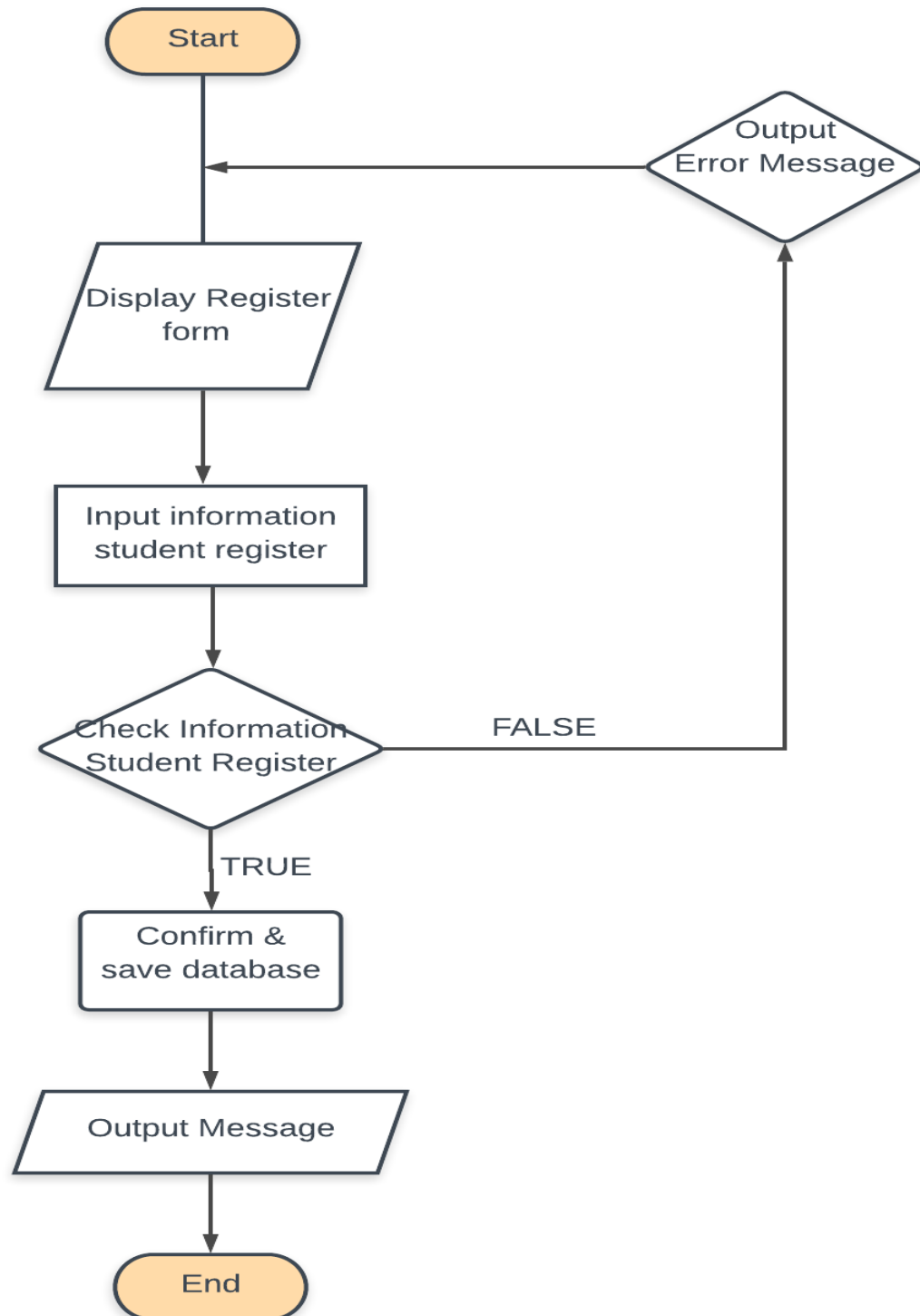
| | | |
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| Design Plan: Certificate Management System | Document Name: Process Design Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 16 of 9 |

3.1.5 Management Student



| | | |
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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page 17 of 19 |

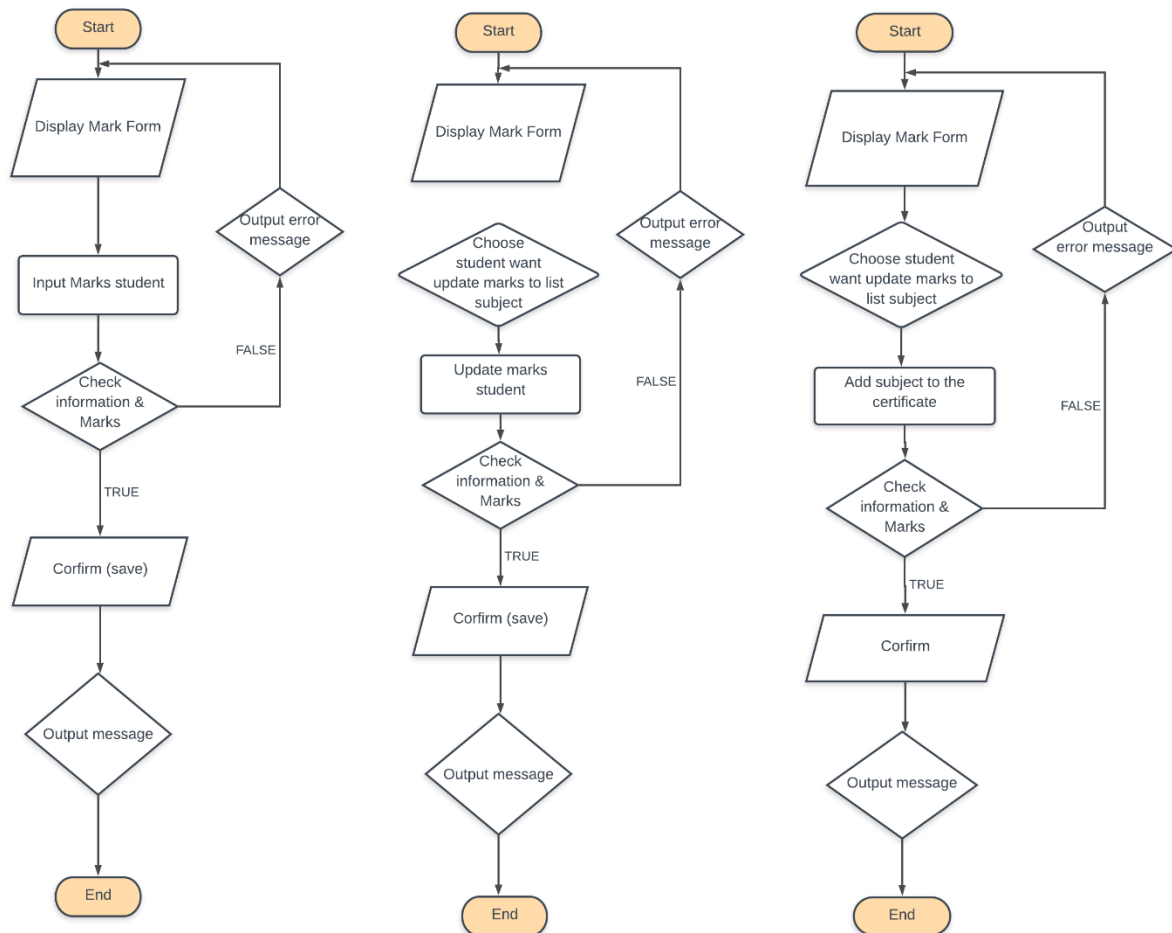
3.1.6 Management Registry



| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

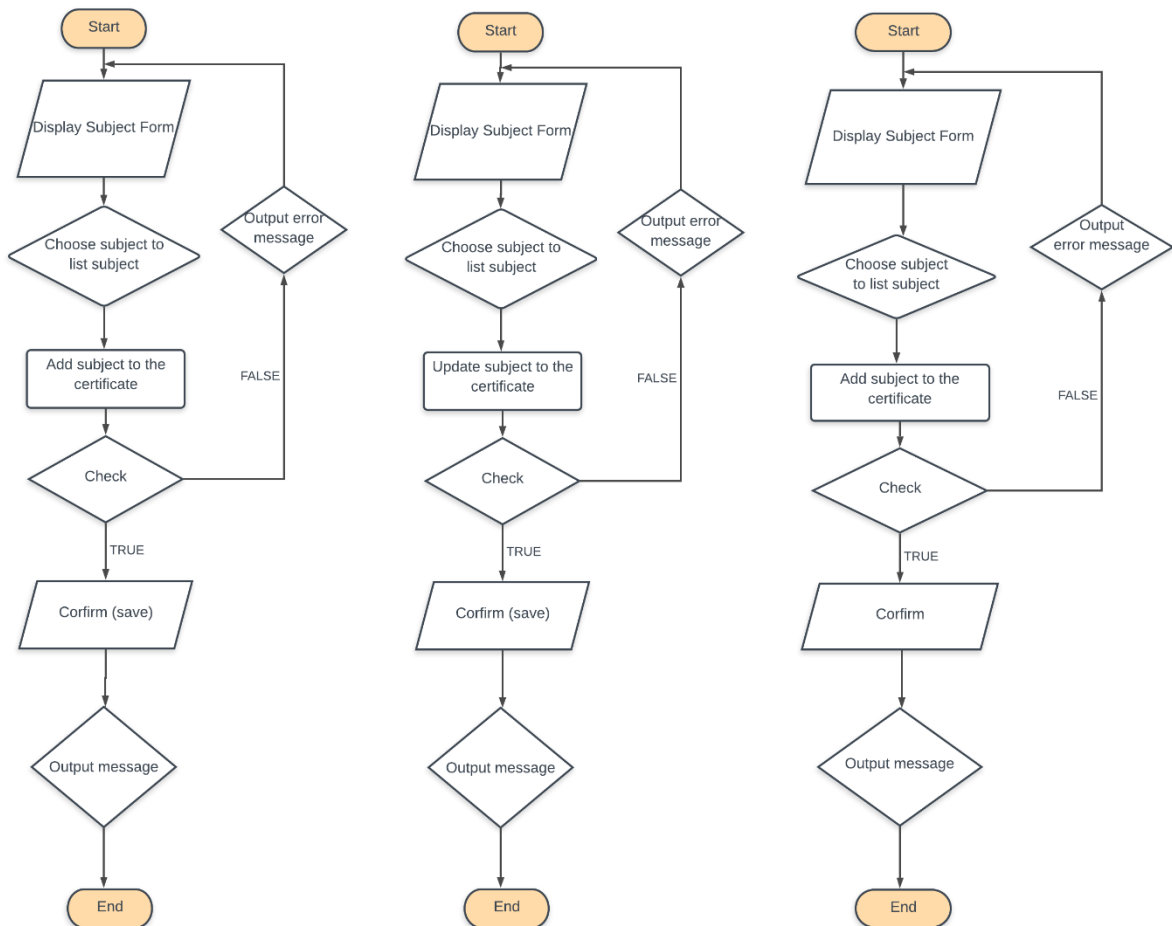
| | | |
|---|--|-----------------------|
| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
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3.1.7 Management Exam Mark



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| Design Plan: Certificate Management System | Document Name: Process Description Document | SWD/Form No. 7 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page 19 of 19 |

3.1.8 Management subject



| | | |
|---|---|------------------------|
| Design Plan: Certificate Management System | Document Name: Coding Standards Document | SWD/Form No. 8 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 1 of 2 |

CODING STANDARDS DOCUMENT

1. Programming Standards

- Every button and label should have an Icon for expressing. It must set before a text, image icons have to store in the folder img in source “[Project_Name]/src/img” and they are imported using “Image chooser, Image within Project, Image using for project have extension *.png.
- File, module guidelines and code layout: Code is in the Application folder including the folders (build, nbproject, src, test, build. xml, manifest.mf).
- In the src folder it contains (application, database, and interfaces):
 - In application package: Contains the object class *.java
 - In database package: Contains the class *.java connect the database (manipulating queries on the database, add edit delete DATABASE).
 - In interfaces package: Contains the words using the Java Swing
- Must have declaration part for classes, packages using for the project.

2. Standards for code writing style:

- Statement of each group must indented a Tab.
- Using “{ }” to block a group of statements or only one statement even and the “{” is right after the declaration. For example:
 - if (a == 0){
 - return 0;
 - }
- Each group of a work should have a line gap.
- Database guidelines: database name, table name and column name in the database are capitalize each word. If the two become separated by underscore. The SQL statements are all required to uppercase completely.
- Comment line descrying the variable declaration function mode and end command. For example:


```
// Comment here
/**
    @Author
    @Date writing
    @Author modify
    @Date modify
*/
```

3. Standards for declaring Variables:

Every Variable are meaningful, the first word is lowercase and each meaning word later have the first letter is uppercase. For example: String studentID

| | | |
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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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|---|---|------------------------|
| Design Plan: Certificate Management System | Document Name: Coding Standards Document | SWD/Form No. 8 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 2 of 2 |

Variables are using for loop can be “i” (Index) and loops inner can use “j” and then “k”, “m”, “n”. For example:

```
for (int i = 0; i < n; i++){
    for (int j = 0; ...    //Allowed
        for (int n = 0; ...    //Now allowed, next of “j” is “k”
    }
} // end for
```

In addition, in some cases, the variable name needs to clearly represent the data type of that variable. For example, a variable of type List should be named studentList, a variable of type Set should be named studentSet, a variable of type Map should be named studentMap, and a variable of type Array should be named studentArray.

4. Standards for Function Declarations:

Must have declaration for any functions and it declares return value, parameters if necessary. For example:

```
//function return age
public int getAge (int n) {
    return n;
} // end getAge
```

Any lines have to fix in 80 character, if not, detach it.

5. Other Standards:

The name of the constant must follow the general rule and must be capitalized. If the constant name has two words or more, there must be an underscore between words. For example: PI, NO_FIBONACCI.

The first letter of the first word in the method name must be lowercase and a verb, and the first letter of the next words must be capitalized (*like the variable naming rule*). For example: addStudent.

Package names must follow the general rule and must be in lowercase.

Class names should have words that have suffixes to make them more expressive, such as AddTwoNumber.

Rules for coding: Required comments (author, date of writing, note).

If explicit edit, write to comment (author edit, day edit).

If using the try – catch should use display error messages.

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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

Certificate Generation

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|---|----------------------------------|------------------------|
| Design Plan: Certificate Management System | Document Name: Task Sheet | SWD/Form No. 9 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 1 of 2 |

TASK SHEET

| Project Ref. No.: | Project Title: | Activity Plan Prepared By: Nghi Dang Quang | | Date of Preparation of Activity Plan: Oct 9th, 2019 | | |
|--------------------------|------------------------------|---|-----------------------------|---|-----------------------------------|---------------|
| Task Sub division | Description | Planned Start Date | Actual Start Date | Actual Days | Team Member Names | Status |
| Form No: 1 | Problem Definition | Oct 9 th , 2019 | Oct 10 th , 2019 | 2 | All member | Done |
| Form No: 2A | CRS | Oct 11 th , 2019 | Oct 13 th , 2019 | 3 | All member | Done |
| Form No: 2B | Customer Acceptance Criteria | Oct 14 th , 2019 | Oct 15 th , 2019 | 2 | All member | Done |
| Form No: 9 | Task Sheet | Oct 15 th , 2019 | Oct 15 th , 2019 | 1 | Nghi Dang Quang | Done |
| Form No: 3 | Project Plan | Oct 16 th , 2019 | Oct 16 th , 2019 | 1 | Nghi Dang Quang, Khanh Nguyen Le | Pending |
| Form No: 4 | Process Design Document | Oct 17 th , 2019 | Oct 18 th , 2019 | 2 | Thang To Toan, Thanh Nguyen Phuoc | Pending |
| Form No: 5 | Process Description Document | Oct 19 th , 2019 | Oct 19 th , 2019 | 1 | Khanh Nguyen Le | Pending |
| Form No: 6 | Interface Design Document | Oct 20 th , 2019 | Oct 25 th , 2019 | 6 | All member | Pending |
| Form No: 7 | Table Design Document | Oct 26 th , 2019 | Oct 29 th , 2019 | 4 | All member | Pending |
| Form No: 8 | GUI Standards Document | Oct 30 th , 2019 | Oct 30 th , 2019 | 1 | Thang To Toan | Pending |

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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

Certificate Generation

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| Design Plan: Certificate Management System | Document Name: Task Sheet | SWD/Form No. 9 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 2 of 2 |

| | | | | | | |
|-------------|----------------------------|-----------------------------|-----------------------------|----|--------------------|---------|
| | | | | | | |
| Form No: 10 | Coding Standards Document | Oct 31 th , 2019 | Nov 12 th , 2019 | 13 | Thanh Nguyen Phuoc | Pending |
| Form No: 11 | Integration Testing Report | Nov 13 th , 2019 | Nov 17 th , 2019 | 5 | All member | Pending |
| Form No: 12 | Review Report | Nov 18 th , 2019 | Nov 18 th , 2019 | 1 | Khanh Nguyen Le | Pending |
| Form No: 13 | Final Checklist | Nov 19 th , 2019 | Nov 26 th , 2019 | 8 | All member | Pending |

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|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

Certificate Generation

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|---|--|------------------------|
| Test Document: Certificate Management System | Document Name: Testing Document | SWD/Form No. 10 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 1 of 1 |

INTEGRATION TESTING REPORT

| S. No. | Features Tested | Remarks |
|--------|-----------------|---------|
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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

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|---|--------------------------------------|------------------------|
| Review Report: Certificate Management System | Document Name: Project Review | SWD/Form No. 11 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 1 of 1 |

REVIEW REPORT

| Date: | Project Plan Activity/ Milestone | Work Specification | Status of the Activity | Remarks | Responsibility |
|--------------|---|---------------------------|-------------------------------|----------------|-----------------------|
| | | | | | |
| | | | | | |
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| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |

| | | |
|---|--|------------------------|
| Test Document: Certificate Management System | Document Name: Final Check List | SWD/Form No. 12 |
| Effective Date: Oct 15th, 2019 | Version: 1 | Page No. 1 of 1 |

FINAL CHECKLIST

(This document has to be filled by the teacher only. The teacher will do a complete functionality testing of the application and his/ her findings and suggestions to this form.)

| S. No. | Aspect tested | Suggestion/ Remarks |
|---------------|---|----------------------------|
| 1. | Have all the modules been properly integrated and are they completely functional? | |
| 2. | Does each unit meet its objective and purpose? Are all the validations happening as specified in Process Design? | |
| 3. | Have all Design and Coding standards been followed and implemented? | |
| 4. | Is the GUI design consistent all over? | |
| 5. | Are the codes working as per the specification? | |
| 6. | Does the application's functionality resolve the client problem, and satisfy his needs completely? | |
| 7. | Have the hardware and software been correctly chosen? | |
| 8. | Additional features and utilities that give value addition to the entire project. | |

| | | |
|--|------------------------------|------------------------------|
| | Prepared By (Student) | Approved By (Teacher) |
| Date: Oct 15th, 2019 | Nghi Dang Quang | Anh Luong The |