

# Table of Contents

## Module

<b>1. DEFINITION OF THE PROBLEM.....</b>	<b>2</b>
<b>2. CUSTOMER REQUIREMENT SPECIFICATION DOCUMENT .....</b>	<b>4</b>
<b>3. CUSTOMER’S ACCEPTANCE CRITERIA.....</b>	<b>6</b>
<b>4. PROJECT PLAN .....</b>	<b>7</b>
<b>5. DOCUMENT DESIGN.....</b>	<b>9</b>
<b>6. INTERFACE DESIGN DOCUMENT .....</b>	<b>10</b>
<b>7. CODING STANDARDS DOCUMENT.....</b>	<b>11</b>
<b>8. PROCESS DESCRIPTION DOCUMENT .....</b>	<b>11</b>
<b>9. PROCESS DESCRIPTION DOCUMENT .....</b>	<b>11</b>
<b>10. TASK SHEET .....</b>	<b>13</b>
<b>11. INTEGRATION TESTING REPORT .....</b>	<b>14</b>
<b>12. REVIEW REPORT .....</b>	<b>14</b>
<b>13. FINAL CHECKLIST.....</b>	<b>15</b>

**DEFINITION OF THE PROBLEM**

<b>Design Plan: Certificate Management System</b>	<b>Document Name: Problem Definition Document</b>	<b>SWD/Form No. 1</b>
<b>Effective Date: October 15<sup>th</sup>, 2019</b>	<b>Version: 1</b>	<b>Page No. 1/ 2</b>

**Problem definition of CERTIFICATE GENERATION SYSTEM Soft Application:**

ABC institute has many students who come to register for courses and issue certificate for the students. This work is handled by their manually where they has done time-consuming by teacher who have too much paperwork. Due to increase in the number of the courses the mapping of all the data becomes difficult. This work has done their manually in which they track data by creating separate files for each department.

Therefore, The Certificate Department works for the "ABC" institute to developing the certification system for the students who have completed the course. For each student who come to study with them have to register, check and the payment for that course. For each course will be perform one or more the teachers which fees structure: after registering the student's the payment form is developed here which should contains the two type of the payment one is the full payment and other is the payment in the installment.

After that taking the course of the student had registered, they must take the final exam for each subject. The role of the exam center will be produce the certificate for the students. But it also verifies the status of the students like whether he/she has completed their total payment. If the payment of the students is not clear then students Certificate will not be produce.

It should also check whether the students have given the all 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 30 days before he/she given one exam date, If the payment of the students is clear, they will be allow that student to take one exam, otherwise if he/she is not clear, they will message the students which extend the date of full payment and issue certificate to the students if he/she pass the exam of each subject at the time when the tuition is payment. If he/she does not pass the exam of each subject, they will be organized exam date to notify the students about the retake date, if he/she exam fails, he/she must payment the next exam fee prescribed by their and retake the last times exam. If that times the exam is not successful, he/she needs to return registry and payment for that subject.

During the course of the student participation, he/she will be allow to reserve the results of each subject if he/she have a special case and must take pause and then continue to study for course. Here the certificate of the students should be generated. Before generate it must verify whether the payment of students is remaining or not, if the balance is due then certificate should not get produce. This form should be designed in such a way that it should contain logo and name of the institute. If the student scores in percentage from over 75 type Distinction, between 60 and 75 is type A, between 50 and 59 is type B, between 40 and 49 is type C (it should generate the performance of the students).

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date: October 15<sup>th</sup>, 2019</b>	<b>Nghi Dang Quang</b>	<b>Anh Luong The</b>

<b>Design Plan: Certificate Management System</b>	<b>Document Name: Problem Definition Document</b>	<b>SWD/Form No. 1</b>
<b>Effective Date: October 15<sup>th</sup>, 2019</b>	<b>Version: 1</b>	<b>Page No. 2/ 2</b>

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:

- All objects such as (admin, teacher, student, class, subject, instutite, certificate type, issue certificate, ...) entered into a certificate management system are interlined.
- Admin User can search Class view descrpition of a seleted Class, and Class, update Class and delete Class.
- This application shows the activity flow of editing, adding and updating of Instutite.
- User will be able to search and generate report of Certifiате Type, Student, Certificate.

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date: October 15<sup>th</sup>, 2019</b>	<b>Nghi Dang Quang</b>	<b>Anh Luong The</b>

<b>Design Plan: Certificate Management System</b>	<b>Document Name: CRS</b>	<b>SWD/Form No. 2A</b>
<b>Effective Date: October 15<sup>th</sup>, 2019</b>	<b>Version: 1</b>	<b>Page No. 1/ 2</b>

## **CUSTOMER REQUIREMENT SPECIFICATION DOCUMENT**

**Client/ Project Undertaken: Certificate Generation System**

### **1. List of inputs to the system**

- Generate information about Certificate for the students: Logo and name of Institute.
- Details of the information user will have role respectively.
- Details of the information student will be registry on the application (name, address, date of birth, gender).
- Details of the information payments status course of the student: it should contains the two type of the payment one is the full payment and other is the payment in the installment.
- Details of the information mark of each subject.
- Details of the subjects like (name, description)
- Details of the information teacher will be teach for the students (name, address, date of birth, gender).
- Details of the information class of each course.

### **2. List of outputs expected from the system**

- After receive the information from student will be registry for each course, we will edit and present in the database system.
- After receive the information form user will be registry for each role, we will add to database system.
- After registering the student's the payment form is developed here which should contains the two type of the payment one is the full payment and other is the payment in the installment.
- After registering the student's the teacher form is displayed here which should contains the schedule of course. After receive the information form role will be registry for each teacher, they will see list of the students.
- It should contain fields like (logo, name, course, grade (A, B or C, distinction) name of student) will be display in Certificate for the students.
- Here students can view their payments status for the course, can check the balance remained. It should detail like (course and mark, total fees, paid, balance).
- After testing the student's each subject. 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 each subject then the status of the pass or fail will be display (course, mark, subjects).

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date: October 15<sup>th</sup>, 2019</b>	<b>Nghi Dang Quang</b>	<b>Anh Luong The</b>

<b>Design Plan: Certificate Management System</b>	<b>Document Name: CRS</b>	<b>SWD/Form No. 2A</b>
<b>Effective Date: October 15<sup>th</sup>, 2019</b>	<b>Version: 1</b>	<b>Page No. 2/ 2</b>

### 3. Overview of processes involved in the system

- Check login, logout input from student, users.
- Get class selected by the students add to schedule of the students
- Assigning the schedule to teacher valid in application system.
- Get course selected by the students add to schedule of the teachers.
- Get fees selected by course add to form bill of payment.
- Get the students selected by admin add to form issue certificate and payments status.
- Calculate the bill of payments status, check the balance remained.
- Get each subject selected by the students add to form result of exam.
- Calculate the mark of course for the students and check exam of the student.
- Get mark exam by the teachers add to form performance of the students.
- Check valid of the certificate for the students.
- Check domain, reference of database.

### 4. Hardware and software required for implementing the project

- **Hardware Requirements:**
  - a. Server:
    - CPU: Intel Core i3-2130U, 2.5GHz
    - 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)

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date: October 15<sup>th</sup>, 2019</b>	<b>Nghi Dang Quang</b>	<b>Anh Luong The</b>

<b>Design Plan: Certificate Management System</b>	<b>Document Name: CRS/ Customer Acceptance Criteria</b>	<b>SWD/Form No. 2B</b>
<b>Effective Date: October 15<sup>th</sup>, 2019</b>	<b>Version: 1</b>	<b>Page No. 1</b>

**CUSTOMER'S ACCEPTANCE CRITERIA**

<b>S. No</b>	<b>Customer's Acceptance Criteria</b>
<b>1.</b>	User Login, logout check valid of form
<b>2.</b>	Fees structure of form course
<b>3.</b>	Marks entry of form subject
<b>4.</b>	Create, update, delete and edit a registry form for the students, users
<b>5.</b>	Design, create, update, modify, security and maintain database system
<b>6.</b>	Produce the certificate for the students
<b>7.</b>	Verifies the payments status of the students.
<b>8.</b>	It should also check whether the students have given the all exam.
<b>9.</b>	It should generate the appropriate message to the students for the particular should not get certificate for the students.
<b>10.</b>	The students will be provided with their authentication details and are assume to enter in their login form to view payments status and certificate.
<b>11.</b>	Here students can view their payments status for the course, can check balance remained.
<b>12.</b>	Here the students result is to be displayed.
<b>13.</b>	Valid of certificate for the students.
<b>14.</b>	Database should back up, update, upgrade regularly.

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date: October 15<sup>th</sup>, 2019</b>	<b>Nghi Dang Quang</b>	<b>Anh Luong The</b>

<b>Design Plan:</b>	<b>Document Name: Project Plan</b>	<b>SWD/Form No. 3</b>
<b>Effective Date:</b>	<b>Version: 1</b>	<b>Page No.</b>

## PROJECT PLAN

### 1. Project Details

- **Name of the Client:** *Certificate Generation System*
- **Date of Project Plan:** October 9<sup>th</sup>, 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 course.*  
**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.
  - Help to increase in the number of the courses.
- **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 course maps for all certificates and degrees with the objective of preventing students from taking courses that do not transfer or prepare them for a career. 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
  - Certificate Cell
  - Student Login
- **Project Organization with Responsibilities and Authorities:**  
(Give the name of Project team members their roles and responsibilities.)

Members	Role and Responsibilities
Nghi Dang Quang	Analyst/ Designer/ Developer/ Tester

Khanh Nguyen Le	<b>Analyst/ Implementation Engineer/ Developer/ Tester</b>
Thang To Toan	<b>Analyst/ Designer/ Developer/ Tester</b>
Thanh Nguyen Phuoc	<b>Analyst/ Implementation Engineer / Developer/ Tester</b>

## **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.

Managing all the Certificate

Managing all the Certificate Request

Managing all the Certificate Type

Managing all the Student

Managing all the Class

Managing all the Subject

Managing all the Issue Certificate

Managing all the Teacher

Managing all the Admin

## **3. Deliverables**

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

- Create certificate for the students from all viable degrees and Career we do map for all viable certificates.
- Create Student intake and support systems that have well-defined Pathways to student completion of educational goals.
- Develop Student-centered classrooms with classroom content driven by student learning outcomes.

## **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 twice a week.
- **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.

	Prepared By (Student)	Approved By (Teacher)
Date		

Design Plan:	Document Name: GUI Standards Document	SWD/Form No. 4
Effective Date:	Version: 1	Page No.

## DOCUMENT DESIGN

PROPERTY	VALUE
Document theme and color scheme	Office and Office
Form-Background color	White
Title-Font Size	16
Title-Font Color	Blue
Title-Font Style	Times New Roman
Title-Alignment	Justify
Background color of Controls on the form	White
Foreground color of Controls on the form	Gray
Control Caption – Font Size	None
Control Caption – Font Color	None
Control Caption – Font Style	Times New Roman
Control caption and controls-Alignment	None

Command button-Alignment	None
--------------------------	------

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date</b>		

<b>Design Plan:</b>	<b>Document Name: Interface Design Document</b>	<b>SWD/Form No. 5</b>
<b>Effective Date:</b>	<b>Version: 1</b>	<b>Page No.</b>

## INTERFACE DESIGN DOCUMENT

### 1. List of form to be created

Document Name	Description	Controls on the Document

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date</b>		

<b>Design Plan:</b>	<b>Document Name:</b>	<b>SWD/Form No.</b>
<b>Effective Date:</b>	<b>Version: 1</b>	<b>Page No.</b>

## CODING STANDARDS DOCUMENT

	Prepared By (Student)	Approved By (Teacher)
Date		

Design Plan:	Document Name: Table Design Document	SWD/Form No. 6
Effective Date:	Version: 1	Page No.

## PROCESS DESCRIPTION DOCUMENT

1. ER Diagram
2. Entity and Properties
3. Database Relationship Diagram
4. Database Structure

Name of the Table	Table Description	Number of Fields	Primary Key	Related Tables	Foreign Key

5. Algorithms and data structures

	Prepared By (Student)	Approved By (Teacher)
Date		

Design Plan:	Document Name: Process Description Document	SWD/Form No. 7
Effective Date:	Version: 1	Page No.

## PROCESS DESCRIPTION DOCUMENT

1. Process Name
2. Process Description and Details

	Prepared By (Student)	Approved By (Teacher)
Date		

<b>Design Plan:</b>	<b>Document Name: Coding Standards Document</b>	<b>SWD/Form No. 8</b>
<b>Effective Date:</b>	<b>Version: 1</b>	<b>Page No.</b>

- 1. Programming Standards**
- 2. Standards for code writing style**
- 3. Standards for declaring Variables**
- 4. Standards for Function Declarations**
- 5. Other Standards**

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date</b>		

<b>Design Plan: Certificate Management System</b>	<b>Document Name: Task Sheet</b>	<b>SWD/Form No. 9</b>
<b>Effective Date: October 15<sup>th</sup>, 2019</b>	<b>Version: 1</b>	<b>Page No. 1</b>

## TASK SHEET

<b>Project Ref. No.:</b>	<b>Project Title:</b>	<b>Activity Plan Prepared By: Nghi Dang Quang</b>		<b>Date of Preparation of Activity Plan: Oct 9<sup>th</sup>, 2019</b>		
<b>Task Sub division</b>	<b>Description</b>	<b>Planned Start Date</b>	<b>Actual Start Date</b>	<b>Actual Days</b>	<b>Team Member Names</b>	<b>Status</b>
Form No: 1	Problem Definition	Oct 9 <sup>th</sup> , 2019	Oct 10 <sup>th</sup> , 2019	2	All member	Done
Form No: 2A	CRS	Oct 11 <sup>th</sup> , 2019	Oct 13 <sup>th</sup> , 2019	3	All member	Done
Form No: 2B	Customer Acceptance Criteria	Oct 14 <sup>th</sup> , 2019	Oct 15 <sup>th</sup> , 2019	2	All member	Done
Form No: 9	Task Sheet	Oct 15 <sup>th</sup> , 2019	Oct 15 <sup>th</sup> , 2019	1	Nghi Dang Quang	Done
Form No: 3	Project Plan	Oct 16 <sup>th</sup> , 2019	Oct 16 <sup>th</sup> , 2019	1	Nghi Dang Quang Khanh Nguyen Le	Pending
Form No: 4	Process Design Document	Oct 17 <sup>th</sup> , 2019	Oct 18 <sup>th</sup> , 2019	2	Thang To Toan Thanh Nguyen Phuoc	Pending
Form No: 5	Process Description Document	Oct 19 <sup>th</sup> , 2019	Oct 19 <sup>th</sup> , 2019	1	Khanh Nguyen Le	Pending
Form No: 6	Interface Design Document	Oct 20 <sup>th</sup> , 2019	Oct 25 <sup>th</sup> , 2019	6	All member	Pending
Form No: 7	Table Design Document	Oct 26 <sup>th</sup> , 2019	Oct 29 <sup>th</sup> , 2019	4	All member	Pending
Form No: 8	GUI Standards Document	Oct 30 <sup>th</sup> , 2019	Oct 30 <sup>th</sup> , 2019	1	Thang To Toan	Pending
Form No: 10	Coding Standards Document	Oct 31 <sup>th</sup> , 2019	Nov 12 <sup>th</sup> , 2019	13	Thanh Nguyen Phuoc	Pending
Form No: 11	Integration Testing Report	Nov 13 <sup>th</sup> , 2019	Nov 17 <sup>th</sup> , 2019	5	All member	Pending
Form No: 12	Review Report	Nov 18 <sup>th</sup> , 2019	Nov 18 <sup>th</sup> , 2019	1	Khanh Nguyen Le	Pending
Form No: 13	Final Checklist	Nov 19 <sup>th</sup> , 2019	Nov 26 <sup>th</sup> , 2019	8	All member	Pending

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date: October 9<sup>th</sup>, 2019</b>	<b>Nghi Dang Quang</b>	<b>Anh Luong The</b>

<b>Design Plan:</b>	<b>Document Name: Testing Document</b>	<b>SWD/Form No. 10</b>
<b>Effective Date:</b>	<b>Version: 1</b>	<b>Page No.</b>

### INTEGRATION TESTING REPORT

<b>S. No.</b>	<b>Features Tested</b>	<b>Remarks</b>

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date</b>		

<b>Design Plan:</b>	<b>Document Name: Project Review</b>	<b>SWD/Form No. 11</b>
<b>Effective Date:</b>	<b>Version: 1</b>	<b>Page No.</b>

### REVIEW REPORT

<b>Date:</b>	<b>Project Plan Activity/ Milestone</b>	<b>Work Specification</b>	<b>Status of the Activity</b>	<b>Remarks</b>	<b>Responsibility</b>

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date</b>		

**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.)**

<b>Design Plan:</b>	<b>Document Name: Final check List</b>	<b>SWD/Form No. 12</b>
<b>Effective Date:</b>	<b>Version: 1</b>	<b>Page No.</b>

<b>S. No.</b>	<b>Aspect tested</b>	<b>Suggestion/ Remarks</b>
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.	

	<b>Prepared By (Student)</b>	<b>Approved By (Teacher)</b>
<b>Date</b>		





