



College of Arts, Media and Technology

## CAMT Exam Dashboard With Tesseract

Lingyu Kong 612115506

Jiajun Tao 612115503

**BACHELOR OF SCIENCE  
SOFTWARE ENGINEERING PROGRAM**

**COLLEGE OF ARTS, MEDIA AND  
TECHNOLOGY  
CHIANG MAI UNIVERSIT  
NOVEMBER 2021**



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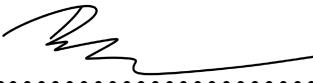
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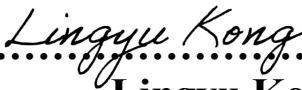
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THIS REPORT HAS BEEN APPROVED TO BE A  
PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE SOFTWARE ENGINEERING PROGRAM:  
COLLEGE OF ARTS MEDIA AND TECHNOLOGY

..........ADVISOR  
Pree Thiengburanathum, PhD

..........MEMBER  
Lingyu Kong

.....MEMBER  
Jiajun Tao

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<b>Title</b>	<b>CAMT Exam Dashboard With Tesseract</b>
<b>Author</b>	<b>Lingyu Kong Jiajun Tao</b>
<b>Degree</b>	<b>Bachelor of Science Software Engineering Program</b>
<b>Senior Project Advisor</b>	<b>Pree Thiengburanathum, PhD</b>

## **ABSTRACT**

We identified the main pain points in the readability and file format of the examination schedule published by CAMT staff. While PDFs are easy to transmit and store, their data are difficult to retrieve and edit, making statistics difficult. At the same time, there is a lack of effective supervision and statistics on the replacement of committee time.

With the rise of OCR (Optical Character Recognition), it refers to electronic devices that check characters printed on paper, determine their shapes by detecting dark and bright patterns, and then use character recognition methods to convert the shapes into computer text the process of. Thanks to OCR technology, PDF files can be converted into usable data structures, breaking down data constraints in PDF documents. In parallel, the data structure is combined with the visual dashboard to enhance the readability and statistics of the data.

In order to solve the above problems, we propose a Dashboard system in the form of a website application called CAMT Exam Dashboard with OCR tech. The system will automatically help administrators and lecturers to parse the uploaded CMU exam schedule and generate a visual Dashboard. It contains three main modules, such as (1) extracting CAMT Exam Schedule which uploaded by lecturers and administrators, (2) data parse, (3) Dashboard. In addition, the system will also provide the website page to display the Dashboard, and send the exam information to the committee via E-mail, and give the administrator the authority to change the examination data.

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# **CHAPTER 1**

## **PROPOSAL**



# CAMT Exam Dashboard with Tesseract

## Proposal

By

Lingyu Kong 612115506

Jiajun Tao 612115503

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COLLEGE OF ARTS, MEDIA AND

TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

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..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

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\***LK = Lingyu Kong**

\***JT = Jiajun Tao**

\* **Advisor = Pree Thiengburanathum,PhD**

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# ABSTRACT

We identified the main pain points in the readability and file format of the examination schedule published by CAMT staff. While PDFs are easy to transmit and store, their data are difficult to retrieve and edit, making statistics difficult. At the same time, there is a lack of effective supervision and statistics on the replacement of committee time.

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# Chapter One

## Introduction & Background

As the carrier of text and data, tables are not only a way of visual communication, but also a means of organizing data. Various forms are widely used in communication, scientific research and data analysis activities. Various forms often appear in many places, such as printed media, handwritten records, computer software, architectural decoration, traffic signs, etc. Due to different contexts, the conventions and terminology used to describe tables accurately will also change. In addition, different tables are also very different in terms of type, structure, flexibility, symbols, expression and use.

In the desktop office scene of all walks of life, Excel is the de facto standard for spreadsheets. Import the content of the table picture into Excel. In the past, we could only type content into excel based on pictures, which was inefficient and error-prone. For its part, with the rise of deep learning, the usability of OCR (Optical Character Recognition) is constantly improving, and a large number of users can use OCR software to extract text information from pictures automatically. However, for tabular solutions, extracting text is not enough. The user must manually copy and paste multiple times to restore the spreadsheet, which still takes much time. Therefore, we hope to realize a solution that recognizes table images and combines them with Excel to improve the office efficiency of users effectively.

During the midterm and final exams of each academic year, CAMT staff will publish the PDF version of the exam schedule. Each column of the table contains a large amount of information, such as class number, time, section, location, committee. Limited by cumbersome Data, such as (1) different majors, (2) different sections, (3) different professional exams at the same time, it is not easy for lecturers to find the exams they need to serve as committee members from hundreds of lines of information. Also, if the lecturer has an urgent matter to deal with temporary and needs to exchange schedules with other teachers, most of them reach an agreement in private. When the administrator wants to collect information about the exam, if he only relies on copying and pasting from the document, he will get nothing more than a bunch of disordered data, let alone a temporary modified schedule.

A dashboard is a visual display of the most important information needed to achieve one or more objectives; consolidated and arranged on a single screen so the information can be monitored at a glance.

It has the following three characteristics: (1) "Specific goals" means that users can monitor, filter, compare, and analyze data, etc., which can guide users to actions and help them complete work tasks; (2) "Important information" refers to Mining the indicators that users want to understand and work closely related to the data;(3) "One screen, one glance" means that users can quickly browse

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and know the overall situation and efficiency is paramount.

In this project, we propose to solve the problem of converting the PDF file of the CAMT exam timetable into an Excel file so that it can be edited and generate an easy-to-use and attractive Dashboard, and remind the exam members through E-mail.

The project comprises three major stages:

- Acquiring files, which is the process of manually entering CAMT Exam Schedule from the lecturers and administrators.
- Data processing. This is our main stage, and we will mainly work in the following areas: the first is to use Open CV for table detection and cell recognition, the second is to completely allocate cells to the appropriate rows and columns, and the third is to extract through Optical character recognition (OCR) with Tesseract detects each assigned unit. The last step is to convert the list into a data frame and store it in an excel file.
- Dashboard. At this stage, connect the Excel spreadsheet that generate in the data processing stage with the dashboard framework, and a complete dashboard can be generated on the website.

The proposed system is a system designed to help users quickly obtain information in the CAMT exam schedule. The proposed system also allows the administrator to modify exam information and send email reminders to exam members. Furthermore, the system will provide a website interface (front-end) to interact with users, using JAVA to write the back-end server; the back-end also contains a cloud database. Due to the small scale of the project, the application will comply with the ISO 29110 standard.

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# Chapter Two

## Literature Review

### 2.1. Business review

#### 2.1.1 Adobe Scan:PDF , OCR



**Figure 1: Adobe scan: PDF, OCR Application main page**

Adobe's free document scanning application integrates OCR technology to instantly recognize printed text and handwritten content.

#### Pros:

1. Scan any content anytime, anywhere.
2. Adobe Scan PDF Scanners turn any content into scannable and reusable content.
3. Clean up. Remove and edit imperfections, remove stains, markings, creases, and even handwritten content.

#### Cons:

1. This software that dashboards cannot be displayed from PDF files
2. This software does not have timely reminder too.

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## 2.1.2 PDF Converter



**Figure 2: PDF convert Application main page**

To convert your documents to PDF format, you can perform the following conversion: DOC to PDF, PPT to PDF, PDF to DOC, XLS to PDF, XLS to DOC...

### Pros:

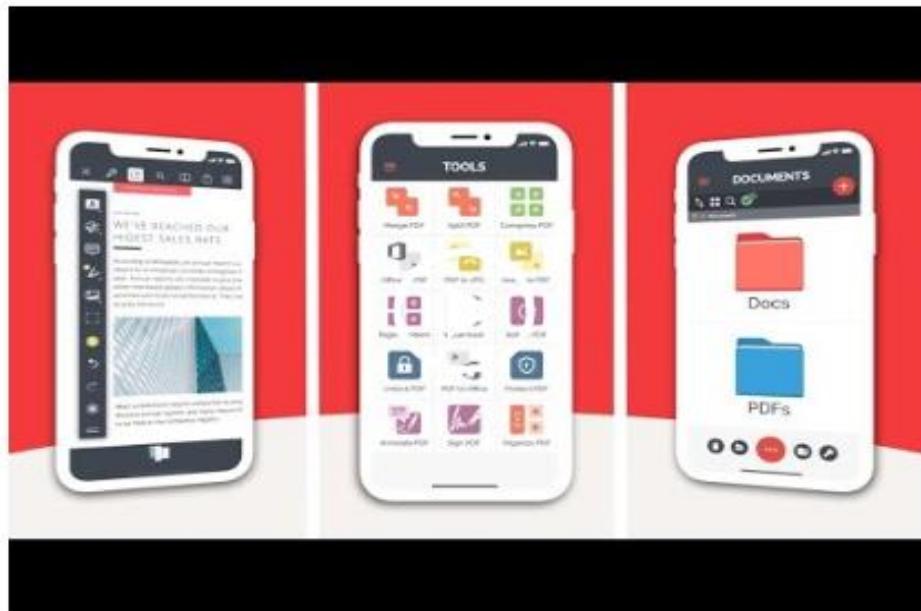
1. Scan documents with the help of the Camera Scanner App, which connects directly to the document converter, shares your files from the scanner, and converts them to any format.
2. Use the direct function to share your documents with the Camera Translator Scanner application.

### Cons:

1. This software need paid usage.
2. This software is a limit on the number of times used.

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### 2.1.3 iLovePDF



*Figure 3: iLovePDF Application main page*

Now, all the PDF tools are integrated!

Editing and modifying PDF files is 100% free and very easy to use!

You can add signatures to your PDF files, or edit and fill out PDF forms directly on your device

#### Pros:

1. Editing and modifying PDF files is 100 % FREE and easy to use!
2. iLovePDF gives you full access to all PDF tools on your favorite device without place and time limitations.

#### Cons:

1. Premium membership is required for advanced functions such as PDF conversion software to other formats or encryption to unlock some PDF files.
2. The identification result is not clear.

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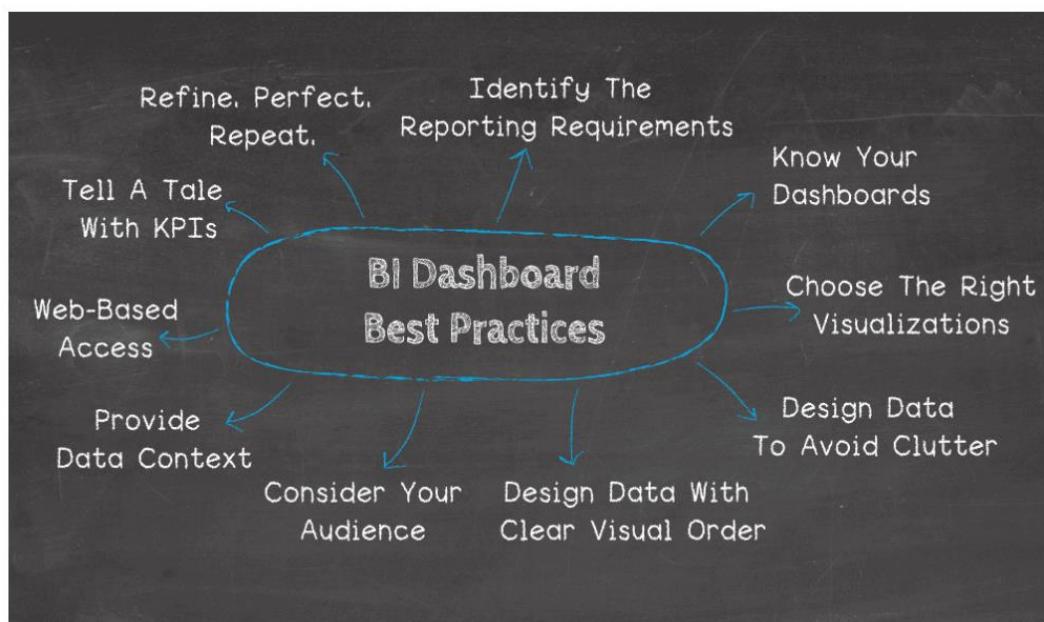
## 2.2 Dashboard

### 2.2.1 Datapine



*Figure 4: Datapine Application main page*

A **BI dashboard** — or business intelligence dashboard — is an information management tool that uses data visualization to display KPIs (key performance indicators) tracked by a business to assess various aspects of performance while generating actionable insights.



*Figure 5: Bi Dashboard practices*

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BI dashboards organize data cohesively while alleviating any potential clutter that can arise when working with complex sets of information while applying advanced intelligence tools to your various business strategies. Using highly visual data representations and tools, you can produce graphs, charts, and other powerful visualization instruments that empower you to interpret the data and transforming it into actionable insights that will benefit your business in many ways. To outline the unrivaled value of creating such a dashboard, here are the primary benefits of utilizing a BI dashboard:

- Trend identification
- Increased efficiency
- Interactive data visualization
- 100% Accuracy
- Self-service features
- Freedom & flexibility

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## 2.3 List of the comparable items

Items	Description
Dashboard	Get real-time data from a variety of data sources, and is a customized interactive interface.
Camera recognition	The software can take a photo to recognize.
Local file recognition	The software can upload local file to recognize.
Export	Users can export the files.
Edit	Edit the file after the conversion is complete.
PDF file conversion	The software can convert PDF files to a variety of formats (such: PDF to DOC, PDF to PPT, PDF to Excel...)
Language (except English)	The software supports except English.
Internet connection	Whether the software needs network identification.

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## 2.4 Comparison table

Software name	Dashboard	Camera recognition	Local file recognition	Export	Edit	PDF file conversion	Language (except English)	Internet connection
Adobe Scan PDF,	✗	✓	✓	✓	✓	✓	✓	✗
PDF Converter	✗	✗	✓	✓	✓	✓	✓	✓
ILovePDF	✗	✓	✓	✓	✓	✓	✓	✓
CAMT Exam Dashboard with Tesseract	✓	✗	✓	✓	✓	✓	✗	✓

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## 2.5 Summarize

(1) Compared with the software of the "Timetable" type, our software can scan PDF files on the basis of displaying test plans, automatically convert them into a table, and add the function of modifying and deleting the contents of test plans. You can also provide reminders of upcoming exams. (2) Compared to software like "Handle PDF With OCR", our software is free and unlimited to convert PDF files from the exam. The conversion is fast, the results are clear, and you can also download the PDF files as Excel files. (3) Finally, our software will generate the corresponding dashboard according to the PDF content, But our software also has some disadvantages, only supports the conversion of PDF files to Excel format, and only supports English.

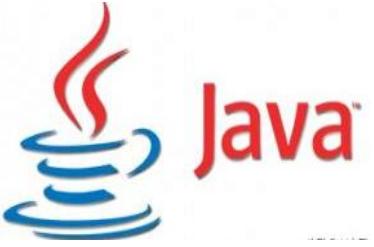
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## 2.6 Technology Review

Front End	Figure	Tool Description	The selection of this technology
HTML 5/.CSS/JS	 <p>The figure contains three logos: the HTML5 logo (a stylized orange '5' with 'HTML' above it), the CSS logo (a blue ribbon with 'CSS' and orange brackets '&lt;/&gt;'), and the JavaScript logo (a yellow shield with 'JS' and 'JavaScript' below it).</p>	<p><b>HTML5</b> is the abbreviation of Hypertext Markup Language 5. HTML5 is composed of different technologies, and it has been widely used in the Internet to provide more standard machines to enhance network applications.</p> <p>CSS can not only modify the page statically, but also cooperate with a variety of scripting languages to dynamically format each element of the page.</p> <p>JavaScript is a dynamic scripting language based on prototyping, multi-paradigms, and supports object-oriented, imperative, and declarative (such as functional programming) styles.</p>	<ul style="list-style-type: none"> <li>● instant run</li> <li>● intelligent forms</li> <li>● fast and feature-rich emulator</li> <li>● multithread processing</li> </ul>
ECharts	 <p>The figure shows the ECharts logo, which consists of a white circular icon with a magnifying glass-like shape inside, set against a red background with a black border. Below the icon, the word "ECHARTS" is written in white capital letters.</p>	<p>Echarts is an open-source visualization library in JavaScript that covers a wide range of industry charts to meet a wide range of needs.</p> <p>Echarts follows the Apache-2.0 open-source protocol and is commercially available for free.</p> <p>Echarts is compatible with most current</p>	<ul style="list-style-type: none"> <li>● Rich visual types</li> <li>● Multiple data formats are used without conversion</li> <li>● Deep interactive data exploration</li> <li>● Dynamic data:</li> </ul>

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		browsers (IE8/9/10/11, Chrome, Firefox, Safari, etc.) and is compatible with a variety of devices, and can be displayed anytime, anywhere.	
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Back End	Figure	Tool Description	The selection of this technology	●
Java		As the representative of the static object-oriented programming language, Java language perfectly implements the object-oriented theory and allows programmers to program in an elegant way of thinking. Java can write desktop applications, Web	<ul style="list-style-type: none"> <li>● Used to write a back-end program.</li> <li>● Java is powerful and easy to use.</li> <li>● Java programs can be written once and run everywhere.</li> <li>● Java allows you to extend the ability to check for potential type mismatches at compile time.</li> </ul>	<ul style="list-style-type: none"> <li>● Used to write a back-end program.</li> <li>● Java is powerful and easy to use.</li> <li>● Java programs can be written once and run everywhere.</li> <li>● Java allows you to extend the ability to check for potential type mismatches at</li> </ul>

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		<p><b>applications, distributed systems and embedded system applications.</b></p>		compile time.
MySQL		<p><b>MySQL is a relational database management system, which stores data in different tables instead of all data in a large warehouse, thus, increasing speed and flexibility. Because of its small size, fast speed and low overall cost of ownership, especially open source.</b></p>	<ul style="list-style-type: none"> <li>● MySQL is an open source.</li> <li>● MySQL supports large databases.</li> <li>● MySQL can define databases and objects.</li> <li>● MySQL can update data, query data.</li> </ul>	<ul style="list-style-type: none"> <li>● MySQL is an open source.</li> <li>● MySQL supports large databases.</li> <li>● MySQL can define databases and objects.</li> <li>● MySQL can update data, query data.</li> </ul>

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MyBatis		<p><b>MyBatis</b> is an excellent persistence layer framework that supports custom SQL, stored procedures, and advanced mapping. MyBatis can use simple XML or annotations for configuration and native maps to Map interfaces and Java Pojos (Plain Old Java Objects) to records in the database.</p>	<ul style="list-style-type: none"> <li>● Simple to learn: Small and simple in itself.</li> <li>● Without any third-party dependencies.</li> <li>● Flexibility: MyBatis does not impose any impact on the existing design of the application or database.</li> <li>● SQL is written in XML for unified management and optimization.</li> </ul>	<ul style="list-style-type: none"> <li>● Simple to learn: Small and simple in itself.</li> <li>● Without any third-party dependencies.</li> <li>● Flexibility: MyBatis does not impose any impact on the existing design of the application or database.</li> <li>● SQL is written in XML for unified management and optimization.</li> </ul>
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Spring MVC		<p>The Spring framework provides a full-featured MVC module for building Web applications. Using Spring's pluggable MVC architecture.</p>	<ul style="list-style-type: none"> <li>● Unlike Struts and other frameworks which are variants or not entirely based on MVC systems, Spring is best for beginners or those who want to know more about MVC.</li> <li>● the framework itself has code that looks easy to understand.</li> </ul>	●
Tomcat	 Apache Tomcat	<p>Tomcat server is a free open source Web application server, a lightweight application server.</p>	<ul style="list-style-type: none"> <li>● Extensibility and security.</li> <li>● The runtime takes up little system resources.</li> <li>● Support load balancing and mail services.</li> </ul>	●

OCR	Figure	Tool Description	The selection of this
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implementation			technology
Tesseract		<p>The Tesseract library supports different language text recognition models. Combined with the Leptonica image processing library, the Tesseract library can read images in a variety of formats and convert them into text in over 60 languages. We can also train our library to continuously improve the ability of images to convert text.</p>	<ul style="list-style-type: none"> <li>● Tesseract supports multiple output formats.</li> <li>● Tesseract is open source.</li> </ul>

Tool	Figure	Tool Description	The selection of this technology
GitHub		<p>GitHub is a hosting platform for open source and proprietary software projects. In addition to Git code repository hosting and the basic Web management interface, there are subscription, discussion groups, text rendering, an online file editor, collaborative graphs (reports), snippet sharing (GIST), and more.</p>	<ul style="list-style-type: none"> <li>● The development version can be controlled and managed in the cloud.</li> <li>● Connect to the integrated development environment the development version can be</li> </ul>

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			<p>transferred between cloud and local terminal.</p> <ul style="list-style-type: none"> <li>● Each change can be controlled, analyzed, and tracked.</li> <li>● Participate in open-source projects of interest to enhance the ability to collaborate with others in development</li> </ul>
Trello		<p><b>Features to help your team succeed.</b></p> <p>From meetings and projects to events and goal setting, Trello's intuitive features give any team the ability to quickly set up and customize workflows for just about anything.</p>	<ul style="list-style-type: none"> <li>● Integrate top work tools</li> <li>● Easily connect the apps your team already uses into your Trello workflow, or add a Power-Up that helps fine-tune one specific need.</li> </ul>

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Eclipse		<p><b>Eclipse is an open source, Java-based extensible development platform.</b></p> <p><b>Eclipse is an integrated development environment (IDE) for Java, but it can also be used as an IDE for other development languages, such as C, C++, PHP, and Ruby</b></p>	<ul style="list-style-type: none"> <li>● From writing, error checking, compilation, help, and so on all aspects of the Java language closely tailored.</li> <li>● Powerful plugin functionality.</li> <li>● Open source and free.</li> </ul>
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## 2.7 Summarize

In this project we select HTML5/.CSS/Javascript + Echarts as the front end, (1) HTML 5 As the core programming language of the Web. (2) Echarts Used to display Dashboard at the front. Select Java + MySQL+ MyBatis + Spring MVC + Tomcat as the backend. (3) Java is the primary programming language at the back end. (4) MySQL is used to store stored data. (5) Combining MySQL and MyBatis makes it easy to combine relational database with object-oriented application. (5) Spring MVC is a great way to build Web frameworks. And we learned Spring MVC before. (6) Tomcat is a small server for debugging and testing our software. (7) OCR, our core technology, is intended to be implemented using Tesseract. (8) GitHub is used to upload and store code, connect to the integrated development environment the development version can be transferred between cloud and local terminal. (9) Trello is used to publish and track project situation. (10) Eclipse is us intend to use IDE.

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# **Chapter Three**

## **Quality Standard**

### **3.1 ISO 29110 for very small Entity**

ISO 29110 is a guide applying to a very small entity, enterprise, organization, department or project up to 25 people dedicated to software development. The guide provides project management and software implementation process which integrate practice based on the selection of ISO/IEC 12207 systems and software engineering software life cycle process and ISO/IEC 15289 software engineering software life cycle process guideline for the content of software life cycle process information product (documentation) standards elements.

#### **3.1.1 Project Management Process**

The purpose of the software management process is to establish and carry out in a systematic way the task of the software implementation project that allows complying with the project's objectives in the expected quality, time and cost. Selected process

Activities:

1. project planning process
2. project plan execution process
3. project assessment and control process
4. project closure process

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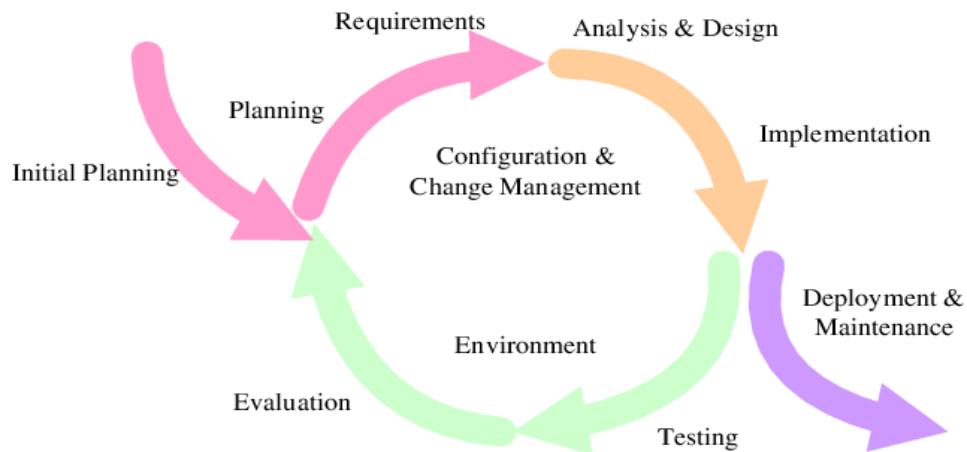
### 3.1.2 Software Implementation Process

The purpose of the software implementation process is the systematic performance of the analysis, design, construction, integration and test actives for new or modified software products, according to the specified requirements

Activities:

1. Software implementation process
2. Software requirement analysis process
3. Software architectural design process
4. Software construction process
5. Software integration process and test process
6. Software delivery process

### 3.1.3 Software Development Model



**Figure 12: Iterative Model**

Figure 9 shows the iterative model is a particular implementation of SDLC that focuses on an initial, simplified implementation. The iterative model starts with an implementation of a small set of the software requirement to complete in each process and feature.

Our project is going to use iterative model to development. Because it can reduce failure of development process.

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# **Chapter Four**

## **Project Plan**

### **4.1 Motivation**

Every semester, CAMT staff will publish two exam schedules, containing hundreds of exam information for several majors, courses and periods. It will not be an easy task for the administrator and lecturer responsible for this to read them all. Moreover, there are no personnel responsible for notifying the time of the examination. Therefore, we created the CAMT Exam Dashboard with the Tesseract system to solve this problem. It will help lecturers analyze and generate exam summaries and help administrators edit exam information and send notifications.

#### **4.1.1 Aims**

This system aims to develop the CAMT Exam Dashboard with the Tesseract system, which can help lecturers parse the CAMT exam timetable into a spreadsheet for download, analyze the data to generate a visual Dashboard provide administrators with the privilege to modify exam information and Send exam notifications.

#### **4.1.2 Objectives**

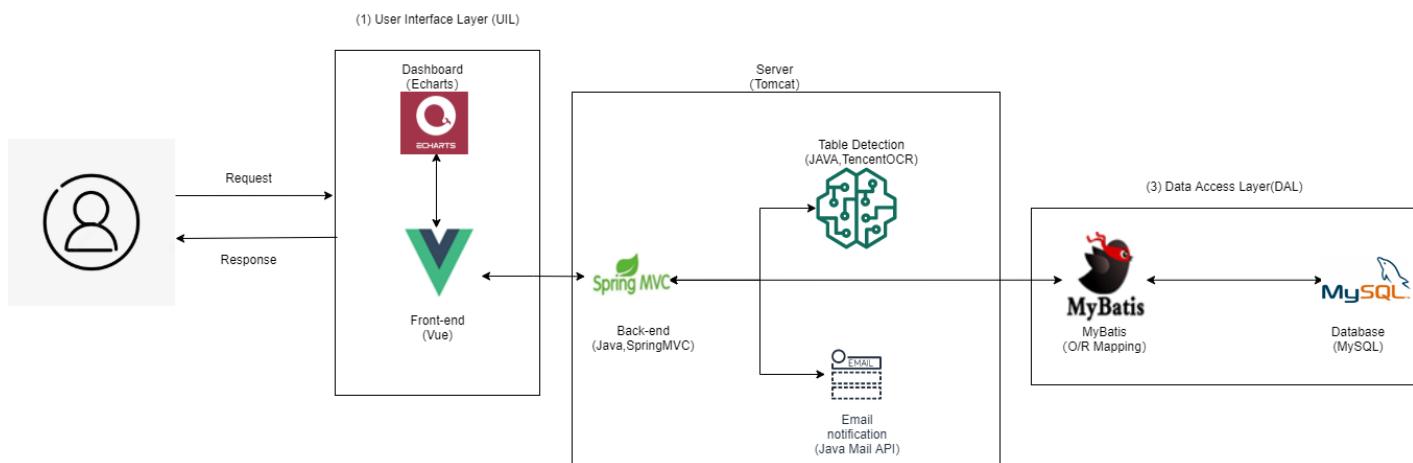
1. Use JAVA programming language to design and implement the backend.
2. Use HTML5, CSS, JS to design and implement the front end.
3. Design and implement MySQL database.
4. Using OpenCV library and Tesseract engine to design and implement recognition algorithms for tables and cells.
5. Use Echarts to design different charts of Dashboard.

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## 4.2 Deliverables & Limits

### 4.2.1 Architecture

A three-tier architecture is used to divide the entire business application into (1) User Interface layer: including the Front-end and Dashboard, the interface that interacts with the user, is used to receive the data input by the user and display the data that the user needs after processing. (2) Business logic layer: The server of the entire program is composed of the JAVA back-end, the form detection algorithm, and the JAVA Mail API for sending mail. The function of the business logic layer is to make logical judgments and perform operations on specific problems. It is an intermediate bridge between the interface layer and the data access layer, realizing data acquisition, modification, deletion, and verification. (3) Data access layer: Including MySQL database and MyBatis O/R M persistence layer framework, mainly to implement the operation of the database. Submit the data stored in the database to the business layer, and save the data processed by the business layer to the database.



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#### 4.2.2 Actor

##### **User description:**

The users are the lecturers of CAMT, have intermediate privileges of the system, and can use most of the functions of the system (except for the change exam information and the notification system).

##### **Admin description:**

The administrator is a staff of CAMT. He/She is responsible for each release of the CAMT exam schedule. He/She has the highest privileges of the system and can use all the functions of the system.

#### 4.2.3 Feature

##### **Feature #1: Authentication System**

**Actor:** Lecturers, Admin

**Description:** Lecturers can log in to the system using CMU accounts, and administrators can log in to the system using administrator accounts.

##### **Details:**

- 1.1 The administrator can log in by entering the email and password to access the system.
- 1.2 The system shall verify the email and password.
- 1.3 Lecturers can click "Login with CMU Account" to access the system.
- 1.4 The system direct to the CMU login system.
- 1.5 Lecturers or administrators can log off from the system.
- 1.6 The system should log off the system.

##### **Feature #2: Table and cell detection and text extraction and parsing system**

**Actor:** Lecturers Admin

**Description:** The system can convert the CAMT exam timetable in PDF format that uploads by lecturers and admin into an Excel spreadsheet.

##### **Details:**

- 2.1 The system should provide an interface for lecturers and administrators to upload files.
- 2.2 Lecturers and administrators can only upload the CAMT exam timetable in PDF format from the local computer.
- 2.3 After the conversion is completed, the system should provide lecturers and administrators with an interface to download products.
- 2.4 The system will provide an interface for generating dashboards.

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### **Feature #3: Dashboard System**

**Actor:** Lecturers Admin

**Description:** After the conversion is complete, the lecturers or administrator can generate an exam summary by clicking the "Generate Dashboard" button.

**Details:**

- 3.1 A "Generate Dashboard" button should be provided.
- 3.2 The system is connected with ECharts.
- 3.3 The ECharts framework draws charts based on the data in the database.
- 3.4 The system directs to the dashboard page to display the results to the lecturers or administrators.
- 3.5 The dashboard page will additionally provide an interface for the administrator to edit the exam information.
- 3.6 The system will provide a preview of the exam information on the edition page.
- 3.7 After the administrator completes the edition, he can choose to save the data and update the dashboard.

### **Feature #4: Notification System**

**Actor:** Admin

**Description:** After the conversion or editing is completed, the administrator can click "Send Notification", and the system will send inspection information for each protector.

**Details:**

- 5.1 The system will provide the Send notification button after the conversion is complete.
- 5.2 The notification shall contain all exam subjects, time and location of the protectors during that exam week.
- 5.3 The message will be sent to the teacher via email.

#### **4.2.4 Limitations**

- The software will be working on the browser.
- The software requires internet connection for certain features.
- The system supports only English language.
- The system can only convert the CAMT exam timetable in PDF format.
- The format of the convertible table is fixed.
- The style of Dashboard is set in the back-end.

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## 4.3 Schedule & Milestones

### 4.3.1 Notation:

- Feature #1: Authentication System
- Feature #2: Table and cell detection and text extraction and parsing system
- Feature #3: Dashboard System
- Feature #4: Notification System

### 4.3.2 Milestone

The schedule and milestones of the working. During the period, there are work terminologies, and the description is shown below that:

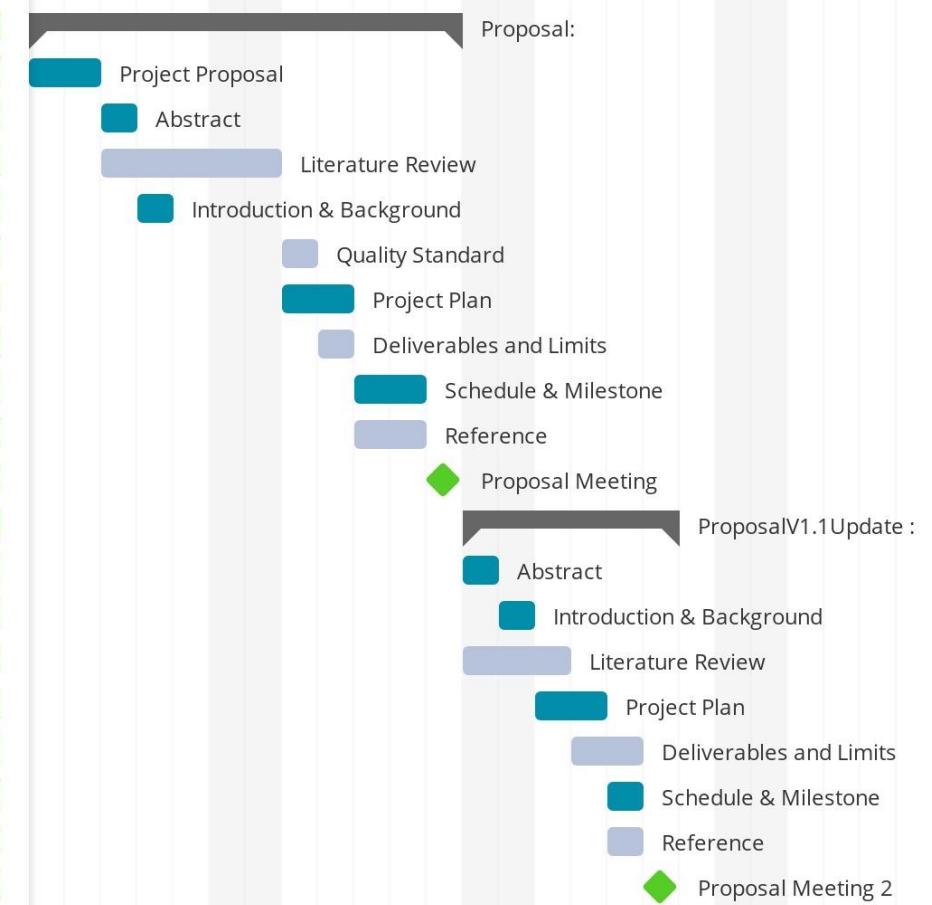
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#### 4.3.2.1 Proposal

##### CMU\_OCR\_Proposal

Read-only view

ACTIVITIES	ASSIGNEE	START	WD	DUE	% 100%	W16					W17					W18					W19								
						19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12
<b>Proposal:</b>		19/Apr	10d	30/Apr	100%																								
1 ✓ Project Proposal	LK	19/Apr	2d	20/Apr	100%																								
2 ✓ Abstract	LK	21/Apr	1d	21/Apr	100%																								
3 ✓ Literature Review	JT	21/Apr	3d	25/Apr	100%																								
4 ✓ Introduction & Background	LK	22/Apr	1d	22/Apr	100%																								
5 ✓ Quality Standard	JT	26/Apr	1d	26/Apr	100%																								
6 ✓ Project Plan	LK	26/Apr	2d	27/Apr	100%																								
7 ✓ Deliverables and Limits	JT	27/Apr	1d	27/Apr	100%																								
8 ✓ Schedule & Milestone	LK	28/Apr	2d	29/Apr	100%																								
9 ✓ Reference	JT	28/Apr	2d	29/Apr	100%																								
10 ✓ Proposal Meeting	JT, LK, AP	30/Apr	1d	30/Apr	100%																								
<b>ProposalV1.1Update :</b>		01/May	4d	06/May	100%																								
12 ✓ Abstract	LK	01/May	1d	01/May	100%																								
13 ✓ Introduction & Background	LK	02/May	1d	02/May	100%																								
14 ✓ Literature Review	JT	01/May	1d	03/May	100%																								
15 ✓ Project Plan	LK	03/May	2d	04/May	100%																								
16 ✓ Deliverables and Limits	JT	04/May	2d	05/May	100%																								
17 ✓ Schedule & Milestone	LK	05/May	1d	05/May	100%																								
18 ✓ Reference	JT	05/May	1d	05/May	100%																								
19 ✓ Proposal Meeting 2	AP, JT, LK	06/May	1d	06/May	100%																								



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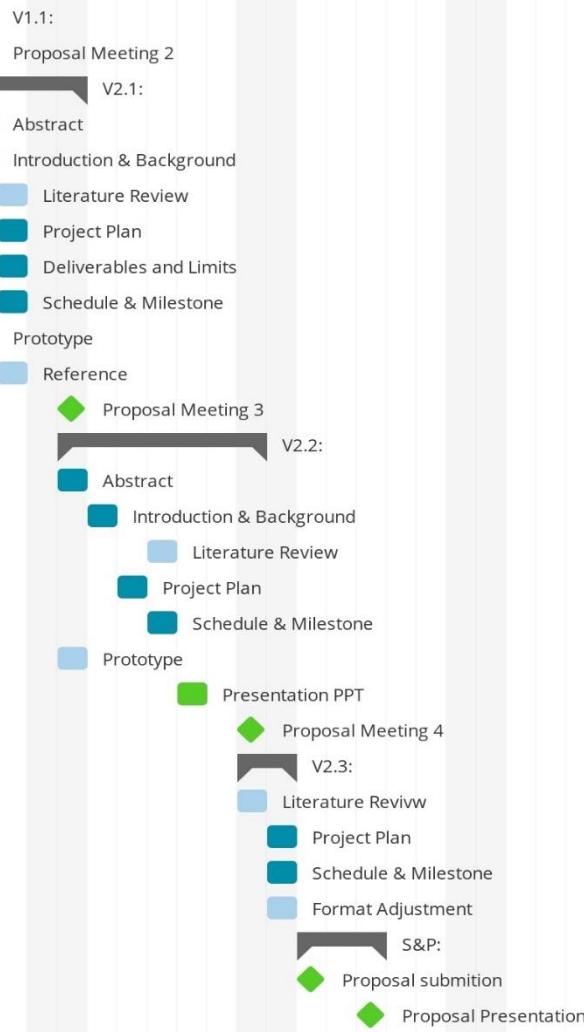
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### 4.3.2.2 Proposal 2

#### CMU\_OCR\_Proposal

Read-only view

	ACTIVITIES	ASSIGNEE	START	WD	DUe	%		W19	May 2021	W20	W21																	
								6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	V1.1:																											
1	✓ Proposal Meeting 2	AP, JT, LK	06/May	1d	06/May	100%																						
	V2.1:																											
3	✓ Abstract	LK	06/May	1d	06/May	100%																						
4	✓ Introduction & Background	LK	06/May	1d	06/May	100%																						
5	✓ Literature Review	JT	07/May	1d	07/May	100%																						
6	✓ Project Plan	LK	07/May	1d	07/May	100%																						
7	✓ Deliverables and Limits	LK	07/May	1d	07/May	100%																						
8	✓ Schedule & Milestone	LK	07/May	1d	07/May	100%																						
9	✓ Prototype	JT	06/May	1d	06/May	100%																						
10	✓ Reference	JT	07/May	1d	07/May	100%																						
11	✓ Proposal Meeting 3	AP, JT, LK	09/May	1d	09/May	100%																						
	V2.2:																											
13	✓ Abstract	LK	09/May	1d	09/May	100%																						
14	✓ Introduction & Background	LK	10/May	1d	10/May	100%																						
15	✓ Literature Review	JT	12/May	1d	12/May	100%																						
16	✓ Project Plan	LK	11/May	1d	11/May	100%																						
17	✓ Schedule & Milestone	LK	12/May	1d	12/May	100%																						
18	✓ Prototype	JT	09/May	1d	09/May	100%																						
19	✓ Presentation PPT	JT, LK	13/May	1d	13/May	100%																						
20	✓ Proposal Meeting 4	AP, JT, LK	15/May	1d	15/May	100%																						
	V2.3:																											
22	✓ Literature Review	JT	15/May	1d	15/May	100%																						
23	✓ Project Plan	LK	16/May	1d	16/May	100%																						
24	✓ Schedule & Milestone	LK	16/May	1d	16/May	100%																						
25	✓ Format Adjustment	JT	16/May	1d	16/May	100%																						
	S&P:																											
27	✓ Proposal submition	JT, LK	17/May	1d	17/May	100%																						
28	✓ Proposal Presentation	JT, LK	19/May	1d	19/May	100%																						

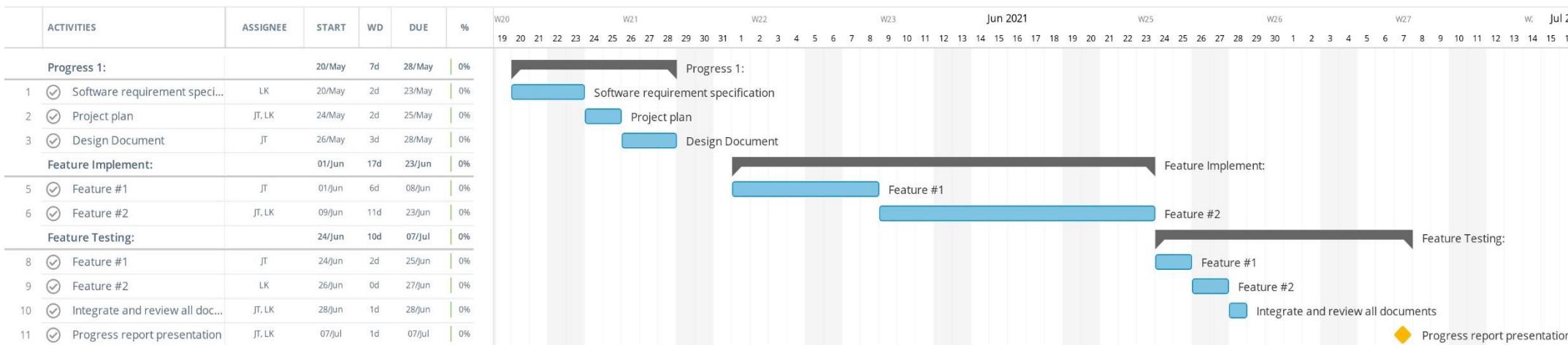


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### 4.3.2.3 Progress I

#### CMU\_OCR\_Progress I

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#### 4.3.2.4 Progress II

##### CMU\_OCR\_Progress II

Read-only view

	ACTIVITIES	ASSIGNEE	START	WD	DUe	%	1 28	Jul 2021 05 12 19 26	Aug 2021 02 09 16 23	Sep 2021 30 06 13 20 27	Oct 2021 04 11 18 25 01
	Progress 2:										
1	<input checked="" type="checkbox"/> Software requirement spec...	LK	10/Jul	5d	18/Jul	0%					
2	<input checked="" type="checkbox"/> Project plan	JT, LK	14/Jul	2d	15/Jul	0%					
3	<input checked="" type="checkbox"/> Design document	JT	16/Jul	1d	18/Jul	0%					
	Feature Implementation:										
5	<input checked="" type="checkbox"/> Feature #2	JT, LK	19/Jul	14d	05/Aug	0%					
6	<input checked="" type="checkbox"/> Feature #3	JT, LK	06/Aug	11d	21/Aug	0%					
7	<input checked="" type="checkbox"/> Feature #4	JT	22/Aug	4d	26/Aug	0%					
	Feature Testing:										
9	<input checked="" type="checkbox"/> Feature #2	LK	28/Aug	3d	01/Sep	0%					
10	<input checked="" type="checkbox"/> Feature #3	JT	02/Sep	3d	06/Sep	0%					
11	<input checked="" type="checkbox"/> Feature #4	JT	07/Sep	1d	07/Sep	0%					
12	<input checked="" type="checkbox"/> Test all feature	JT, LK	07/Sep	4d	10/Sep	0%					
13	<input checked="" type="checkbox"/> Progress Report II submitted	JT, LK	15/Sep	1d	15/Sep	0%					
14	<input checked="" type="checkbox"/> Progress Report II presentat...	JT, LK	22/Sep	1d	22/Sep	0%					
	Show Pro:										
16	<input checked="" type="checkbox"/> Show Pro	JT, LK	29/Sep	1d	29/Sep	0%					

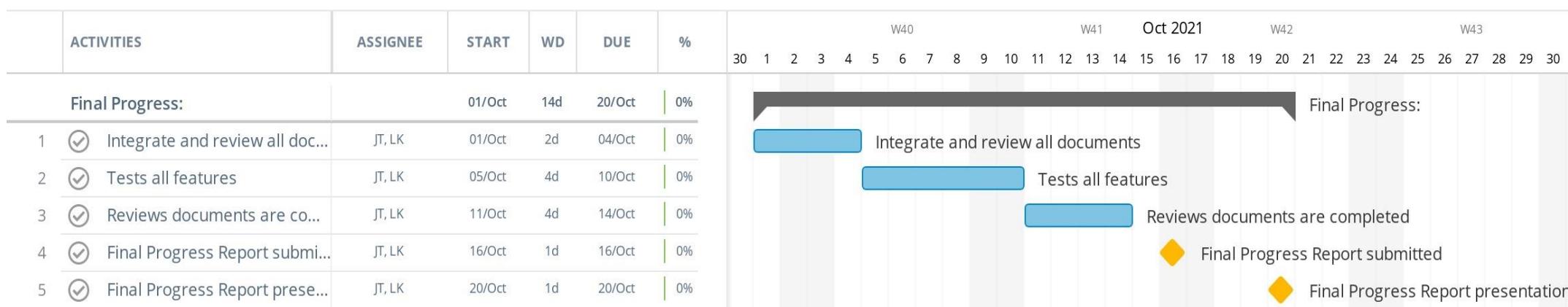
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### 4.3.2.5 Final progre

#### CMU\_OCR\_Final Progress

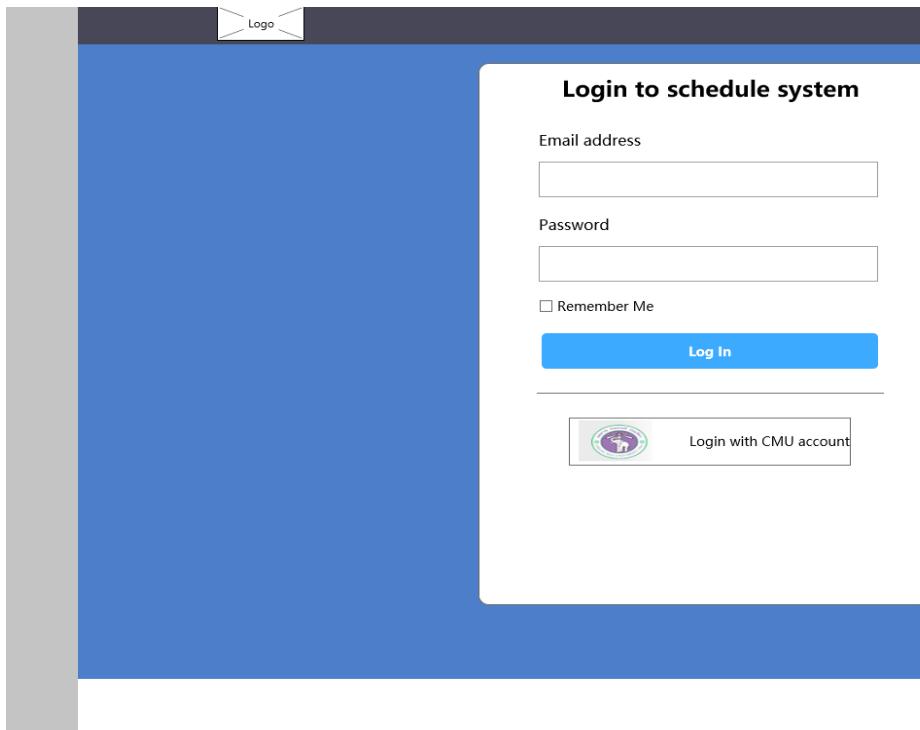
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## 4.4 prototype

### Login



The lecture can be logged into the system with a CMU account, and the admin can log in with a special account password.

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## Dashboard



After the Lecture/admin login, they can see that Dashboard presents the exam information.

Dashboard can select the time of the source of the information (e.g., MID Exam, First Semester 2020; Final Exam, Second Semester 2020)

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## Modify Timetable

The screenshot shows a web application interface titled "Edit Timetable". At the top, there is a navigation bar with links for "Dashboard", "Upload file", "Logout", and search functions. Below the title, there is a table with columns: Date, Time, Course, Section, Students, Room, Proctors, Delete, and Edit. The table contains several rows of placeholder data (e.g., Mon 25 JAN 2021, 12-15, 953333, 701, 70, 413, Passakorn, etc.). Below the table are two buttons: "Update New Dashboard" and "Email Reminder". A callout box points from the "Email Reminder" button to a confirmation dialog box. The confirmation dialog box contains the text "Send exam notifications for all protectors?" with "No" and "Yes" buttons. A note above the dialog says "There have second confirmation button to prevent admin false click".

After the administrator logs in, select the Modify button, and the page displays the lecture information of all teachers in a form, and the lecture information can be modified by admin.

And after the modify is complete, select the Email Reminder button (this has a second confirmation to prevent it false click) and an Email will be sent to the lecture.

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## Upload File

The screenshot shows a web-based application interface. At the top, there's a dark header bar with a logo icon, 'Dashboard', 'Upload file', and 'Logout' buttons. Below the header, the main title 'Upload PDF File' is prominently displayed in large white letters on a blue background. To the left, there's a sub-section titled 'Upload PDF File' featuring a red 'PDF' button with a white 'Y' icon. To the right, instructions say 'Select the CAMT exam schedule PDF file' and 'Only officially published documents are supported, either midterm or final.' A 'Local Upload' button is located below these instructions. The word 'Result' is displayed in large white letters at the bottom of the main section. Below the result, there's a table with columns: Date, Time, Course, Section, Students, Room, and Proctors. The table contains several rows of data, including 'Mon 25 JAN 2021', '12-15', '953333', '701', '70', '413', and 'Passakorn'. There are also several 'XXX' entries. At the bottom of the table, there are 'Download' and 'Download as an Excel file' buttons.

The lecture/admin can click Local Upload button to upload the CAMT Exam Schedule File, call the OCR in the background to identify the file, and then write the identified information into the database, and provide a download as an Excel file.

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# Chapter Five

## References

- [1] CMU MOBILE is the Official application of the University. Introduction and download page. [Application interface]. Retrieved April 19, 2021, from  
[https://play.google.com/store/apps/details?id=th.ac.cmu.mobile.portal&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=th.ac.cmu.mobile.portal&hl=en_US&gl=US)
- [2] Apple App Store “To-Do List - Schedule Planner & To Do Reminders” introduction and download page. [Application interface]. Retrieved April 19, 2021, from  
[https://play.google.com/store/apps/details?id=todolist.scheduleplanner.dailyplanner.todo.reminders&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=todolist.scheduleplanner.dailyplanner.todo.reminders&hl=en_US&gl=US)
- [3] Apple App Store “Timetable” introduction and download page. [Application interface]. Retrieved April 19, 2021, from  
[https://play.google.com/store/apps/details?id=com.strivexj.timetable&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=com.strivexj.timetable&hl=en_US&gl=US)
- [4] Apple App Store “Adobe Scan PDF, OCR” introduction and download page. [Application interface]. Retrieved April 19, 2021, from  
<https://play.google.com/store/apps/details?id=com.adobe.scan.android>
- [5] Apple App Store “PDF Converter” introduction and download page. [Application interface]. Retrieved April 19, 2021, from  
[https://play.google.com/store/apps/details?id=com.ticktalk.pdfconverter&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=com.ticktalk.pdfconverter&hl=en_US&gl=US)
- [6] Apple App Store “PDF Converter” introduction and download page. [Application interface]. Retrieved April 19, 2021, from  
[https://play.google.com/store/apps/details?id=com.ilovepdf.www&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=com.ilovepdf.www&hl=en_US&gl=US)
- [7] What is one strategic business intelligence (BI) mechanism that is absolutely necessary in the digital age? Retrieved April 27,  
<https://www.datapine.com/articles/bi-dashboard-best-practices>
- [8] Distributed and source code management (SCM) functionality of Git. Retrieved April 27, 2021, from <https://docs.github.com/en>
- [9] A Trello helps teams move work forward. Retrieved April 27, 2021, from  
<https://trello.com/en-US>

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[10] Eclipse is an open source, Java-based extensible development platform ice,  
Retrieved April 27, 2021  
from <https://www.eclipse.org/downloads/>

[11] The world's most popular open-source database. [Web log post]. Retrieved April 27, 2021 from <https://www.mysql.com/>

[12] Java Application Developer's Guide — Chapter 1. [Web log post]. Retrieved April 27, 2021 from <https://docs.marklogic.com/guide/java/intro>

[13] Most popular SQL based data mapping solution for object-oriented software development. Retrieved April 27 ,2021 form <https://mybatis.org/mybatis-3/index.html>

[14] The Tesseract library supports different language text recognition models.  
Retrieved April 27 ,2021 form <https://github.com/tesseract-ocr/tesseract>

[15] The Apache Tomcat® software is an open-source implementation of the Jakarta Servlet. Retrieved April 27 ,2021 form <http://tomcat.apache.org/>

[16] The Spring Web model-view-controller (MVC) framework. Retrieved April 27 ,2021 form [https://www.tutorialspoint.com/spring/spring\\_web\\_mvc\\_framework.htm](https://www.tutorialspoint.com/spring/spring_web_mvc_framework.htm)

[17] An Open-Source JavaScript Visualization Library. Retrieved April 27 ,2021 form <https://echarts.apache.org/en/index.html>

Document Name	CAMT Exam Dashboard with Tesseract Proposal_V.7	Owner	Lingyu Kong Jiajun Tao	Page	45/420
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## **CHAPTER 2**

### **PROJECT PLAN**



## CAMT Exam Dashboard with Tesseract

### PROJECT PLAN

By

Lingyu Kong 612115506

Jiajun Tao 612115503

BACHELOR OF SOFTWARE ENGINEERING PROGRAM

COLLEGE OF ARTS, MEDIA AND  
TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

Pree Thiengburanathum, PhD

# CAMT Exam Dashboard with Tesseract

Lingyu Kong 612115506

Jiajun Tao 612115503

THIS REPORT HAS BEEN APPROVED TO BE A PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE  
SOFTWARE ENGINEERING PROGRAM: COLLEGE OF  
ARTS MEDIA AND TECHNOLOGY

..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

## Document History

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Project Plan_Version.1.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> <li>• Chapter 3</li> <li>• Chapter 4</li> <li>• Chapter 5</li> <li>• Chapter 6</li> </ul>	Draft	2 June , 2021	Advisor LK JT	LK JT	LK JT
Project Plan_Version.2.docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> <li>• Chapter 3</li> <li>• Chapter 4</li> <li>• Chapter 5</li> <li>• Chapter 6</li> </ul>	Draft	30 June , 2021	Advisor LK JT	LK JT	LK JT
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Project Plan_Version.4.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• 5.3 project repository</li> <li>• 5.4 CI table</li> </ul>	Draft	31 August, 2021	Advisor LK JT	LK JT	LK JT
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Project Plan_Version.8.docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> <li>• Chapter 3</li> <li>• Chapter 4</li> <li>• Chapter 5</li> <li>• Chapter 6</li> </ul>	Draft	09 October, 2021	Advisor LK JT	LK JT	LK JT

**\*LK = Lingyu Kong**

**\*JT = Jiajun Tao**

**\* Advisor = Pree Thiengburanathum, PhD**

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# **Chapter One**

## **1.1 Project Overview**

The CAMT Exam Dashboard with Tesseract is a web-based application designed to help lecturers to obtain effectively access to exam information and assist staffs manage exam data. Staffs in CAMT do not need to spend too much time in CAMT statistics and edit each exam information when each exam week is over, because the CAMT Exam Dashboard with Tesseract system will provide staff with an interface to convert the CAMT exam timetable PDF documents into EXCEL spreadsheets. The data structure can be used to generates a rich visual dashboard, which can include the total number of exams, the total number of different majors' exams, the number of daily exams and their time, or different semesters of different academic years represented by the Gantt chart, line chart, and fan chart. The system also allows the staff to edit the exam information online, and the system will provide an exam information form at that time. After the edition is completed, staff can choose to send an exam notification to the exam protector, including the exam subject, date, time and location. Sometimes When exam protectors exchange schedules, staff can also record these events online by edit exam information. Lecturers no longer need to spend time checking exam time in CAMT, and they can also preview the dashboard and use the conversion service.

## **1.2 Document Overview**

### **1.2.1 Purpose**

A project plan defines project goals and objectives, specifies tasks, and how goals will be achieved, identifies what resources will be needed, and associated budgets and timelines for completion. A project plan defines all work in a project and identifies who will do it.

### **1.2.2 Scope**

This document includes Managerial Process Plans, Technical Process Plans, Quality Plans, Configuration Management, Schedule, and Milestone

### **1.2.3 Acronyms**

SD - Sequence Diagram

SRS - Software Requirement Specification/System Requirement Specification

UTC - Unit Test Case

UC - Use Case

UI - User Interface

URS - User Requirement Specification

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## MD - Method Description

SD	Sequence Diagram
SRS	Software Requirement Specification/System Requirement Specification
UTC	Unit Test Case
UC	Use Case
UI	User Interface
URS	User Requirement Specification
MD	Method Description

### 1.2.4 Definition

Name	Definition
IEEE	Institute for Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and computer scientists. [IEEE90]
Requirement	(1) A condition or capability needed by the user to solve a problem or achieve an objective. (2) A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or another formally imposed document. (3) A documented representation of a condition or capability as in definition (1) or (2). [IEEE90]
Specification	A precise description of an activity or work product that serves as the basic or input for further activities or work product. A specification can comprise requirements for a product and how they will be solved. Different parts of a specification (e.g., what is to be done, how it will be done) must not be mixed. [IEEE90]

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Use case	(1) Concept to describe a system based on the usage of system resources by its environment. Characterized by an objective-set of interactions within and at the borders of that system.  (2) Notation from UML for describing a scenario (Usage approach, operational scenario) from the perspective of this user.  [IEEE90]
Unit testing	Testing of individual hardware or software units or groups of related units. [IEEE90]
Test case	(1)A set of test inputs, execution conditions, and expected results developed for a particular objective, such as to exercise a particular program path or to verify compliance with a specific requirement.  (2) Documentation specifying inputs predicted results and a set of execution conditions for a test item. [IEEE90]
Milestone	A significant event in the project, usually the completion of the main deliverable. [IEEE90]
Project Plan	A document that describes the technical and management approach to be followed for a project. The plan typically describes the work to be done, the resources required, the methods to be used, the procedures to be followed, the schedules to be organized.

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## 1.3 Project Deliverables

No.	Deliverables/Release	Style	Date
1	Project Proposal	Electronic document	17/05/2021
2	Progress 1 Project Plan Version_1 Software Requirement Specification Version_1 Software Design Version_1 Test Plan Version_1 Test Record Version_1 Traceability Record Version_1	Electronic document	10/08/2021
3	Software for Progress 1	Software	25/08/2021
4	Progress 2 Project Plan Version_1 Software Requirement Specification Version_1 Software Design Version_1 Test Plan Version_1 Test Record Version_1 Traceability Record Version_1	Electronic document	26/08/2021
5	Software for Progress 2	Software	22/09/2021
6	Final Progress Project Plan Software Requirement Specification Software Design Test Plan Test Record Traceability Record	Electronic document	23/09/2021

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7	Software for Final Progress	Software	30/09/2021
8	Final Progress Project Plan Software Requirement Specification Software Design Test Plan Test Record Traceability Record	Electronic document	10/10/2021

## 1.4 Roles and Responsibilities

No.	Participants	Roles	Responsibilities
1	Pree Thiengburanathum, PhD	Project Advisor	Approve, Suggest, Review
2	Lingyu Kong	Development team member	Document Create and Review - Project Proposal - Software - Requirement - Specification - Software Design - Document - Traceability record Software code - Develop

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3	Jiajun Tao	Development team member	<p>Document</p> <ul style="list-style-type: none"> <li>- Create and Review</li> <li>- Project Proposal - Software</li> <li>- Requirement</li> <li>- Specification</li> <li>- Document</li> <li>- Traceability record</li> <li>- Test Plan</li> <li>- Test Record</li> <li>- Project Plan</li> </ul> <p>Software code</p> <ul style="list-style-type: none"> <li>- Develop</li> <li>- Test</li> </ul>
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# Chapter Two

## 2.1. Project Estimate

### 2.1.1 Task duration estimation and sorting

#### Progress 1

No.	Task	Estimated Duration (Days)	Start	End
1	Project Planning	1	02/06/2021	02/06/2021
2	Requirement Analyzing	3	03/06/2021	06/06/2021
3	SRS Documentation	3	07/06/2021	10/06/2021
4	Software Designing	3	10/06/2021	13/06/2021
5	Coding feature 1 (Authentication System)	10	13/06/2021	23/06/2021
6	Coding feature 2 (Table and cell detection and text extraction and parsing System)	15	23/06/2021	07/07/2021
7	Test Planning	5	07/07/2021	12/07/2021
8	Testing	2	12/07/2021	12/07/2021
9	Test Recording	1/2	13/07/2021	13/07/2021

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10	Traceability Recording	1/2	13/07/2021	13/07/2021
11	Document & software Reviewing	14	13/07/2021	27/07/2021
12	Advisor Reviewing & Advice	1	27/07/2021	28/07/2021
13	Advisor Approving	1	07/08/2021	07/08/2021
14	Submitting	1/2	10/08/2021	10/08/2021
15	Presentation Preparing	3	07/08/2021	10/08/2021
16	Presenting Progress 1	1	11/08/2021	11/08/2021
	Total	68	02/06/2021	11/08/2020

## Progress 2

No.	Task	Estimated Duration (Days)	Start	End
1	Project Planning	1	31/08/2021	01/09/2021

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2	Requirement Analyzing	1	01/09/2021	02/09/2021
3	SRS Documentation	3	02/09/2021	05/09/2021
4	Software Designing	1	05/09/2021	06/09/2021
5	Coding feature 3 (Dashboard System)	2	06/09/2021	08/09/2021
6	Coding feature 4 (Notification System)	3	09/09/2021	12/09/2021
7	Test Planning	1	12/09/2021	13/09/2021
8	Testing	2	13/09/2021	15/09/2021
9	Test Recording	1	15/09/2021	16/09/2021
10	Traceability Recording	1/2	16/09/2021	16/09/2021
11	Document & software Reviewing	1	16/09/2021	17/09/2021
12	Advisor Reviewing & Advice	1	16/09/2021	16/09/2021

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13	Advisor Approving	1/2	16/09/2021	16/09/2021
14	Submitting	1	17/09/2021	17/09/2021
15	Presentation Preparing	5	17/09/2021	22/09/2021
16	Presenting Progress 2	1	22/09/2021	22/09/2021
	Total	23	31/08/2021	22/09/2020

## Final Progress

No.	Task	Estimated Duration (Days)	Start	End
1	Software Reviewing	3	23/09/2021	26/09/2021
1	Test Reviewing	3	26/09/2021	29/09/2021
2	Testing	5	29/09/2021	4/10/2021
11	Test Recording	1	04/10/2021	04/10/2021

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12	Traceability Recording	1	05/10/2021	05/10/2021
13	Document Reviewing	3	08/10/2021	08/10/2021
13	Advisor Reviewing & Advice	1/2	09/10/2021	09/10/2021
14	Advisor Approving	1/2	09/10/2021	09/10/2021
15	Submitting	1	10/10/2021	10/10/2021
16	Presentation Preparing	3	10/10/2021	13/10/2021
17	Presenting Final Progress	1	14/10/2021	14/10/2021
18	Total	21	23/09/2021	14/10/2020

## 2.2 Monitoring and Controlling Plan

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## 2.2.1 Project Meeting

### progress 1

Participants	Role
JiajunTao-LingyuKong	Development
JiajunTao-LingyuKong-Pree Thiengburanathum,PhD	Research, review, approve

## 2.2.2 Status Reporting

No.	Progress Report	Items
1	Project Proposal Report	Project Proposal
2	1st Progress Report	<ul style="list-style-type: none"><li>- Project Proposal</li><li>- Software Requirement Specification</li><li>- Software Design Document</li><li>- Traceability record</li><li>- Test Plan</li><li>- Test Record</li><li>- Source Code</li></ul>

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3	2st Progress Report	<ul style="list-style-type: none"> <li>- Project Proposal</li> <li>- Software Requirement Specification</li> <li>- Software Design Document</li> <li>- Traceability record</li> <li>- Test Plan</li> <li>- Test Record</li> <li>- Source Code</li> </ul>
4	Final Progress Report	<ul style="list-style-type: none"> <li>- Project Proposal</li> <li>- Software Requirement Specification</li> <li>- Software Design Document</li> <li>- Traceability record</li> <li>- Test Plan</li> <li>- Test Record</li> <li>- Source Code</li> </ul>

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## 2.3 Risk Management Plan

### 2.3.1 Identification of Project Risks

ID	Risk	Risk Type	Probability	Impact
R1	A loss of work due to a computer crash	Technology	10%	High
R2	Late Delivery	Process	30%	High
R3	Technology will not meet expectations	Technology	30%	High
R4	The requirements might change	Process	20%	High
R5	Lack of development skill	Human	30%	High
R6	Project un-approved by Advisor	Process	30%	High
R7	Deviation from SE standards	Process	10%	Low
R8	Team member gets sick	Human	60%	High

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### 2.3.2 Risk Mitigation, Monitoring, and Management

ID	Mitigation	Monitoring	Management
R1	Work online; Keep artifacts online; Using Cloud Storage	Stable working environment	Reduce memory usage; Avoid overheating computer
R2	Set up the deadline before the real submission day	Follow a schedule and team members often communicate progress	Consult with advisor for late submission or other solution available
R3	Deep learning technology or finding alternatives	Document and tutorial related to the technology sufficiently supports the development	Consult with advisor for the solution
R4	Consult with advisor for a clear and acceptable scope of project and requirements	Have multiple meetings	Define the scope of the requirements

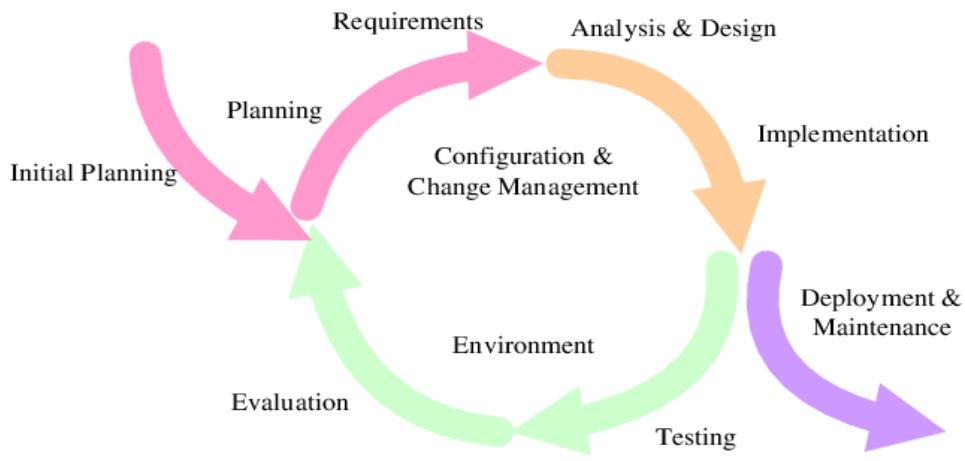
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R5	Use books and websites; Watch the video tutorial to get help	The Internet dependence	Seek help from advisor or senior
R6	Frequently meet the advisor to check the work	All comments should be recorded and fixed	Consult with advisor for improvement method
R7	Follow with the standard closely; Ask advisor to review	Refer to other success cases to follow the standards	Re-read the standard and correct as appropriate.
R8	Get adequate sleep; Eat healthy and exercise	Any sickness should be reported to the doctor; Take care of your health	Consult with the advisor Seek solutions and pay attention to the health of team members

## Chapter Three

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### 3.1 Software Development Model



**Figure 1 Iteration Model**

Figure 1 Iterative and incremental development is a process that grows a system feature by feature during self-contained cycles of analysis, design, implementation, and testing that end in the production of a stable, fully integrated and tested. It does not contain only one large development cycle as in the waterfall model. This model has separated a work into small tasks, and iterates it until developers satisfy a result; in each task iteration builds on the work of previous iterations and refines the system until the final product is complete.

### 3.2 Software Tools Plan

Draw io: an online diagram maker.

Chrome: a web browser. [Version: 80.0.3987.149 (64) bit]

GitHub: GitHub is a hosting platform for open source and proprietary software projects.

Trello: a web-based Kanban-style list-making application which is a subsidiary of Atlassian.

### 3.3 Development Environment

DESKTOP-TH73SEV

- ◆ Processor: Intel(R) Core (TM) i5-9400F CPU @ 2.90GHz
- ◆ Memory: 16.0 GB
- ◆ Graphics: NVIDIA GeForce GTX 1060

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- ◆ Operating System: Windows 10
- DESKTOP-O445M9U
  - ◆ Processor: Core i7-7700HQ @ 2.80GHz
  - ◆ Memory: 16 GB 2400 MHz DDR4
  - ◆ Graphics: NVIDIA GeForce GTX 1050Ti
  - ◆ Operating System: Windows 10

## Chapter Four

### 4.1 Quality Standard

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ISO 29110 is a guide applying to a very small entity, enterprise, organization, department or project up to 25 people dedicated to software development. The guide provides project management and software implementation process which integrate practice based on the selection of ISO/IEC 12207 systems and software engineering software life cycle process and ISO/IEC 15289 software engineering software life cycle process guideline for the content of software life cycle process information product (documentation) standards elements.

#### 4.1.1 Project Management Process

The purpose of the software management process is to establish and carry out in a systematic way the task of the software implementation project that allows complying with the project's objectives in the expected quality, time and cost. Selected process

Activities:

- project planning process
- project plan execution process
- project assessment and control process
- project closure process

## Chapter Five

### 5.1 Communication Management

1. Discuss with the advisor for approval on potential changes.

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2. Developer records change information to the change document.
3. Developer sends change documents to the advisor to get approval.
4. Developer updates document and software follow change information.

## 5.2 Naming Convention

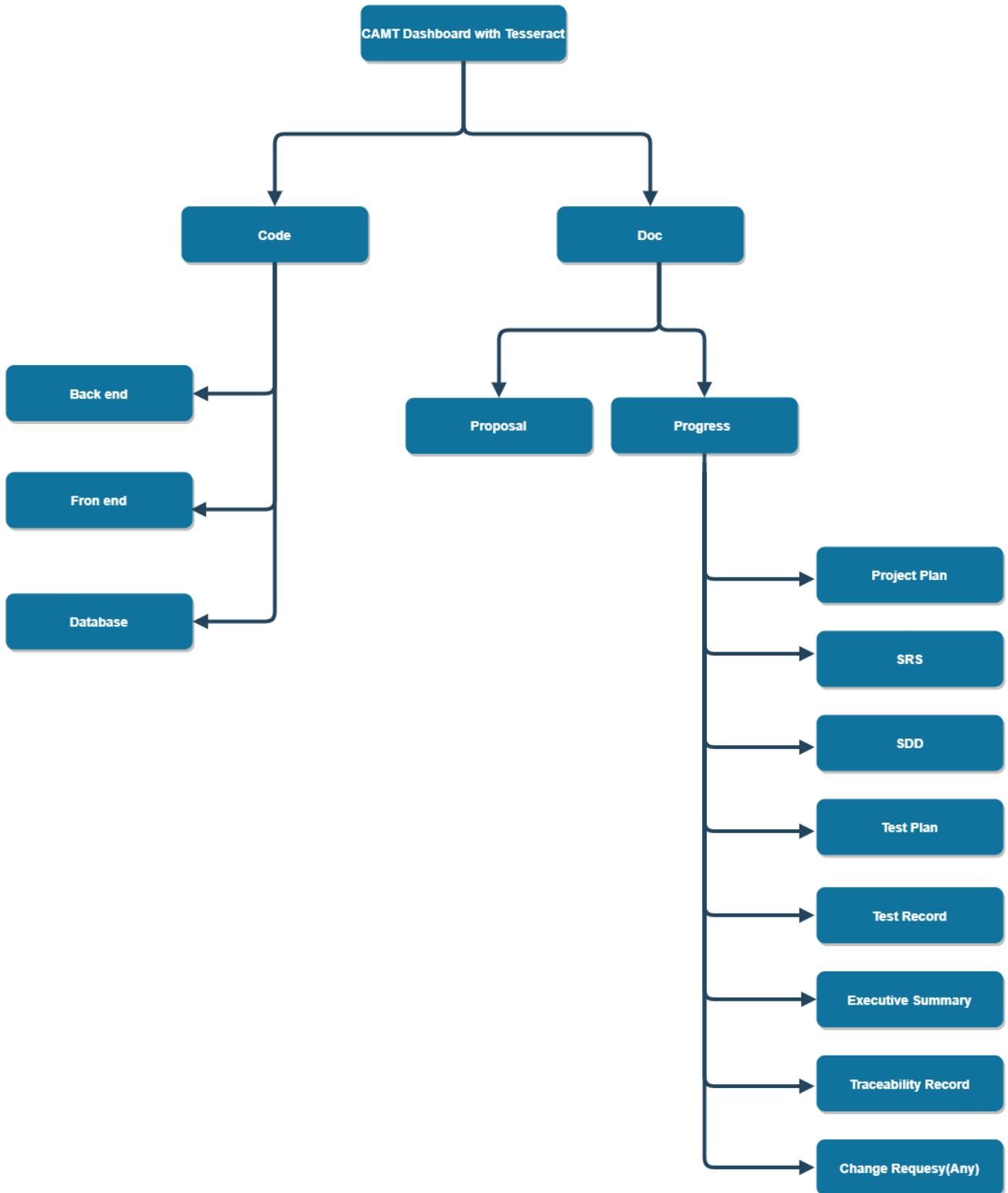
The naming convention for artifacts in this project will adopt this format.

[Project name] - [Document type]. [file type]

- Project name – CAMT Exam Dashboard with Tesseract
- Document Type - Depends on the content of the document.
- File Type - Depends on the file type

## 5.3 Project Repository

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## 5.4 Software Configuration Item Tabler

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No.	Item	File name	File Type	Owner	Path	Baseline Version
1	Project Proposal	CAMT Dashboard With Tesseract-Proposal_v[Version]	.docx	LK JT	/Doc/Proposal	1.0
2	Project Plan	CAMT Dashboard With Tesseract - ProhectPlan_v[Version]	.docx	LK JT	/Doc/ProjectPlan	1.0
3	Software Requirement Specification	CAMT Dashboard With Tesseract -SRS_v[Version]	.docx	LK JT	/Doc/SRS	1.0
4	Software Design Document	CAMT Dashboard With Tesseract - SDD_v[Version]	.docx	LK JT	/Doc/SDD	1.0
5	Test Plan	CAMT Dashboard With Tesseract - TestPlan_v[Version]	.docx	LK JT	/Doc/TestPlan	1.0
6	Test Record	CAMT Dashboard With Tesseract - TestRecord_v[Version]	.docx	LK JT	/Doc/TestRecord	1.0
7	Traceability Record	CAMT Dashboard With Tesseract - Traceability Record _v[Version]	.docx	LK JT	/Doc/ Traceability Record	1.0
8	Change Request	CAMT Dashboard With Tesseract - Change Request _v[Version]	.docx	LK JT	/Doc/ Change Request	1.0
9	Executive Summary	CAMT Dashboard With Tesseract - Executive Summary _v[Version]	.docx	LK JT	/Doc/ Executive Summary	1.0

## Chapter Six

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## 6.1 Schedule and Milestone

Milestone	Description	Milestone Criteria	Planned Date
M0	Start Project	SE Senior Project Meeting	19/04/2021
M1	Start Proposal	Project Topic Announced	21/04/2021
		-Discuss scope & list features -Prepare proposal & presentation	
M2	Start Progress 1	Proposal Presentation Result Announced	26/05/2021
		- Re-submit proposal document - Develop Progress 1 Feature 1 Authentication System Feature 2 Table and cell detection and text extraction and parsing system - Prepare presentation	02/06/2021 To 10/08/2021
M3	Start Progress 2	Progress 1 Presentation Result Announced	31/08/2021
		- Re-submit progress 1document - Develop Progress 2 Feature 3 Dashboard System Feature 4 Notification System - Prepare presentation	31/08/2021 To 22/09/2021
M4	Start Preparing for Show Pro	Progress 2 Presentation Result Announced	23/09/2021
		- Re-submit progress 1document - Develop Progress 2 Feature 1 Authentication System Feature 2 Table and cell detection and text extraction and parsing system	23/09/2021 To

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		Feature 3 Dashboard System Feature 4 Notification System - Prepare presentation	29/09/2021
M5	Release Product	Show Pro	29/09/2021
		- Show Pro	29/09/2021
M6	Start Progress	Final	Show Pro Result announced
			30/09/2021
		- Review the entire project - Do some fine-tuning	30/09/2021
			To
			10/10/2021

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# **CHAPTER 3**

## **CHANGE REQUEST**

Project Name	CAMT Exam Dashboard with Tesseract	Date	2021/6/15
Project Number	1	Requestor	Lingyu Kong
Project Manager	Pree Thiengburanathum,PhD	Project Owner	Lingyu Kong, Jiajun Tao

#### Describe the Requested Change

After careful consideration, we have concluded that, we decide to change use Vue.js instead of front-end native development

#### Describe the Reason for the Request

Vue.js provides a variety of reusable components, which can speed up the development process, and has the characteristics of lightweight framework and easy to learn.

#### Effect on Deliverable (including a list of any affected deliverable):

The affected deliverables include:

Software Design Document

Test Plan

Test Record

Traceability Record

#### Decision

Approved

Rejected

Approved with modifications

Deferred

#### Justifications

#### Additional Comments

Signature

Date

Project Name	CAMT Exam Dashboard with Tesseract	Date	2021/6/15
Change Number	2	Requestor	Lingyu Kong
Project Manager	Pree Thiengburanathum,PhD	Project Owner	Lingyu Kong, Jiajun Tao

#### Describe the Requested Change

After careful consideration, we have concluded that, we decide to change use Tencent OCR instead of Tesseract as the image recognition engine.

#### Describe the Reason for the Request

Tesseract has a high recognition error rate.

Tesseract requires extremely intelligent recognition algorithms to ensure a complete parse of tabular data.

Tencent OCR has a high recognition rate and does not require complex algorithm implementation.

Limited by own programming skills.

#### Effect on Deliverable (including a list of any affected deliverable):

The affected deliverables include:

Software Requirement Specification

Software Design Document

Test Plan

Test Record

Traceability Record

Decision	
<input type="checkbox"/> Approved <input type="checkbox"/> Approved with modifications	<input type="checkbox"/> Rejected <input type="checkbox"/> Deferred
Justifications	
<i>Additional Comments</i>	

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## **CHAPTER 4**

### **SOFTWARE REQUIREMENT SPECIFICATION**



# CAMT Exam Dashboard with Tesseract

## Software Requirement Specification

By

Lingyu Kong 612115506

Jiajun Tao 612115503

BACHELOR OF SOFTWARE ENGINEERING PROGRAM

COLLEGE OF ARTS, MEDIA AND  
TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

Pree Thiengburanathum, PhD

## CAMT Exam Dashboard with Tesseract

Lingyu Kong 612115506

Jiajun Tao 612115503

THIS REPORT HAS BEEN APPROVED TO BE A PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE  
SOFTWARE ENGINEERING PROGRAM: COLLEGE OF  
ARTS MEDIA AND TECHNOLOGY

..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

# Document History

Version	History	Status	Date	Viewable	Editable	Responsible
SRS_Version.1.docx	<p><b>Add</b></p> <ul style="list-style-type: none"> <li>• Intended Audience and Reading Suggestions</li> </ul> <p><b>Update</b></p> <ul style="list-style-type: none"> <li>• Project scope</li> </ul>	Draft	4 June , 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.2.docx	<p><b>Add</b></p> <ul style="list-style-type: none"> <li>• Chapter 3</li> <li>• Activity Diagram</li> <li>• </li> </ul>	Draft	7 June , 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.3.docx	<p><b>Add</b></p> <ul style="list-style-type: none"> <li>• URS and SRS</li> <li>• Activity Diagram</li> </ul>	Draft	10 June , 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.4.docx	<p><b>Update</b></p> <ul style="list-style-type: none"> <li>• Correct spelling</li> <li>• Correct Grammar mistakes</li> </ul>	Draft	15 June , 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.5.docx	<p><b>Add</b></p> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> <li>Chapter 3</li> </ul>	Draft	6 Sep, 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.6.docx	<p><b>Add</b></p> <ul style="list-style-type: none"> <li>• Activity diagram</li> </ul>	Draft	10 Sep, 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.7.docx	<p><b>Update</b></p> <ul style="list-style-type: none"> <li>• Use case diagram</li> <li>• Use case description</li> <li>Activity diagram</li> </ul>	Draft	14 Sep, 2021	Advisor LK JT	LK JT	LK JT

SRS_Version.8.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Adjustment document format</li></ul>	Release	16 Sep, 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.9.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Edit exam info Activity diagram</li><li>• Use case description</li></ul>	Release	26 Sep, 2021	Advisor LK JT	LK JT	LK JT
SRS_Version.10.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Chapter 2</li><li>• Chapter 3</li><li>• Adjustment document format</li></ul>	Release	10 Oct, 2021	Advisor LK JT	LK JT	LK JT

**\*LK = Lingyu Kong**

**\*JT = Jiajun Tao**

**\* Advisor = Pree Thiengburanathum,PhD**

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# Chapter One | Introduction

## 1.1 Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to consumers. Also, we shall predict and sort out how we hope this product will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered but may be discarded as the product develops.

In short, the purpose of this SRS document is to provide a detailed overview of our software product, its parameters, and its goals. This document describes the project's target audience and its user interface, hardware, and software requirements. It defines how our client, team, and audience see the product and its functionality. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes.

## 1.2 Intended Audience and Reading Suggestions

### 1.2.1 Intended Audience

#### Development team

- The software requirement specification will help everyone in developer team has the same understanding or overall scope of the project.
- The software requirement specification will help the developer to verify and validate the software product that match with the requirements in this document or not.
- The software requirement specification will help developers to develop project more efficiency.
- The software requirement specification will be required when some changing occur. Developer will know where get effect and know where to change.

#### User

- The software requirement specification will help the user to know the process of the software product.
- User can check that the requirements in software requirement specification match with their requirement or not.
- The software requirement specification can help the user to discuss with developers easier.

## 1.3 Project Overview

The CAMT exam dashboard with Tesseract is a web-based application designed to help lecturers effectively access exam information and assist staff in managing exam information. The system is built using Vue.js, SpringMVC and Mybatis, and is integrated with CMU API to facilitate lecturers to log in to the system. In addition, use SpirePDF, OPENCV and TencentOCR engines to parse the PDF exam schedule which uploaded by the lecturer or admin into an Excel table for the lecturer or admin to download, and store the data in the database at the same time. We also use the Echarts dashboard framework to generate exam overviews, professional classifications, and exam time distribution for lecturers and admin. Finally, we also use the Java Mail API to send modify and delete the exam schedule notification to the lecturers via CMU mail box.

### 1.3.1 Project Scope

The CAMT exam dashboard with Tesseract has four features, which are including these scopes:

- Feature#1: Authentication System

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The administrator uses the administrator account to log in to the system  
The lecturer uses the CMU account to log in to the system.

- Feature#2: Table and cell detection and text extraction and parsing system

The system detects and parses the manual input PDF to generates EXCEL and data frame.

- Feature#3: Dashboard System

The system generates a dashboard based on the data frame that generated by the detection and analysis.

- Feature#4: Notification System

The admin sends an exam notification to the protector based on the detected and parsed information.

### 1.3.2 Document Scope

This document includes Use case diagram, Use case description, Activity diagram, Software requirement Specification, User requirement specification.

## 1.4 Acronyms and Definition

### 1.4.1 Acronyms

SRS	Software Requirement Specification
URS	User Requirement Specification
UCD	Use Case Diagram
AD	Activity Diagram
SD	Sequence Diagram
UC	Use Case
CD	Class Diagram
UI	User Interface

### 1.4.2 Definition

Name	Definition
Feature	Transformation of input parameters to output parameters based on a specified algorithm. It describes the functionality of the product in the language of the product. Used for requirements analysis, design, coding, testing or maintenance. [IEEE90]

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IEEE	Institute for Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and computer scientists. [IEEE90]
Requirement	(1) A condition or capability needed by the user to solve a problem or achieve an objective. (2) A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document. (3) A documented representation of a condition or capability as in definition (1) or (2). [IEEE90]
Specification	Precise description of an activity or work product that serves as the basic or input for further activities or work product. A specification can comprise requirements for a product and how they will be solved. Different parts of a specification (e.g. what is to be done, how it will be done) must not be mixed. [IEEE90]
Use case	(1) Concept to describe a system based on usage of system resources by its environment. Characterized by an objective-set of interactions within and at the borders of that system. (2) Notation from UML for describing a scenario (Usage approach, operational scenario) from the perspective of this user. [IEEE90]

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# Chapter Two | Specific Requirement

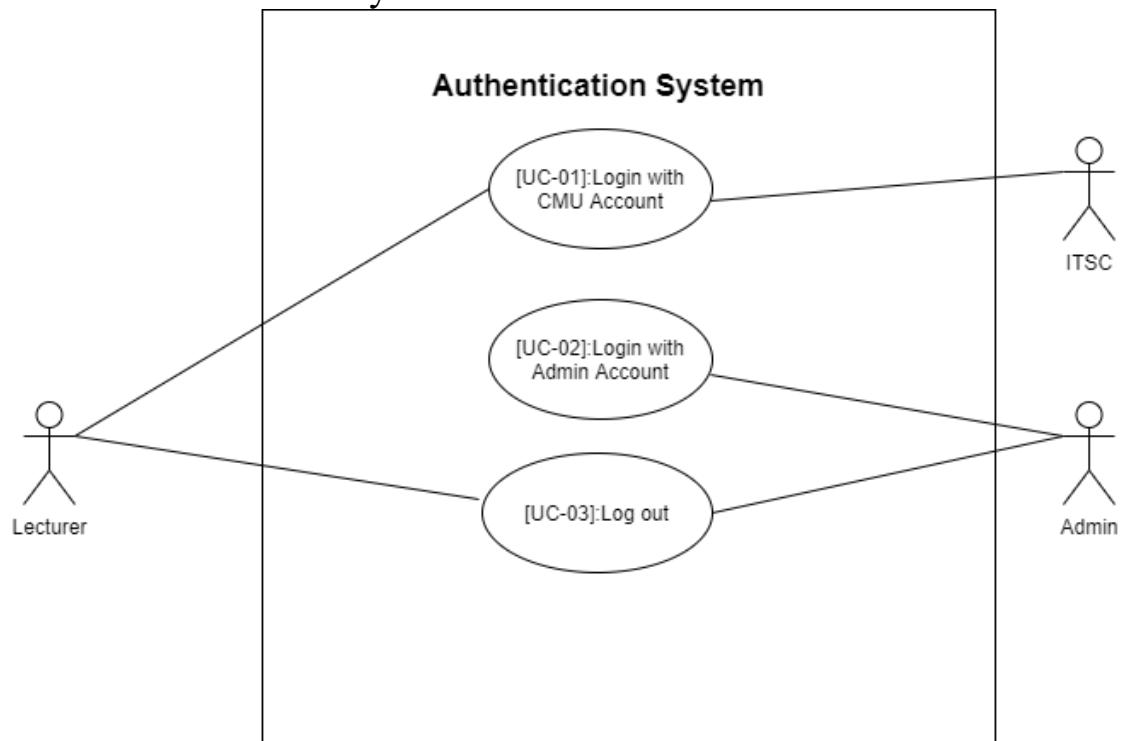
## 2.1 Use Case Scenarios

### 2.1.1 Overview



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### 2.1.2 Authentication System



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### UC-01 Login with CMU Account

Use Case ID	UC-01		
Use Case Name	Login with CMU Account		
Created By	Lingyu Kong	Last Update By	Lingyu Kong
Date Created	01/06/2021	Last Revision Date	30/07/2021
Actors	Lecturer, ITSC		
Description	Lecturer can use CMU account sign in to the system.		
Trigger	The Lecturer clicks the “Login with CMU Account” button in the Login page(UI-01).		
Preconditions	The lecturer opens the Login page(UI-01) in the system.		
Use Case Input Specification			
Input	type	Constraint	Example
Email	String	Must be an ITSC format (include "@")	Lingyu_k@cmu.ac.th
Password	String	Must be at least 6 characters and include a number	123456
Post conditions	-		
Normal Flows	Lecturer	ITSC	System
1.	The Lecturer clicks the “Sign in with CMU Account” button at the Login page(UI-01).		
2.			The system shall direct to the Sign In With CMU IT Account page.
3.	The Lecturer fills in the email and password into the input box and clicks the “Sign In” button.		
4.		ITSC system validates email and password [A1].	
5.			System get authentication token from backend.
6.	Lecturer is logged in to system		
7.			System shall display direct to the ParseFile Page(UI-02).
8.			System shall display the lecturer's email in the upper right corner for lecturer.
Alternative	[A1: Email or password invalid]		

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Flow	A4. System notifies the guest that “Username or Password is invalid” A5. Goes to normal flow 3
Exception Flow	-
Assumption	- The Lecturer understands English. - Can connect to the internet

URS-01: Lecturer can Login to the system by using their CMU IT Account and corresponding password which are already registered in the CMU system.

SRS-001: The system provides the login page(UI-01) which include Login panel, “Login with CMU Account” and “Login” button.

SRS-002: When lecturer click the “Login with CMU Account” button, system shall direct to the Sign In With CMU IT Account page, which includes the "Email" input box, "Password" input box, "Sign In" button, and “Forgot password?” link.

SRS-003: The system verifies the information inputted by the Lecturer when lecturer click “Sign In” button.

1. When lecturer input invalid email or password: the message “Username or Password is invalid” is shown.

SRS-004: System shall get authentication token from backend.

SRS-005: when lecturer successfully login, the system shall display direct to the ParseFile Page(UI-02).

SRS-006: The system shall display the lecturer’s email in the upper right corner for lecturer.

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**UC-02 Login with Admin Account**

Use Case ID	UC-02				
Use Case Name	Login with Admin Account				
Created By	Lingyu Kong	Last Update By	Lingyu Kong		
Date Created	01/06/2021	Last Revision Date	30/07/2021		
Actors	Admin				
Description	Admin can use admin account sign in to the system.				
Trigger	The admin clicks the “Login” button in the Login page(UI-01).				
Preconditions	The admin opens the Login page(UI-01) in the system.				
Use Case Input Specification					
Input	type	Constraint	Example		
username	String	Must be at least 5 characters	Admin		
Password	String	Must be at least 5 characters and include a number	123456		
Post conditions	-				
Normal Flows	Admin	System			
1.	The admin fills in the email and password into the input box and clicks the “Login” button.				
2.		The system verifies the information inputted by the Admin.[A1], [A2], [A3], [A4],[E1]			
3.		The system shall display the name in the upper right corner of the ParseFile page(UI-02) for admin.			
Alternative Flow	<p>[A1: The lecturer did not input username.]            1. The system displays the validation message “Please enter a username”.            2. The system redirects normal flow 1.</p> <p>[A2: The lecturer did not input the password.]            1. The system displays the validation message “Please enter a password”.            2. The system redirects normal flow 1.</p> <p>[A3: Incorrect username.]            1. The system displays the error message “Username or Password not match”.            2. The system redirects normal flow 1.</p> <p>[A4: Incorrect password]            1. The system displays the error message “Username or Password not match”.            2. The system redirects normal flow 1.</p>				
Exception Flow	-				
Assumption	<ul style="list-style-type: none"> <li>- The Lecturer understands English.</li> <li>- Can connect to the internet</li> </ul>				

URS-02: Administrator Login to the system by using their Admin Account and corresponding password which are already registered in the database.

SRS-001: The system provides the login page(UI-01) which include Log In panel, “Login with CMU Account” and “Login” button.

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SRS-007: The system verifies the information inputted by the admin when admin click “Login” button.

1. When admin did not input email: the message “Please enter a username” is shown.
2. When admin did not input the password: the message “Please enter a password” is shown.
3. When admin input incorrect username: the message “Username or Password not match” is shown.

4. When admin input incorrect password: the message “Username or Password not match” is shown.

SRS-008: when admin successfully sign in, the system shall direct to the ParseFile Page(UI-02).

SRS-009: The system shall display the admin’s name in the upper right corner of the ParseFile page(UI-02) for admin.

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### UC-03 Log out

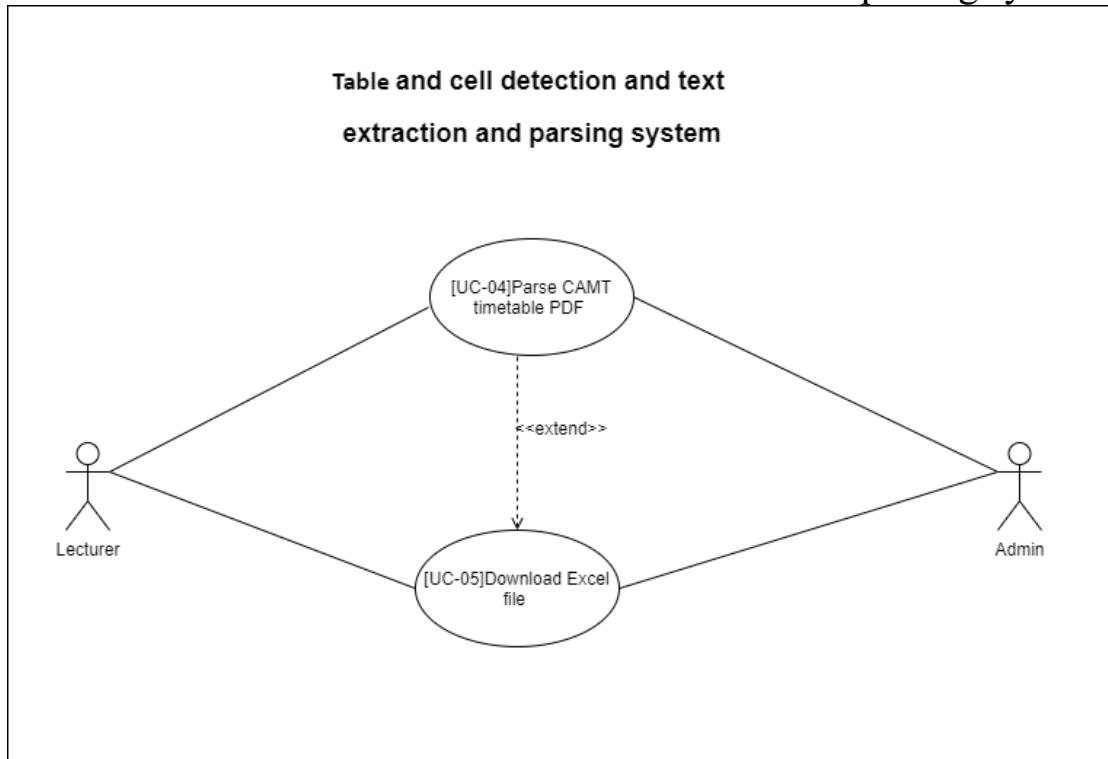
Use Case ID	UC-03		
Use Case Name	Log out		
Created By	Lingyu Kong	Last Update By	Lingyu Kong
Date Created	01/06/2021	Last Revision Date	01/07/2021
Actors	Admin, Lecturer		
Description	Admin or Lecturer can logout from the system		
Trigger	The administrator or lecturer clicks the "Logout" button under the email selection option on the most right of the navigation.		
Preconditions	The admin or lecturer already log in the system.		
Use Case Input Specification			
Input	type	Constraint	Example
-	-	-	-
Post conditions	-		
Normal Flows	Admin		System
1.	The admin or lecturer clicks on the email which at the most right of the navigation.		
2.			The system should display a "Logout" button under the select option of the email of the admin or lecturer.
3.	The admin or lecturer clicks the "Log out" button which under the select option of the email of the admin or lecturer.		
4.			The system shall log out the admin or lecturer account and redirect to the Login page(UI-01).
Alternative Flow	-		
Exception Flow	-		
Assumption	<ul style="list-style-type: none"> <li>- The Lecturer understands English.</li> <li>- Can connect to the internet</li> </ul>		

URS-03: Admin or lecturer click “Log out” button to logout from the system.

SRS-010: when admin or lecturer clicks the “log out” button under the select option of the email of the admin or lecturer ,the system logs out the admin or lecturer account and redirects to the Login page(UI-01).

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### 2.1.3 Table and cell detection and text extraction and parsing system



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#### UC-04 Parse CAMT timetable PDF

Use Case ID	UC-04		
Use Case Name	Parse CAMT timetable PDF		
Created By	Lingyu Kong	Last Update By	Lingyu Kong
Date Created	02/06/2021	Last Revision Date	30/07/2021
Actors	Lecturer, Admin		
Description	The admin or lecturer can upload CAMT timetable PDF from local computer to the system for detection and parses.		
Trigger	The admin or lecturer clicks the “Click Upload” button in the ParseFile page(UI-02).		
Preconditions	The admin or lecturer signed in to the system and open ParseFile page(UI-02).		

#### Use Case Input Specification

Input	type	Constraint	Example
File	File	Must be PDF format	Image.pdf
Post conditions	The system successfully detects and parses the files uploaded by the admin or lecturer and the “Parse success”, “Download Excel” button is shown.		
Normal Flows	Lecturer		
1.	The admin or lecturer clicks the “ParseFile” text at the left in the navigation.		
2.	The system shall display the ParseFile page(UI-02), which includes the title "ParseFile", Upload panel, "Click Upload" "Download Excel" button.		
3.	The admin or lecturer clicks the Upload panel or drag file to the Upload panel.		
4.	The system shall open the local file explorer for admin and lecturers to choose the files to upload.		
5.	The admin and lecturer clicks “Click Upload” button which under the Upload panel.		
6.	The system verify file format which uploaded by the admin or lecturer.[A1], [A2], [A3]		
7.	The system paring files and show “Being parse” button which under the Upload panel. [A4].[A5],[A6]		
8.	The system shall show “Parse success” button which under the Upload panel and store data in the database.		
9.	The system will no longer disable the “Download Excel” button.		
Alternative Flow	[A1: The file format is not PDF format]		

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	<p>1. The system displays the message “file type does not meet the requirement, only is application/pdf”.</p> <p>2. The system shall displays the “Parse failed” button which under the Upload panel.</p> <p>3. The system redirects normal flow 3.</p> <p>[A2: The file is an empty PDF file]</p> <ol style="list-style-type: none"> <li>1. The system displays the message “file is empty”.</li> <li>2. The system shall displays the “Parse failed” button which under the Upload panel.</li> <li>3. The system redirects normal flow 3.</li> </ol> <p>[A3: The size of file is exceed max size ]</p> <ol style="list-style-type: none"> <li>1. The system displays the message “file size cant exceed 10 MB”.</li> <li>2. The system shall displays the “Parse failed” button which under the Upload panel.</li> <li>3. The system redirects normal flow 3.</li> </ol> <p>[A4: The number of pages of the pdf document is less than 0]</p> <ol style="list-style-type: none"> <li>1. The system displays the message “pdf transcode img failed”.</li> <li>2. The system shall displays the “Parse failed” button which under the Upload panel.</li> <li>3. The system redirects normal flow 3.</li> </ol> <p>[A5:Not files exist in the pdfImgDirPath]</p> <ol style="list-style-type: none"> <li>1. The system displays the message “no such files to extract table”.</li> <li>2. The system shall displays the “Parse failed” button which under the Upload panel.</li> <li>3. The system redirects normal flow 3.</li> </ol> <p>[A6: Not files exist in the tableImgDirPath ]</p> <ol style="list-style-type: none"> <li>1. The system displays the message “no such files to extract table”.</li> <li>2. The system shall displays the “Parse failed” button which under the Upload panel.</li> <li>3. The system redirects normal flow 3.</li> </ol>
Exception Flow	-
Assumption	<ul style="list-style-type: none"> <li>- The Lecturer understands English.</li> <li>- Can connect to the internet</li> </ul>

URS-04: The admin or lecturer can upload the CAMT timetable PDF from the local computer to the system for detection and parses.

SRS-011: When admin or lecturer clicks the “ParseFile” text at the left in the navigation, the system shall display the ParseFile page(UI-02), which includes the title " ParseFile ", Upload panel, ”Click Upload” “Download Excel” button.

SRS-012: When admin or lecturer clicks the Upload panel or drag file to the Upload panel, the system shall open the local file explorer for admin or lecturers to upload file.

SRS-013: When admin and lecturer clicks “Click Upload” button which under the Upload panel, the system shall verify file format which uploaded by the admin or lecturer.

1. When admin or lecturer upload prohibited file formats: the message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.

2. When admin or lecturer upload empty pdf file : the message “file is empty” and “Parse failed” button is shown.

3. When admin or lecturer upload other pdf file: the message “file size cant exceed 10 MB” and “Parse failed” button is shown.

SRS-014: When verify file format is complete, the system shall start paring files and show “Being parse” button which under the Upload panel.

1. When the number of pages of the pdf file is less than 0: the message “pdf transcode img fail” and “Parse failed” button is shown.

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2. When no file exists in the pdfImgDirPath directory: the message “no such files to extract table” and “Parse failed” button is shown.

3. When no files exist in the tableImgDirPath directory: the message “no such files to extract table” and “Parse failed” button is shown.

SRS-015: When parse file is complete, the system shall show “Parse success” button which under the Upload panel and store data in the database.

SRS-016: When parse file is complete, the system will no longer disable the "Download Excel" button.

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### UC-05 Download Excel file

Use Case ID	UC-05		
Use Case Name	Download Excel file		
Created By	Lingyu Kong	Last Update By	Lingyu Kong
Date Created	02/06/2021	Last Revision Date	30/07/2021
Actors	Lecturer, Admin		
Description	The admin or lecturer can Download Parsed Excel file from the system		
Trigger	The admin or lecturer clicks the “Download Excel” button in the ParseFile page(UI-02).		
Preconditions	“Parse success” button is shown and "Download Excel" button is not disable.		
Use Case Input Specification			
Input	type	Constraint	Example
-	-	-	-
Post conditions	-		
Normal Flows	Lecturer		System
1.	The admin or lecturer clicks the "Download EXCEL" button which under the Upload panel.		
2.			The system shall download file to admin or lecturer local computer.[A1],[A2]
Alternative Flow	[A1: The corresponding file was not found] 1. The system displays the message “not such fileRecord, id: (\$id)”. 2. The system redirects normal flow 1. [A1: The corresponding file does not exist ] 1. The system displays the message “not such file, file name (\$name)”. 2. The system redirects normal flow 1.		
Exception Flow	-		
Assumption	- The Lecturer understands English. - Can connect to the internet		

URS-05: The admin or lecturer can Download Parsed Excel file from the system

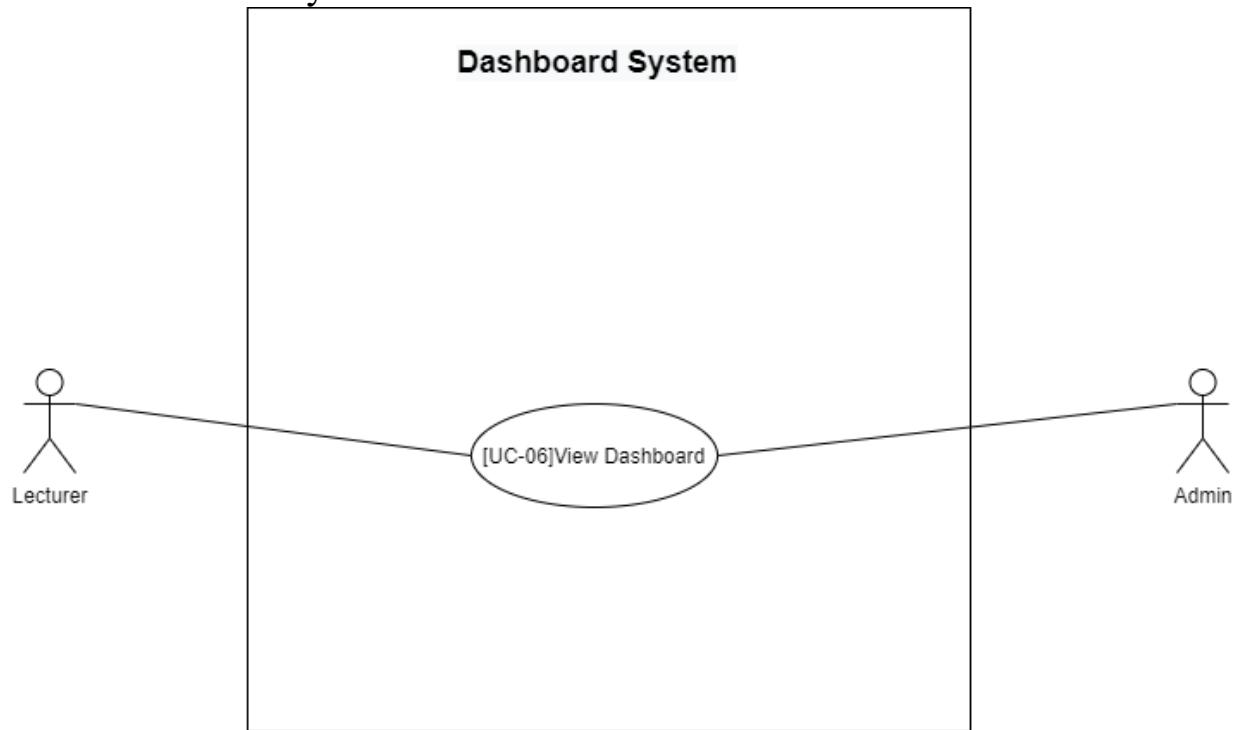
SRS-017: When admin or lecturer click “Download Excel” button, the system shall download file to admins or lecturers local computer.

1. When the corresponding file is not found in the database: the message “not such fileRecord, id: (\$id)” is shown.

2. When there is no corresponding file in the filestoragePath: the message “no such file, file name (\$name)” is shown.

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## 2.1.4 Dashboard System



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### UC-06 View Dashboard

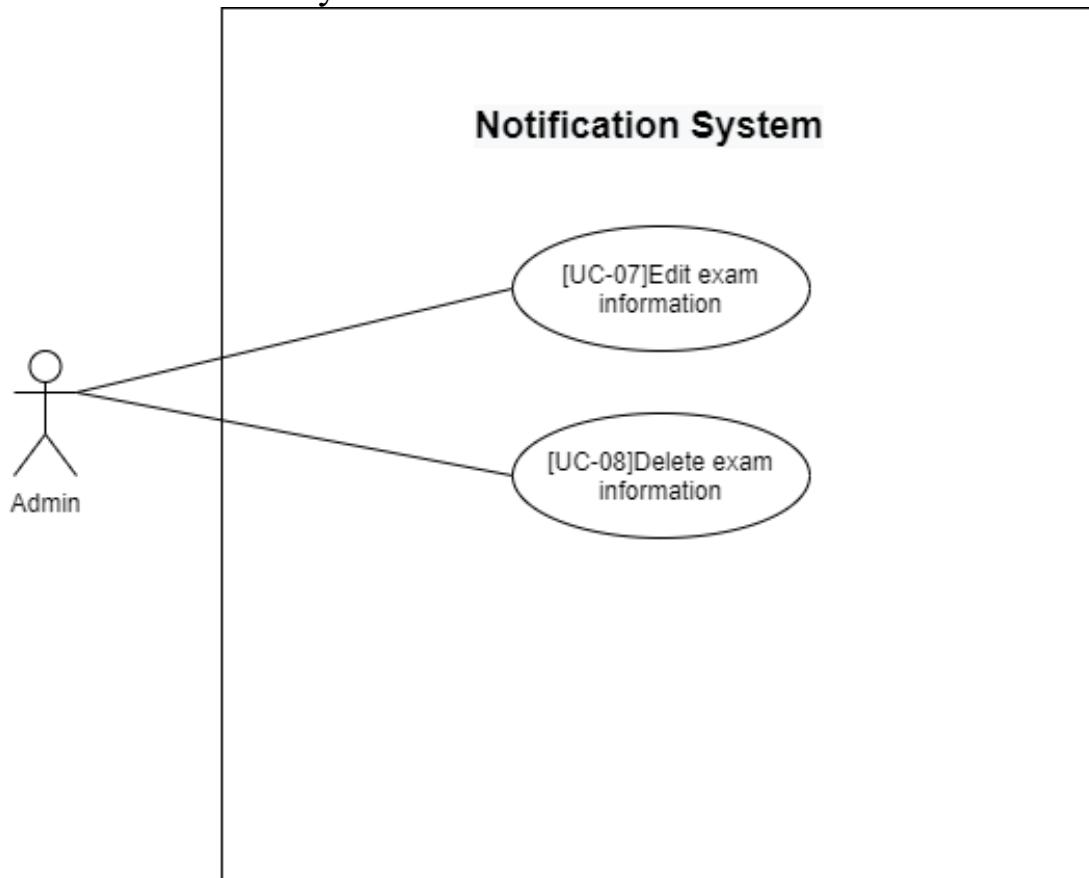
Use Case ID	UC-06		
Use Case Name	View Dashboard		
Created By	Lingyu Kong	Created By	Lingyu Kong
Date Created	06/09/2021	Last Revision Date	07/10/2021
Actors	Lecturer, Admin		
Description	Lecturer and Admin can view dashboard.		
Trigger	The Lecturer/Admin clicks the “Dashboard” button at the left navigation bar.		
Preconditions	The lecturer/Admin logged in to the system.		
Use Case Input Specification			
Input	type	Constraint	Example
-	-	-	-
Post conditions	The dashboard is rendered by the page.		
Normal Flows	Admin		System
1.	The admin/lecturer click “Dashboard” at left navigation Bar.		
2.			The system shall direct to the Dashboard page(UI-04) which includes count of courses, sections, protectors and pie chart of groupbydate, groupbycourse, groupbyprofessional.
Alternative Flow	-		
Exception Flow	-		
Assumption	<ul style="list-style-type: none"> <li>- The Lecturer understands English.</li> <li>- Can connect to the internet</li> </ul>		

URS-06: The admin or Lecturer can view dashboard of exam information.

SRS-018: The system shall direct to the Dashboard page(UI-04) which includes count of courses, sections, protectors and pie chart of groupbydate, groupbycourse, groupbyprofessional.

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### 2.1.5 Notification system



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**UC-07 Edit exam information**

Use Case ID	UC-07		
Use Case Name	Edit exam information		
Created By	Lingyu Kong	Created By	Lingyu Kong
Date Created	06/09/2021	Last Revision Date	26/09/2021
Actors	Admin		
Description	Admin can edit exam information.		
Trigger	The Admin clicks the “Edit” button at exam list at the ExaminfoList page(UI-05).		
Preconditions	The Admin logged in to the system and arrived to the ExaminfoList page(UI-05).		

**Use Case Input Specification**

Input	type	Constraint	Example
Date	String	Less than 64 characters	“Thursday 28January, 2021”
Time	String	Less than 64 characters	“15.30-18.30”
Course	String	Less than 64 characters	“954491”
Section	String	Less than 32 characters	“002”
Students	String	Less than 32 characters	“30”
Room	String	Less than 32 characters	“ILLC-B201”
Committee	String	Less than 100 characters	“Lingyu Kong”
Post conditions	The data has been synchronized and the message "Update Successfully" is displayed at the upper right corner and email notification has been send.		
Normal Flows	Admin		System
1.	The admin click “ExamInfoList” button at left navigation Bar.		
2.			The system shall display the ExamInfoList page(UI-05) which includes exam information table, “Edit” and “Cancel” button.
3.	The admin click “Edit” button at row “Actions” at most right of exam information table.		
4.			The system shall display edit form(UI-06) which include 7 input box(Date, Time, Course, Section, Students, Room, Committee, Actions) “Cancel” and “Confirm” button.
5.	The admin edits the exam information in the input box.		
6.	The admin click “Confirm” button to save information.[A1]		
7.			The system display notification dialog(UI-07) which includes text “Do you want to send email notification?”, “Cancel” and “Send” button.
8.	The admin click “Confirm”		

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	button to send Email notification.[A2]	
9.		The system synchronize data display message “Update Successfully” at upper right corner and Send email notification to the committee.[A3] [A4]
Alternative Flow	[A1: The Admin click “Cancel” button at edit form] 1. The system redirects normal flow 2. [A2: The Admin click “Cancel” button at send email dialog] 1. The system synchronize data and display message “Update Successfully” at upper right corner. [A3: failed to update date in database] 1. The system display “Update examInfo data failed, please contact admin” 2. The system redirects normal flow 2. [A4: Email is invalid] 1. The system display “recipient email is invalid(\$email)”. 2. The system redirects normal flow 2.	
Exception Flow	-	
Assumption	- The Lecturer understands English. - Can connect to the internet	

URS-07: The admin or lecturer can edit exam information.

SRS-019: When admin clicks the “ExamInfoList” text at left navigation Bar, the system shall display the ExamInfoList page(UI-05) which includes exam information table, “Edit” and “Delete” button.

SRS-020: When admin clicks the “Edit” text at row “Actions” at most right of exam information table, the system shall display edit form(UI-06) which include 7 input box(Date, Time, Course, Section, Students, Room, Committee, Actions) “Cancel” and “Confirm” button.

1. When admin click “Cancel” button: the system will close edit form.

SRS-021: When admin clicks the “Confirm” button at edit form(UI-06), the system display notification dialog(UI-07) which includes text “Do you want to send email notification?”, “Cancel” and “Send” button.

1. When admin clicks “Confirm” button : the system will send email notification to the committee and the message “Update Successfully” is shown.

2. When admin clicks “Cancel” button : the system will not send email notification to the committee and the message “Update Successfully” is shown.

3. When failed to update data in database : the message “Update examInfo data failed, please contact admin” is shown.

4. When recipient email is invalid: the message “recipient email is invalid(\$email)” is shown.

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**UC-08 Delete exam information**

Use Case ID	UC-08		
Use Case Name	Delete exam information		
Created By	Lingyu Kong	Last Update By	Lingyu Kong
Date Created	06/09/2021	Last Revision Date	26/09/2021
Actors	Admin		
Description	The admin can delete exam information		
Trigger	The Admin clicks the “Delete” button at exam list at the ExaminfoList page(UI-05)		
Preconditions	The Admin logged in to the system and arrived to the ExaminfoList page(UI-05).		
<b>Use Case Input Specification</b>			
Input	type	Constraint	Example
-	-	-	-
Post conditions	The data has been synchronized and the message "Delete Successfully" is displayed at the upper right corner.		
Normal Flows	Lecturer		System
1.	The admin click “ExamInfoList” button at left navigation Bar.		
2.			The system shall display the ExamInfoList page(UI-05) which includes exam information table, “Edit” and “Delete” button.
3.	The admin click “Delete” button at row “Actions” at most right of exam information table.		
4.			The system display notification dialog(UI-07) which includes text “Do you want to send email notification?”, “Cancel” and “Send” button.
5.	The admin click “Confirm” button to send Email notification.[A1]		
6.			The system synchronize data display message “Update Successfully” at upper right corner and Send email notification to the committee.[A2][A3]
Alternative Flow	<p>[A1: The Admin click “Cancel” button at send email dialog]            1. The system synchronize data and display message “delete Successfully” at upper right corner.            [A2: failed to delete date in database]            1. The system display “Delete examInfo data failed, please contact admin”            2. The system redirects normal flow 2.            [A3: Email is invalid]            1. The system display “recipient email is invalid(\$email)”.            2. The system redirects normal flow 2.</p>		
Exception Flow	-		
Assumption	<ul style="list-style-type: none"> <li>- The Lecturer understands English.</li> <li>- Can connect to the internet</li> </ul>		

URS-08: The admin can delete exam information.

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SRS-019: When admin clicks the “ExamInfoList” text at left navigation Bar, the system shall display the ExamInfoList page(UI-05) which includes exam information table, “Edit” and “Delete” button.

SRS-22: When admin clicks the “Delete” text at row “Actions” at most right of exam information table, the system shall display notification dialog(UI-07) which includes text “Do you want to send email notification?”, “Cancel” and “Send” button.

1. When admin clicks “Confirm” button : the system will send email notification to the committee and the message “Delete Successfully” is shown.

2. When admin clicks “Cancel” button : the system will not send email notification to the committee and the message “Delete Successfully” is shown.

3. When failed to delete data in database : the message “Delete examInfo data failed, please contact admin” is shown.

4. When recipient email is invalid: the message “recipient email is invalid(\$email)” is shown.

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## 2.2 User requirement Specification

### 2.2.1 Progress I

#### Feature 1: Authentication System

**URS-01:** Lecturer can Login to the system by using their CMU IT Account and corresponding password which are already registered in the CMU system.

**URS-02:** Administrator Login to the system by using their Admin Account and corresponding password which are already registered in the database.

**URS-03:** Admin or lecturer click “Log out” button to logout from the system.

#### Feature 2: Table and cell detection and text extraction and parsing system

**URS-04:** The admin or lecturer can upload the CAMT timetable PDF from the local computer to the system for detection and parses.

**URS-05:** The admin or lecturer can Download Parsed Excel file from the system

### 2.2.1 Progress II

#### Feature 3: Dashboard System

**URS-06:** The admin or Lecturer can view dashboard of exam information.

#### Feature 4: Notification System

**URS-07:** The admin or lecturer can edit exam information.

**URS-08:** The admin can delete exam information.

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## 2.2 System requirement Specification

### 2.2.1 Progress I

**SRS-001:** The system provides the login page(UI-01) which include Login panel, “Login with CMU Account” and “Login” button.

**SRS-002:** When lecturer click the “Login with CMU Account” button, system shall direct to the Sign In With CMU IT Account page, which includes the "Email" input box, "Password" input box, "Sign In" button, and "Forgot password?" link.

**SRS-003:** The system verifies the information inputted by the Lecturer when lecturer click “Sign In” button.

1. When lecturer input invalid email or password: the message “Username or Password is invalid” is shown.

**SRS-004:** System shall get authentication token from backend.

**SRS-005:** when lecturer successfully login, the system shall display direct to the ParseFile Page(UI-02).

**SRS-006:** The system shall display the lecturer’s email in the upper right corner for lecturer.

**SRS-007:** The system verifies the information inputted by the admin when admin click “Login” button.

1. When admin did not input email: the message “Please enter a username” is shown.
2. When admin did not input the password: the message “Please enter a password” is shown.
3. When admin input incorrect username: the message “Username or Password not match” is shown.
4. When admin input incorrect password: the message “Username or Password not match” is shown.

**SRS-008:** when admin successfully sign in, the system shall direct to the ParseFile Page(UI-02).

**SRS-009:** The system shall display the admin’s name in the upper right corner of the ParseFile page(UI-02) for admin.

**SRS-010:** when admin or lecturer clicks the “log out” button under the select option of the email of the admin or lecturer ,the system logs out the admin or lecturer account and redirects to the Login page(UI-01).

**SRS-011:** When admin or lecturer clicks the “ParseFile” text at the left in the navigation, the system shall display the ParseFile page(UI-02), which includes the title " ParseFile ", Upload panel, ”Click Upload” “Download Excel” button.

**SRS-012:** When admin or lecturer clicks the Upload panel or drag file to the Upload panel, the system shall open the local file explorer for admin or lecturers to upload file.

**SRS-013:** When admin and lecturer clicks “Click Upload” button which under the Upload panel, the system shall verify file format which uploaded by the admin or lecturer.

1. When admin or lecturer upload prohibited file formats: the message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.
2. When admin or lecturer upload empty pdf file : the message “file is empty” and “Parse failed” button is shown.
3. When admin or lecturer upload other pdf file: the message “file size cant exceed 10 MB” and “Parse failed” button is shown.

**SRS-014:** When verify file format is complete, the system shall start paring files and show “Being parse” button which under the Upload panel.

1. When the number of pages of the pdf file is less than 0: the message “pdf transcode img fail” and “Parse failed” button is shown.
2. When no file exists in the pdfImgDirPath directory: the message “no such files to extract table” and “Parse failed” button is shown.
3. When no files exist in the tableImgDirPath directory: the message “no such files to extract table” and “Parse failed” button is shown.

**SRS-015:** When parse file is complete, the system shall show “Parse success” button which under the Upload panel and store data in the database.

**SRS-016:** When parse file is complete, the system will no longer disable the "Download

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Excel" button.

**SRS-017:** When admin or lecturer click “Download Excel” button, the system shall download file to admins or lecturers local computer.

1. When the corresponding file is not found in the database: the message “not such fileRecord, id: (\$id)” is shown.
2. When there is no corresponding file in the filestoragePath: the message “no such file, file name (\$name)” is shown.

## 2.2.1 Progress II

**SRS-018:** The system shall direct to the Dashboard page(UI-04) which includes count of courses, sections, protectors and pie chart of groupbydate, groupbycourse, groupbyprofessional.

**SRS-019:** When admin clicks the “ExamInfoList” text at left navigation Bar, the system shall display the ExamInfoList page(UI-05) which includes exam information table, “Edit” and “Delete” button.

**SRS-020:** When admin clicks the “Edit” text at row “Actions” at most right of exam information table, the system shall display edit form(UI-06) which include 7 input box(Date, Time, Course, Section, Students, Room, Committee, Actions) “Cancel” and “Confirm” button.

1. When admin click “Cancel” button: the system will close edit form.

**SRS-021:** When admin clicks the “Confirm” button at edit form, the system display notification dialog(UI-07) which includes text “Do you want to send email notification?”, “Cancel” and “Send” button.

1. When admin clicks “Confirm” button : the system will send email notification to the committee and the message “Update Successfully” is shown.
2. When admin clicks “Cancel” button : the system will not send email notification to the committee and the message “Update Successfully” is shown.
3. When failed to update data in database : the message “Update examInfo data failed, please contact admin” is shown.
4. When recipient email is invalid: the message “recipient email is invalid(\$email)” is shown.

**SRS-22:** When admin clicks the “Delete” text at row “Actions” at most right of exam information table, the system shall display notification dialog(UI-07) which includes text “Do you want to send email notification?”, “Cancel” and “Send” button.

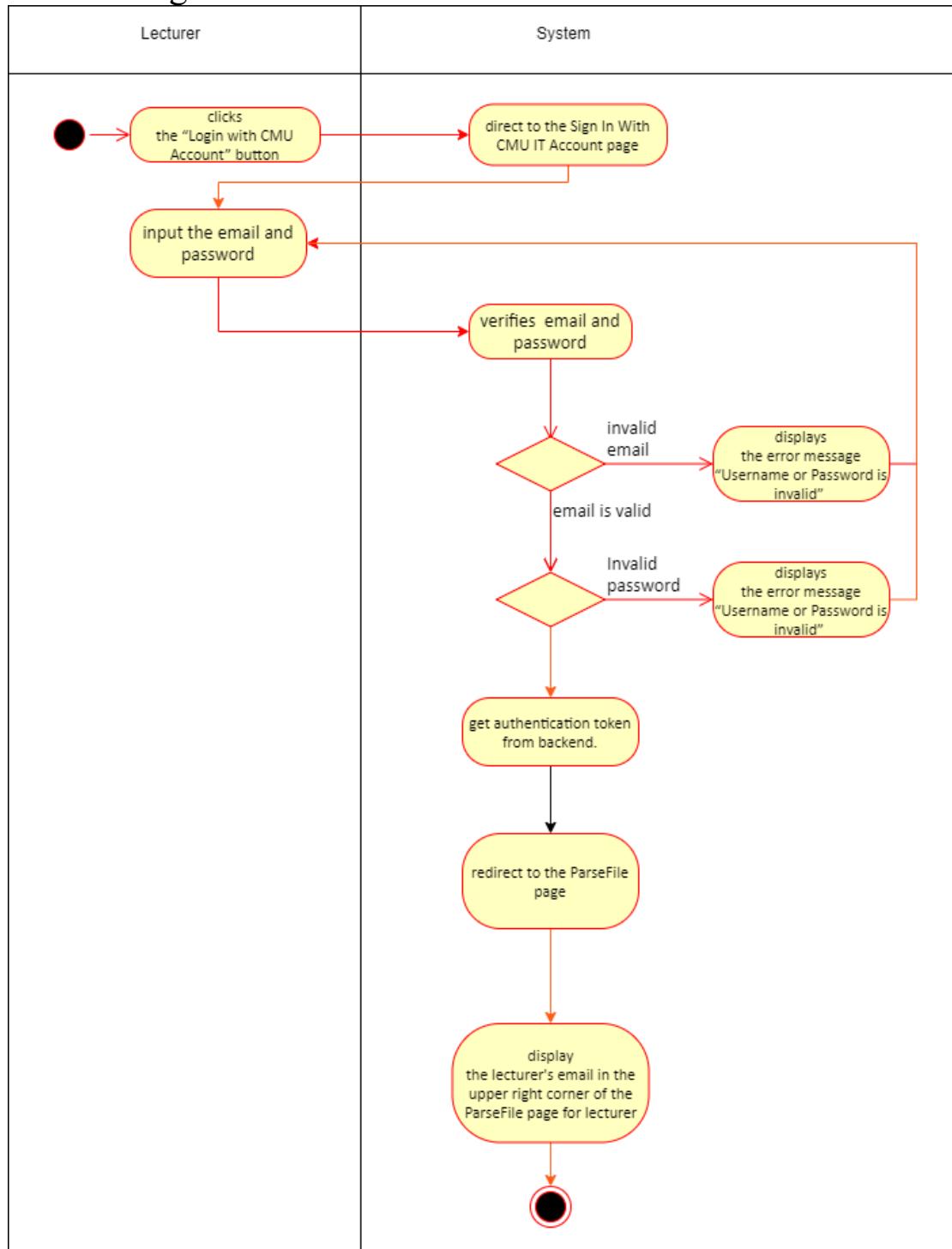
1. When admin clicks “Confirm” button : the system will send email notification to the committee and the message “Delete Successfully” is shown.
2. When admin clicks “Cancel” button : the system will not send email notification to the committee and the message “Delete Successfully” is shown.
3. When failed to delete data in database : the message “Delete examInfo data failed, please contact admin” is shown.
4. When recipient email is invalid: the message “recipient email is invalid(\$email)” is shown.

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## Chapter Two | Activity Diagram

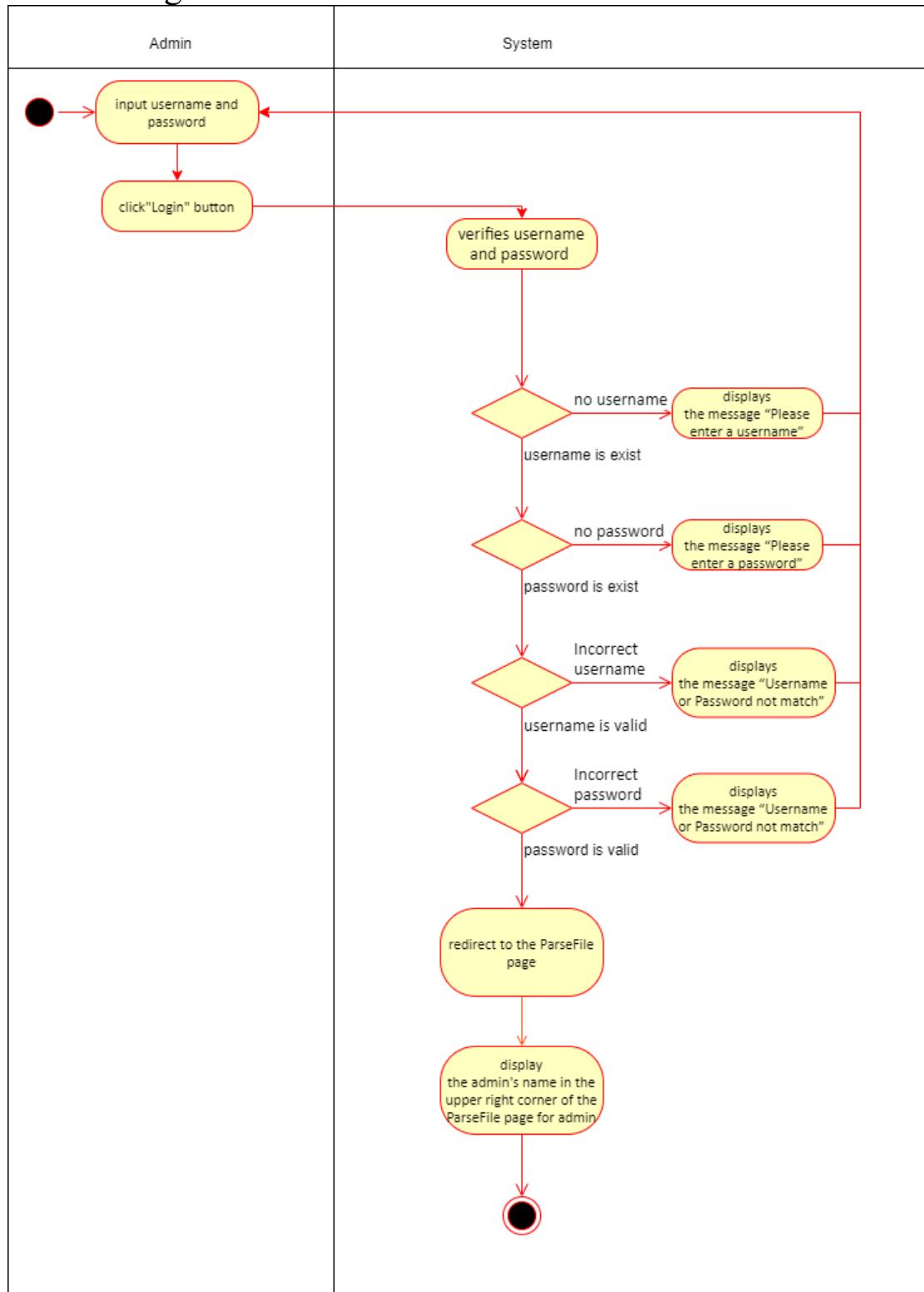
### 3.1 Authentication System

#### AD-01: Login with CMU Account



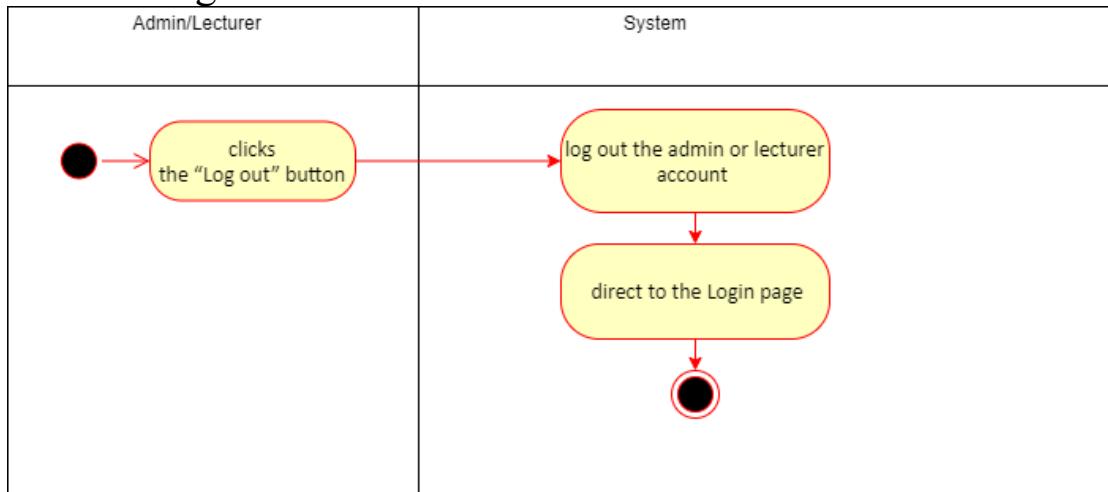
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## AD-02: Login with Admin Account



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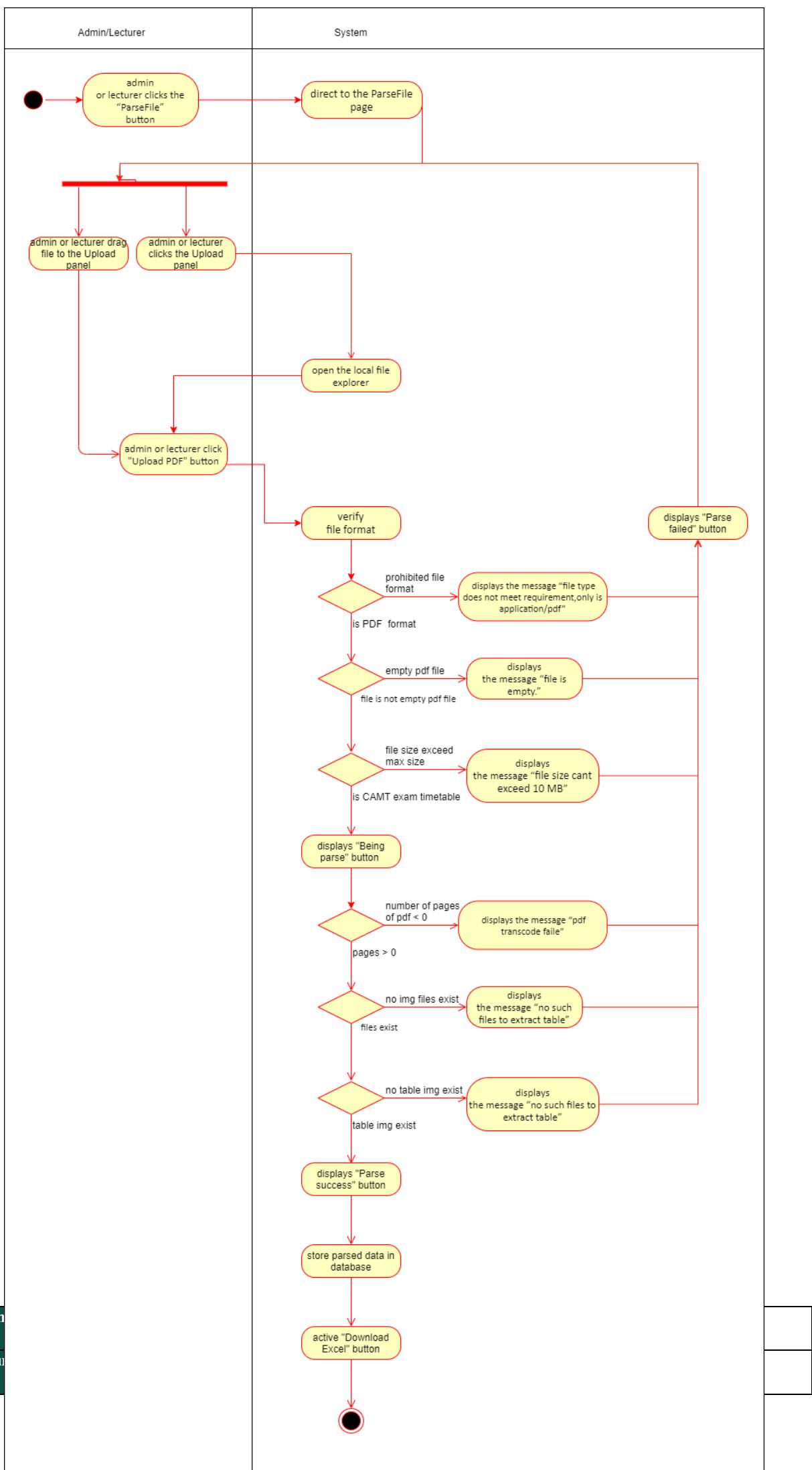
## AD-03: Log out



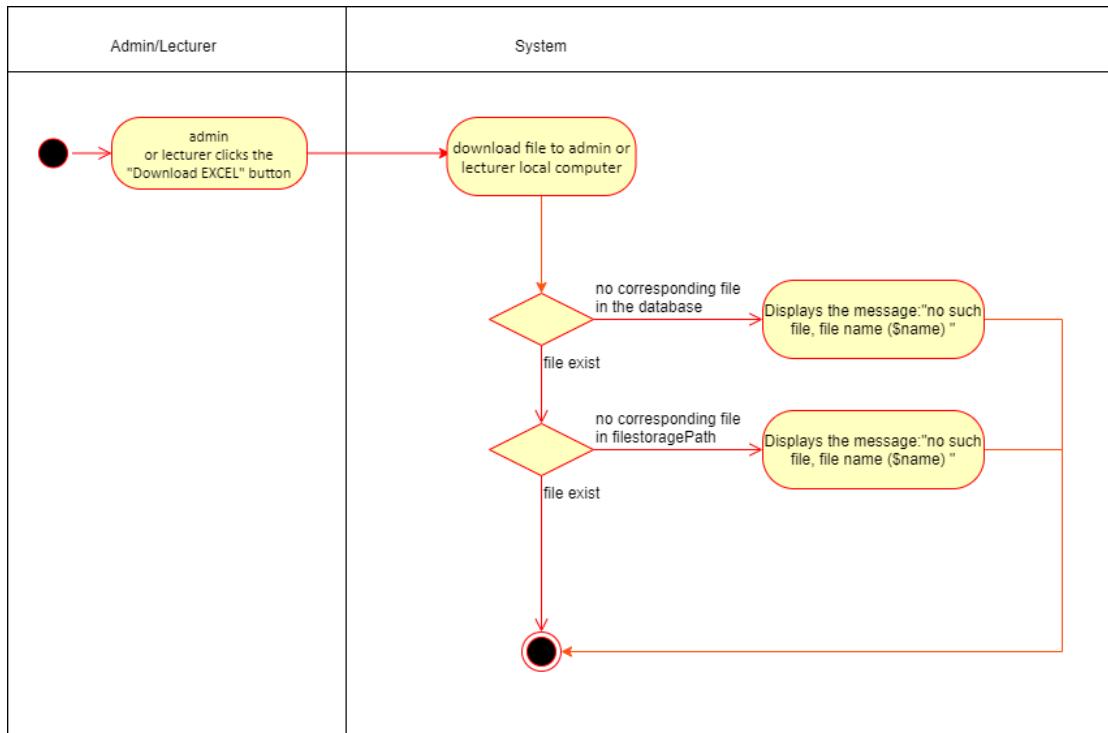
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3.2 Activity diagram for Feature #2: Table and cell detection and text extraction and parsing system  
AD-04: Parse CAMT timetable PDF

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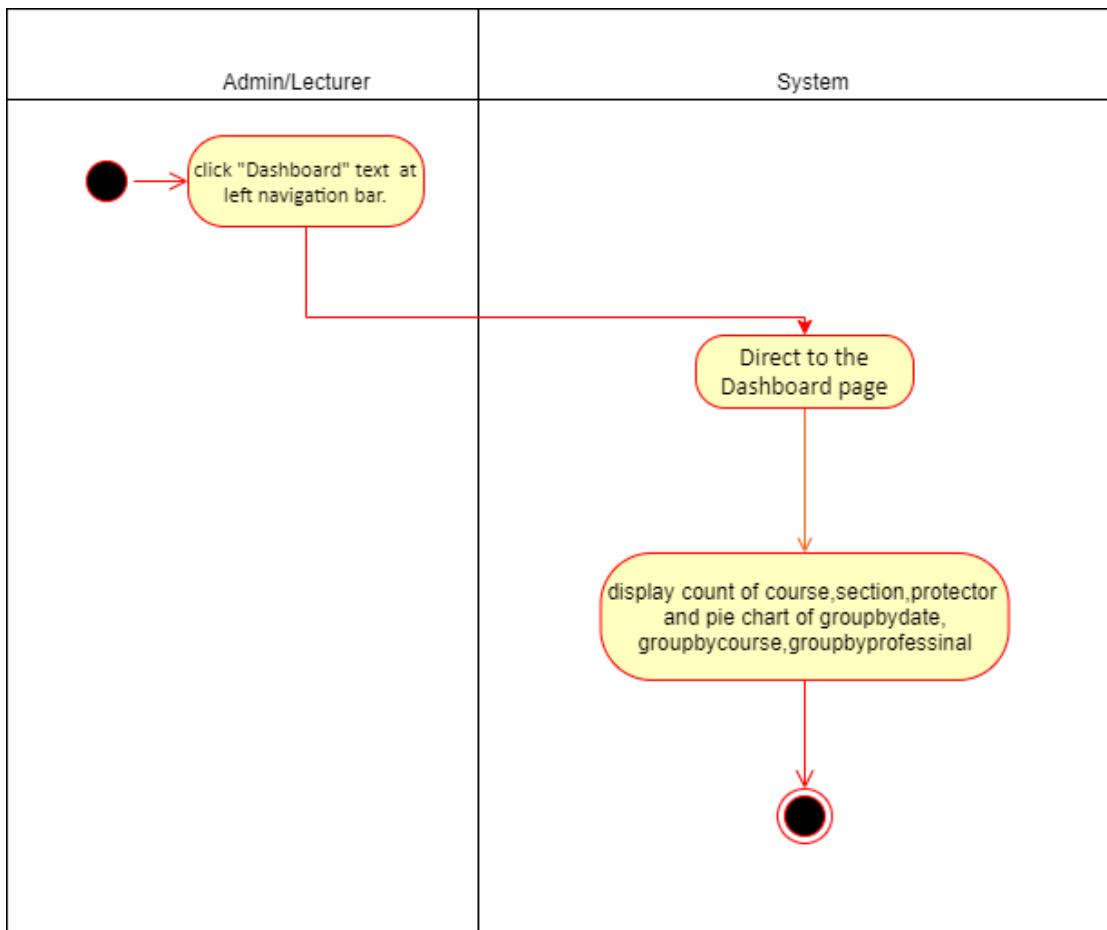


## AD-05: Download Excel file



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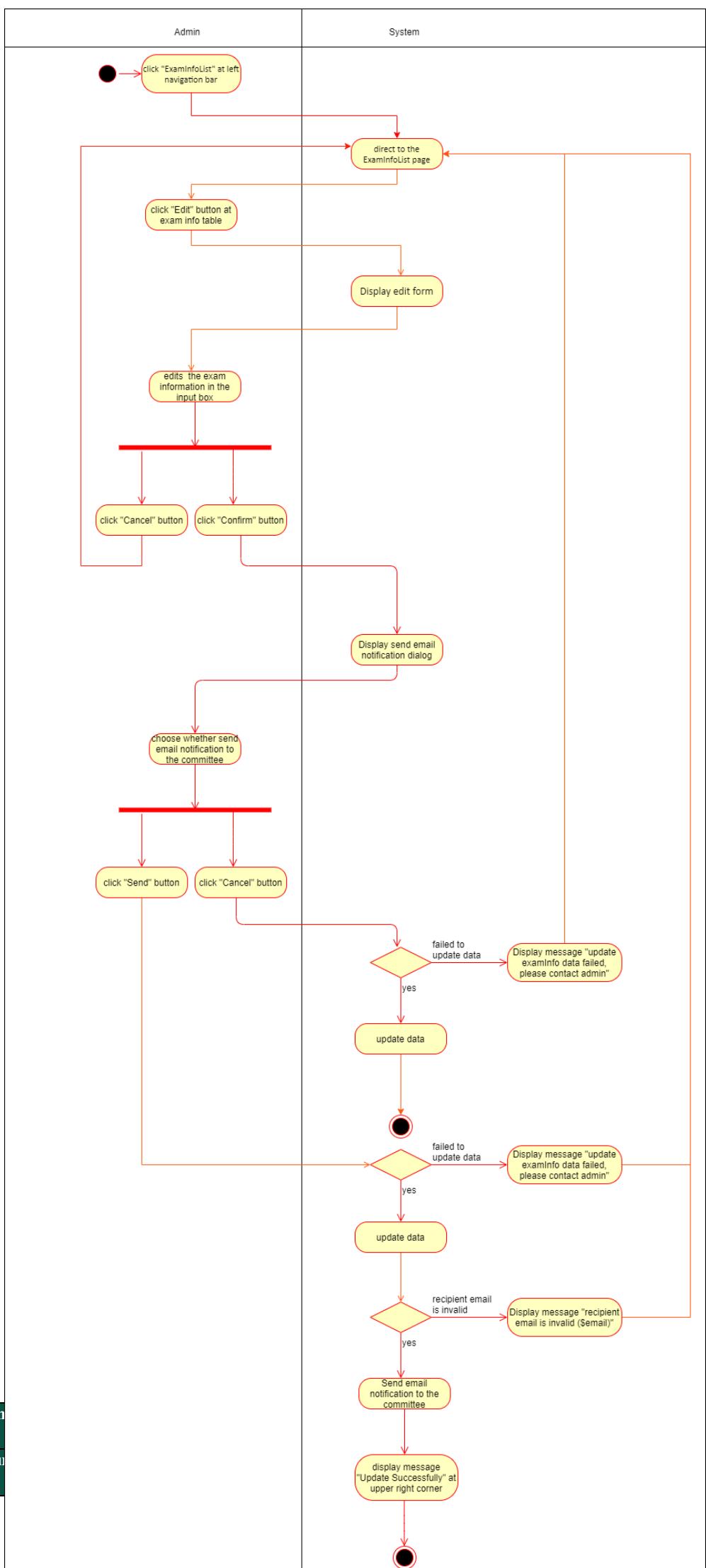
### 3.3 Activity diagram for Feature #3: Dashboard System AD-06: View Dashboard



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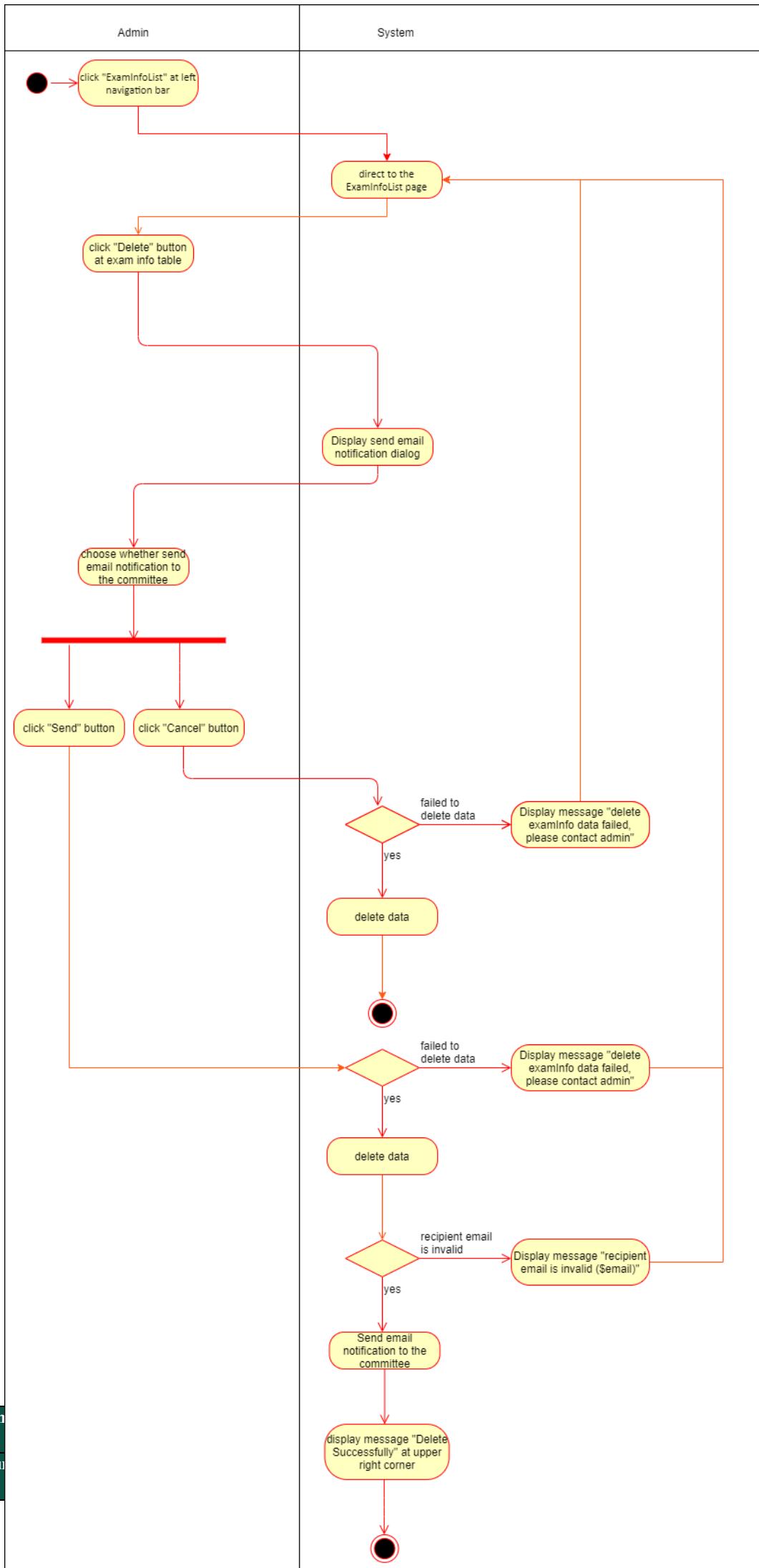
### 3.4 Activity diagram for Feature #4:Notification system AD-07: Edit exam information

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## AD-08: Delete exam information

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# **CHAPTER 5**

## **SOFTWARE DESIGN DOCUMENT**



# CAMT Exam Dashboard with Tesseract

## Software Design Document

By

Lingyu Kong 612115506

Jiajun Tao 612115503

BACHELOR OF SOFTWARE ENGINEERING PROGRAM

COLLEGE OF ARTS, MEDIA AND

TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

Pree Thiengburanathum, PhD

# CAMT Exam Dashboard with Tesseract

Lingyu Kong 612115506

Jiajun Tao 612115503

THIS REPORT HAS BEEN APPROVED TO BE A PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE  
SOFTWARE ENGINEERING PROGRAM: COLLEGE OF  
ARTS MEDIA AND TECHNOLOGY

..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

## Document History

Version	History	Status	Date	Viewable	Editable	Responsible
SDD_Version.1 .docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	1 June , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.2 .docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 3</li> </ul>	Draft	4 June , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.3 .docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 4</li> </ul>	Draft	7 June , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.4 .docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Sequence Diagram</li> <li>• Class Diagram Description</li> </ul>	Draft	27 June , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.5 .docx	<b>Update</b> <ul style="list-style-type: none"> <li>• UI Design</li> <li>• Correct Spelling</li> <li>• Correct Grammar mistakes</li> </ul>	Draft	28 June , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.6 .docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Database Design</li> <li>• ER Diagram</li> </ul>	Draft	1 July , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.7 .docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Sequence Diagram</li> <li>• Class Diagram</li> <li>• Class Diagram Description</li> </ul>	Draft	30 July , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.8 .docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Adjustment document format</li> </ul>	Release	10 Aug , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.9 .docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter 2</li> <li>• Database design</li> </ul>	Release	10 Sep , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.10.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	1 Sep , 2021	Advisor LK JT	LK JT	LK JT

SDD_Version.1 1.docx	<b>Add</b> <ul style="list-style-type: none"><li>• Class diagram</li><li>• Database design</li></ul>	Draft	4 Sep , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.1 2.docx	<b>Add</b> <ul style="list-style-type: none"><li>• Sequence diagram</li><li>Chapter 4</li></ul>	Draft	10 Sep , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.1 3.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Sequence diagram</li><li>• Class diagram</li><li>UI design</li></ul>	Draft	15 Sep , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.1 4.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Adjustment document format</li></ul>	Release	16 Sep , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.1 5.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Chapter 3</li><li>• Edit exam info Sequence diagram</li></ul>	Release	26 Sep , 2021	Advisor LK JT	LK JT	LK JT
SDD_Version.1 6.docx	<b>Update</b> <ul style="list-style-type: none"><li>• 3.1.1 Feature 1: Authentication System</li><li>• 3.1.2 Feature 2: Table and cell detection and text extraction and parsing System</li><li>• 3.1.3 Feature 3: Dashboard System</li><li>• 3.1.4 Feature 4: Notification System</li><li>• Chapter 4</li><li>• 3.3 sequence diagram</li></ul>	Release	26 Sep , 2021	Advisor LK JT	LK JT	LK JT

\***LK = Lingyu Kong**

\***JT = Jiajun Tao**

\* **Advisor = Pree Thiengburanathum,PhD**

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# Chapter One | Introduction

## 1.2 Purpose

The purpose of the Software Design Document is to provide a description of the design of a system fully enough to allow for software development to proceed with an understanding of what is to be built and how it is expected to build. The Software Design Document provides information necessary to provide a description of the details for the software and system to be built.

## 1.2 Project Overview

The CAMT Exam Dashboard with Tesseract is a web-based application designed to help lecturers to obtain effectively access to exam information and assist staffs manage exam data. Staffs in CAMT do not need to spend too much time in CAMT statistics and edit each exam information when each exam week is over, because the CAMT Exam Dashboard with Tesseract system will provide staff with an interface to convert the CAMT exam timetable PDF documents into EXCEL spreadsheets. The data structure can be used to generates a rich visual dashboard, which can include the total number of exams, the total number of different majors' exams, the number of daily exams and their time, or different semesters of different academic years represented by the Gantt chart, line chart, and fan chart. The system also allows the staff to edit the exam information online, and the system will provide an exam information form at that time. After the edition is completed, staff can choose to send an exam notification to the exam protector, including the exam subject, date, time and location. Sometimes When exam protectors exchange schedules, staff can also record these events online by edit exam information. Lecturers no longer need to spend time checking exam time in CAMT, and they can also preview the dashboard and use the conversion service.

### 1.2.1 Project Scope

The CAMT exam dashboard with Tesseract has four features, which are including these scopes:

- Feature#1: Authentication System

Admin or lecturer can use particular accounts to log in to the system.

- Feature#2: Table and cell detection and text extraction and parsing system

The system detects and parses the manual input PDF to generates EXCEL and data frame.

- Feature#3: Dashboard System

The system generates a dashboard based on the data frame that generated by the detection and

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analysis.

- Feature#4: Notification System

The administrator can modify the information in the database and send exam notifications for the protector.

## 1.2.2 Document Scope

This document includes System architecture, Class diagram, Class diagram description, User Interface design, Function Group, Method description, and Sequence diagram.

## 1.5 Acronyms and Definition

### 1.5.1 Acronyms

SD	Sequence Diagram
CD	Class Diagram
UI	User Interface
CDD	Class Diagram Description
MD	Method Description

### 1.5.2 Definition

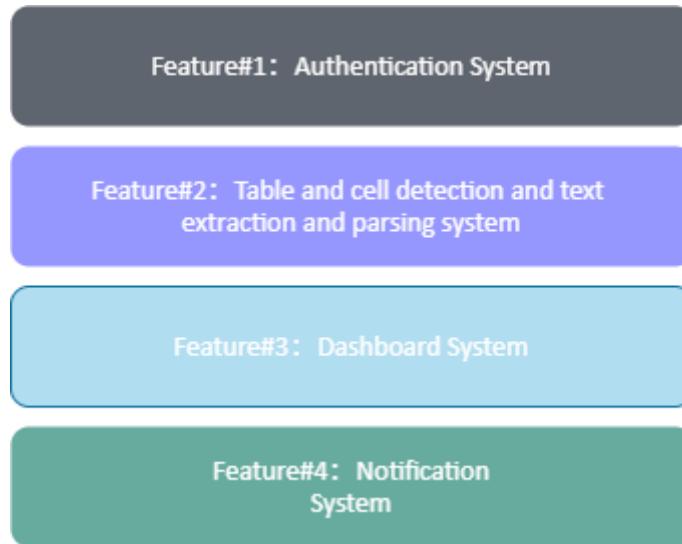
Name	Definition
IEEE	Institute for Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and computer scientists. [IEEE90]
Interface	1) A shared boundary across which information is passed. 2) A hardware or software component that connects two or more other components for the purpose of passing

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	<p>information from one to the other.</p> <p>3) To connect two or more components for the purpose of passing information from one to the other.</p> <p>4) To serve as a connecting or connected component as in (2). [IEEE90]</p>
Data	<p>1) A representation of facts, concepts, or instructions in a manner suitable for communication, interpretation, or processing by humans or by automatic means.</p> <p>2) Something used as a synonym for documentation. [IEEE90]</p>
Architecture	The organizational structure of a system or component. [IEEE90]

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## Chapter Two | System Architecture



The architecture of CAMT Exam Dashboard with Tesseract shown in figure 1. It consists of five systems.

- The authentication system provides users login feature. The lecturer can log in with the CMU IT account, and the administrator can log in with the administrator account.
- The table and cell detection and text extraction and parsing system is the system for users to parse the CAMT exam timetable.
- The dashboard system is a system for users to view the exam summary.
- The notification system is a system for administrators to modify exam data and send exam notifications to protectors.

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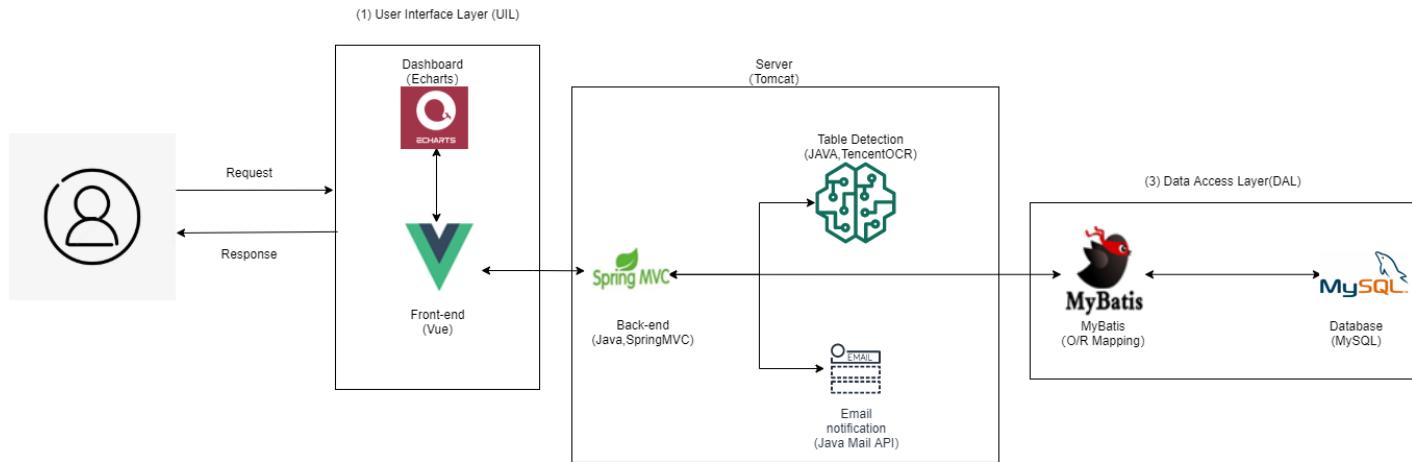


Figure 2 System Architecture

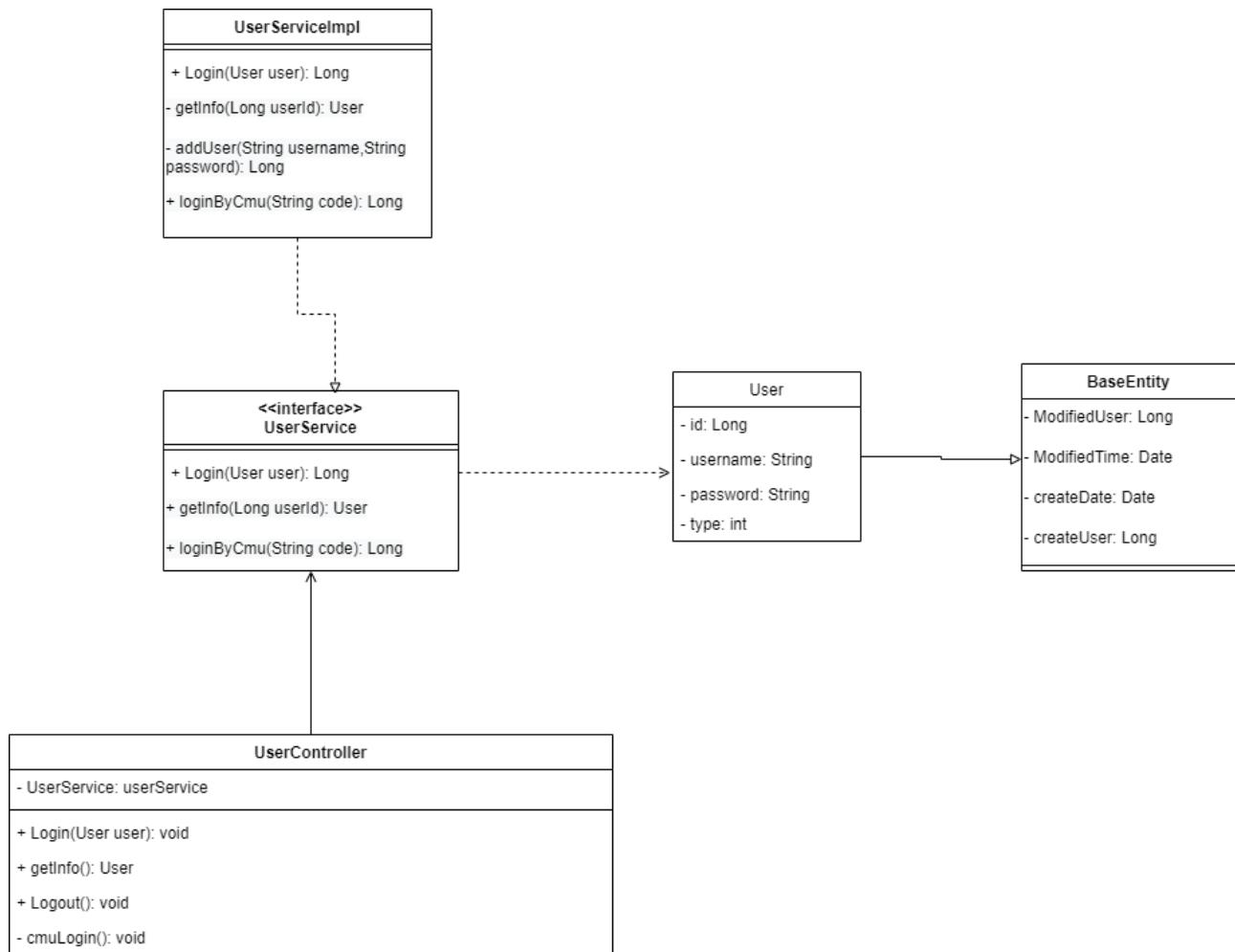
In figure 2, users send requests or get responses from the system. Frontend shows the user interface to users and receives requests from users and does responses by using Vue.js. The server connects the frontend and backend by using the Tomcat. Backend stores the data of the system by using the MySQL database.

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# Chapter Three | Detailed Design

## 3.1 Class Diagram

### 3.1.1 Feature 1: Authentication System



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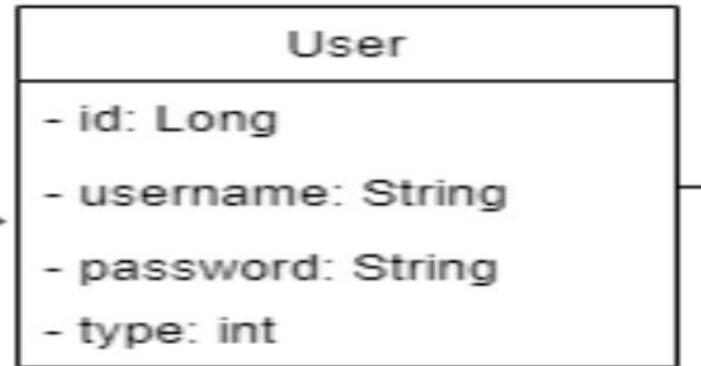
## CDD-1: BaseEntity

BaseEntity
- createUser: Long
- createDate: Date
- ModifiedUser: Long
- ModifiedTime: Date

BaseEntity				
Attributes				
ID	Name	Description	Type	
1	createUser	Data create user	Long	
2	createDate	Data create time	Date	
3	ModifiedUser	Data modify user	Long	
4	ModifiedTime	Data modify time	Date	
Methods				
ID	Name	Parameters	Description	Return
-	-	-	-	-

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## CDD-2: User



User				
Attributes				
ID	Name	Description	Type	
1	id	the user ID is in the database, starting with recount 1.	Long	
2	username	Username (string of length between 4 and 32)	String	
3	password	User password (string of length at least 6 and includes a digit number)	String	
4	type	User type(0:admin, 1: user)	Int	
Methods				
ID	Name	Parameters	Description	Return
-	-	-	-	-

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### CDD-3: UserController

UserController	
- UserService: userService	
+ Login(User user): void	
+ getInfo(): User	
+ Logout(): void	
- cmuLogin(): void	

UserController				
Attributes				
ID	Name	Description		Type
1	UserService	Call the Userservice layer		UserService
Methods				
ID	Name	Parameters	Description	Return
MD1	Login(User user): void	User object	This function used to receive user login requests and validate login information.	Return login response in JSON format.
MD2	getInfo(): User	-	This function gets user information from database.	Return the user info in JSON format.
MD3	Logout(): void	user	This function used to receive user logout requests from frontend, and remove token.	Return the user token has been remove.
MD4	cmuLogin():void	-	This function used to receive cmu login requests and get user basic	Return login response in JSON format.

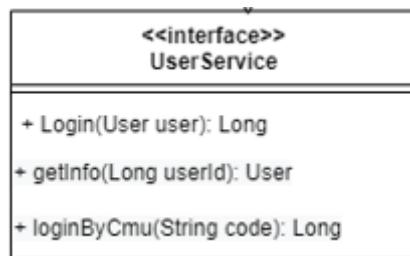
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			information from ITSC.	
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#### CDD-4: <<interface>>

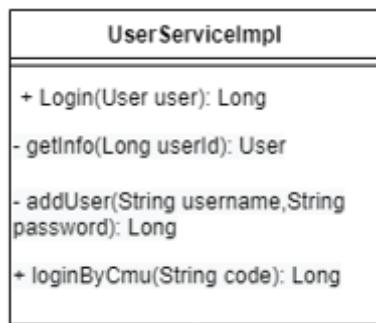
##### UserService



<<interface>> UserService				
Attributes				
ID	Name	Description		Type
-	-	-		-
Methods				
ID	Name	Parameters	Description	Return
MD5	Login(User user):Long	User object	Interface, used to call the Login() method in UserserviceImpl.	-
MD6	getInfo(Long userId): User	User id	Interface, used to call the getInfo(Long userId) method in UserserviceImpl.	-
MD7	loginByCmu(String code):Long	Authorization code	Interface, used to call the LoginByCmu() method in UserserviceImpl.	

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### CDD-5: UserServicelmpl



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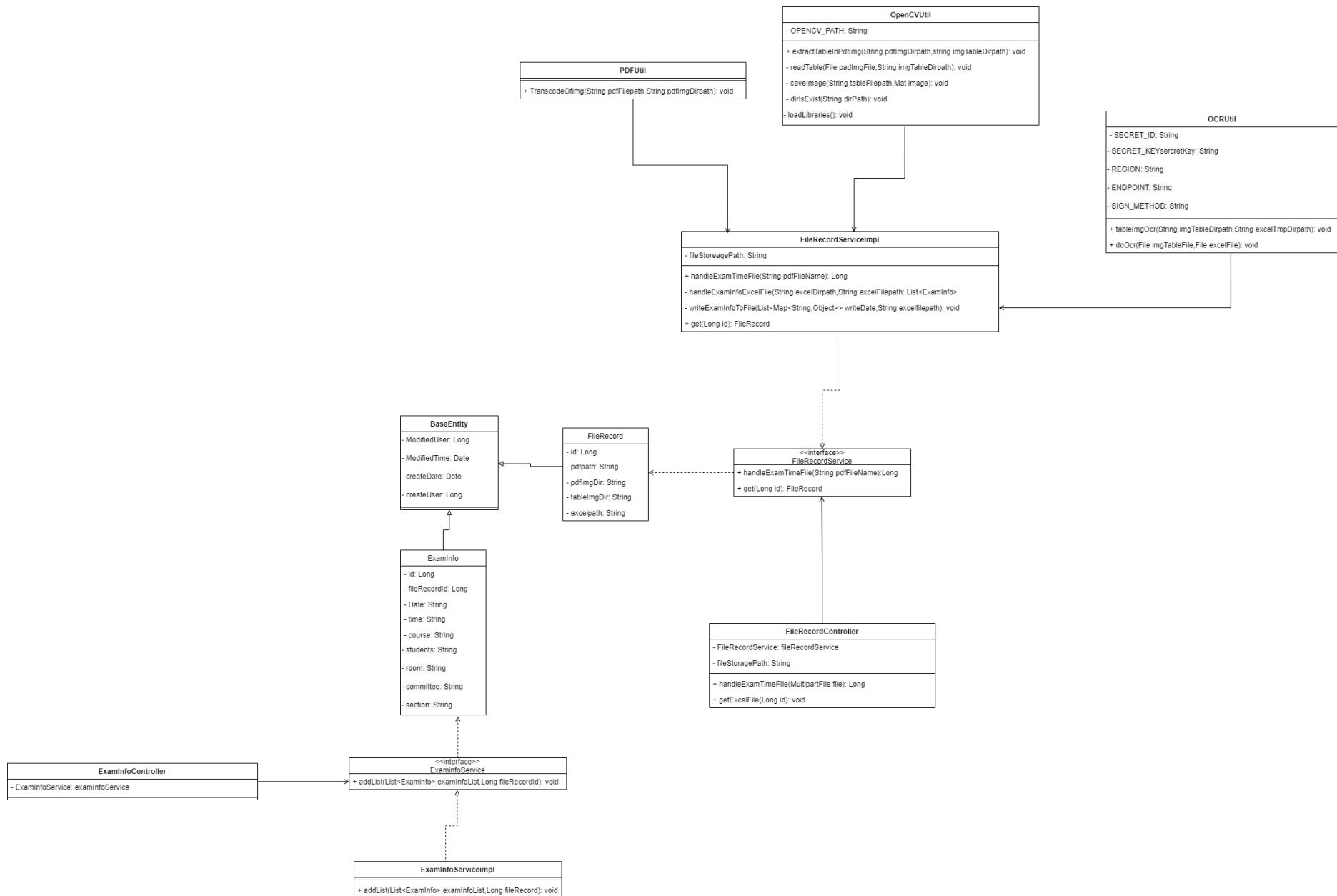
UserServicelmpl				
Attributes				
ID	Name	Description	Type	
-	-	-	-	
Methods				
ID	Name	Parameters	Description	Return
MD 8	Login(User user):Long	User object	This function validate the username and password from the database.	1. Return User Id 2. Return an error message "username or password not match" If the admin input the error username or password
MD 9	getInfo(Long userId): User	User id	This function gets user information by user ID.	1. Return User information. 2. Return an error message " user not found, id: xxx" If cannot find user form database
MD 10	addUser(String username, String password):Long	Username, password	This function use to add new user data in the database.	1. Return User Id 2. Return an error message " add new user data failed, please contact admin" If insert data in database failed.
MD 11	LoginByCmu(String code):Long	Authorization code	This function use to get access code by using Authorization code, request user basic information by	1. Return User Id 2. Return an error message " login failed, please contact admin" If

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			<p>using access code and add user data in the database.</p>	<p>response is null.</p> <p>3. Return an error message " login failed, please contact admin" If access token is empty.</p> <p>4. Return an error message " login failed, please contact admin" If user information is null.</p>
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### 3.1.2 Feature 2: Table and cell detection and text extraction and parsing system.



## CDD-1: BaseEntity

BaseEntity
- createUser: Long
- createDate: Date
- ModifiedUser: Long
- ModifiedTime: Date

BaseEntity				
Attributes				
ID	Name	Description	Type	
1	createUser	Data create user	Long	
2	createDate	Data create time	Date	
3	ModifiedUser	Data modify user	Long	
4	ModifiedTime	Data modify time	Date	
Methods				
ID	Name	Parameters	Description	Return
-	-	-	-	-

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**CDD-6: ExamInfo**

ExamInfo	
- id:	Long
- fileRecordId:	Long
- Date:	String
- time:	String
- course:	String
- students:	String
- room:	String
- committee:	String
- section:	String

ExamInfo			
Attributes			
ID	Name	Description	Type
1	Id	The exam information ID is in the database, starting with recount 1.	Long
2	fileRecordId	The corresponding file record id	Long
3	date	a brief text of date	String
4	time	a brief text of time	String

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5	course	a brief text of course	String
6	students	a brief text of students	String
7	room	a brief text of room	String
8	committee	a brief text of committee	String
9	section	a brief text of section	String

#### Methods

ID	Name	Parameters	Description	Return
-	-			-

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### CDD-7: ExamInfoController



ExamInfoController				
Attributes				
ID	Name	Description	Type	
1	examInfoService	Call the ExamInfoService layer	ExamInfoService	
Methods				
ID	Name	Parameters	Description	Return
-	-			-

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**CDD-8: <<interface>>**

**ExaminfoService**

<<interface>> ExaminfoService	
+ addList(List<Examinfo> examInfoList, Long fileRecordId): void	

<<interface>> ExaminfoService				
Attributes				
ID	Name	Description	Type	
-	-	-	-	
Methods				
ID	Name	Parameters	Description	Return
MD12	addList(List<Examinfo> examInfoList, Long fileRecordId)	examInfoList, fileRecordId	FileRecord	-

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### CDD-9: ExamInfoServiceImpl

ExamInfoServiceImpl
+ addList(List<ExamInfo> examInfoList, Long fileRecord): void

ExamInfoServiceImpl				
Attributes				
ID	Name	Description	Type	
-	-	-	-	
Methods				
ID	Name	Parameters	Description	Return
MD 13	addList(List<ExamInfo> examInfoList, Long fileRecord): void	examInfoList	This function get exam information from the database and add to the list.	1. Return an error message "insert exam Info data failed , please contact admin " If insert exam Info data failed

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## CDD-10: FileRecord

FileRecord
- id: Long
- pdfpath: String
- pdfImgDir: String
- tableImgDir: String
- excelpath: String

FileRecord			
Attributes			
ID	Name	Description	Type
1	Id	the file record ID is in the database, starting with recount 1.	Long
2	pdfpath	a string of store the pdf file path	String
3	pdfImgDir	a string of store the image path	String
4	tableImgDir	a string of store the table image path	String
5	excelpath	a string of store the excel path	String
Methods			
ID	Name	Parameters	Description
-	-	-	-

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### CDD-11: FileRecordController

FileRecordController
- FileRecordService: fileRecordService
- fileStoragePath: String
+ handleExamTimeFfile(MultipartFile file): Long
+ getExcelFile(Long id): void

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FileRecordController			
Attributes			
ID	Name	Description	Type
1	fileRecordService:	Call the FileRecordService layer	FileRecordService
2	fileStoragePath	Download excel file path	String
Methods			
ID	Name	Parameters	Description
MD 14	handleExamTi meFIle(Multip artFIle file): Long	file	<p>This function used to receive user parse file requests and verify that the user uploads the file format and then parse the file.</p>
			<ol style="list-style-type: none"> <li>1. Return response in JSON format.</li> <li>2.Return file record id.</li> <li>3. Return an error message:" file is empty" if user upload empty pdf file.</li> <li>4. Return an error message" file size can't not exceed" If uploaded file size over max size</li> <li>5. Return an error message" file type does not meet the requirements, only is pdf" If uploaded file is not a pdf</li> <li>6. Return an error message" original file may have been deleted, and the original file cannot be</li> </ol>

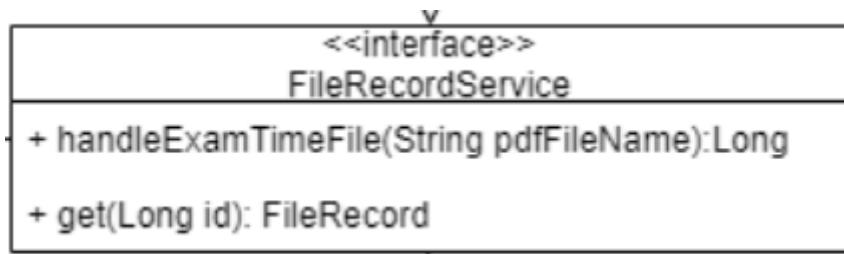
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				accessed " If original file is missing.  7. Return an error message" read and write error occurred while processing the file!" If read or write file fails
MD 15	getExcelFile(L ong id): void	File record id	This function used to receive user download excel file requests and gets a parsed excel file.	1. Return excel file .  2. Return an error message" file download failed , please contact admin " If file download fails.  3. Return an error message" no such file, file name + \$filename" If can not find the file.

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**CDD-12: <<interface>>**

**FileRecordService**



<b>&lt;&lt;interface&gt;&gt;</b>				
<b>FileRecordService</b>				
Attributes				
ID	Name	Description	Type	
-	-	-	-	
Methods				
ID	Name	Parameters	Description	Return
MD 16	handleExamTi meFile(String pdfFileName): Long	pdfFile	Interface, used to call the handleExamTimeFIle() method in FileRecordserviceImpl.	-
MD 17	get(Long id): FileRecord	File record id	Interface, used to call the get() method in FileRecordserviceImpl.	-

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### CDD-13: FileRecordServiceImpl

FileRecordServiceImpl	
- fileStoragePath: String	
+ handleExamTimeFile(String pdfFileName): Long	
+ handleExamInfoExcelFile(String excelDirpath, String excelFilepath: List<ExamInfo>)	
+ writeExamInfoToFile(List<Map<String, Object>> writeDate, String excelfilepath): void	
+ get(Long id): FileRecord	

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## FileRecordServiceImpl

### Attributes

ID	Name	Description	Type
1	fileStoreagePath	Download excel file path	String

### Methods

ID	Name	Parameters	Description	Return
MD 18	handleExamTimeFile(String pdfFileName): Long	pdfFileName	This function parsing uploaded pdf files into Excel file	1. Return file record id 2. Return an error message " update file record data failed , please contact admin" If update file record data failed. 3. Return an error message " insert fileRecord data failed, please contact admin" If create new file record failed.
MD 19	handleExamInfoExcelFile(String excelDirPath,String excelFilePath):List<ExamInfo>	ExcelDirpath ,excelFilePath	This function merges the parsed Excel and save it to the path	1.Return examInfoList
MD 20	writeExamInfoToFile(List<Map<String, Object>> writeData, String	WriteData, excelfilepath	This function will create the Excel file and write the examinfo data into the excel file.	-

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	excelfilepath): void			
MD 21	get(Long id): FileRecord	-	This function gets a file record data from the database.	1. Return file record data.

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## CDD-14: OpenCVUtil

OpenCVUtil
- OPENCV_PATH: String
+ extractTableInPdflmg(String pdflmgDirpath, string imgTableDirpath): void
+ readTable(File pdflmgFile, String imgTableDirpath): void
+ sacelImage(String tableFilepath, Mat image): void
+ dirsExist(String dirPath): void
+ loadLibraries(): void

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## OpenCVUtil

### Attributes

ID	Name	Description	Type
1	OPENCV_PATH	OPENCV library path	String

### Methods

ID	Name	Parameters	Description	Return
MD 22	extractTableInPdfImg(String pdfImgDirPath, String imgTableDirpath, String imgTableDirpath): void	pdfImgDirPath, imgTableDirpath	This function check if there are files under the path that can be extracted a table from a PDF image	1. Return an error message "no such file to extract table, please contact admin" If cannot find any files under the path
MD 23	readTable(File pdfImgFile, String imgTableDirPath, String imgTableDirPath): void	pdfImgFile, imgTableDirPath	This function extract table from PDF image	-
MD 24	saveImage(String tableFilePath, Mat table): void	tableFilePath, table	This function checks whether the directory exists and if exist saves the table image file	-
MD 25	dirIsExist(String dirPath): void	dirPath	This function checks whether the directory exists	-
MD 26	loadLibraries(): void	-	This function for load libraries	1. Return an error message "Failed to load OpenCV native library, please contact

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				admin" If load libraries fails
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## CDD-15: PDFUtil

PDFUtil
+ TranscodeOfImg(String pdfFilepath, String pdflImgDirpath): void

PDFUtil				
Attributes				
ID	Name	Description	Type	
-	-	-	-	
Methods				
ID	Name	Parameters	Description	Return
MD 27	TranscodeOfImg(String pdfFilePath, String pdflImgDirPath): void	pdfFilePath, pdflImgDirPath	This function transcodes the PDF file into image	1. Return an error message "pdf transcode image fail, please contact admin" If pdf transcode image fail

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## CDD-16: OCRUtil

OCRUtil	
- SECRET_ID: String	
- SECRET_KEYsecretKey: String	
- REGION: String	
- ENDPOINT: String	
- SIGN_METHOD: String	
+ tableImgOcr(String imgTableDirpath, String excelTmpDirpath): void	
+ doOcr(File imgTableFile, File excelFile): void	

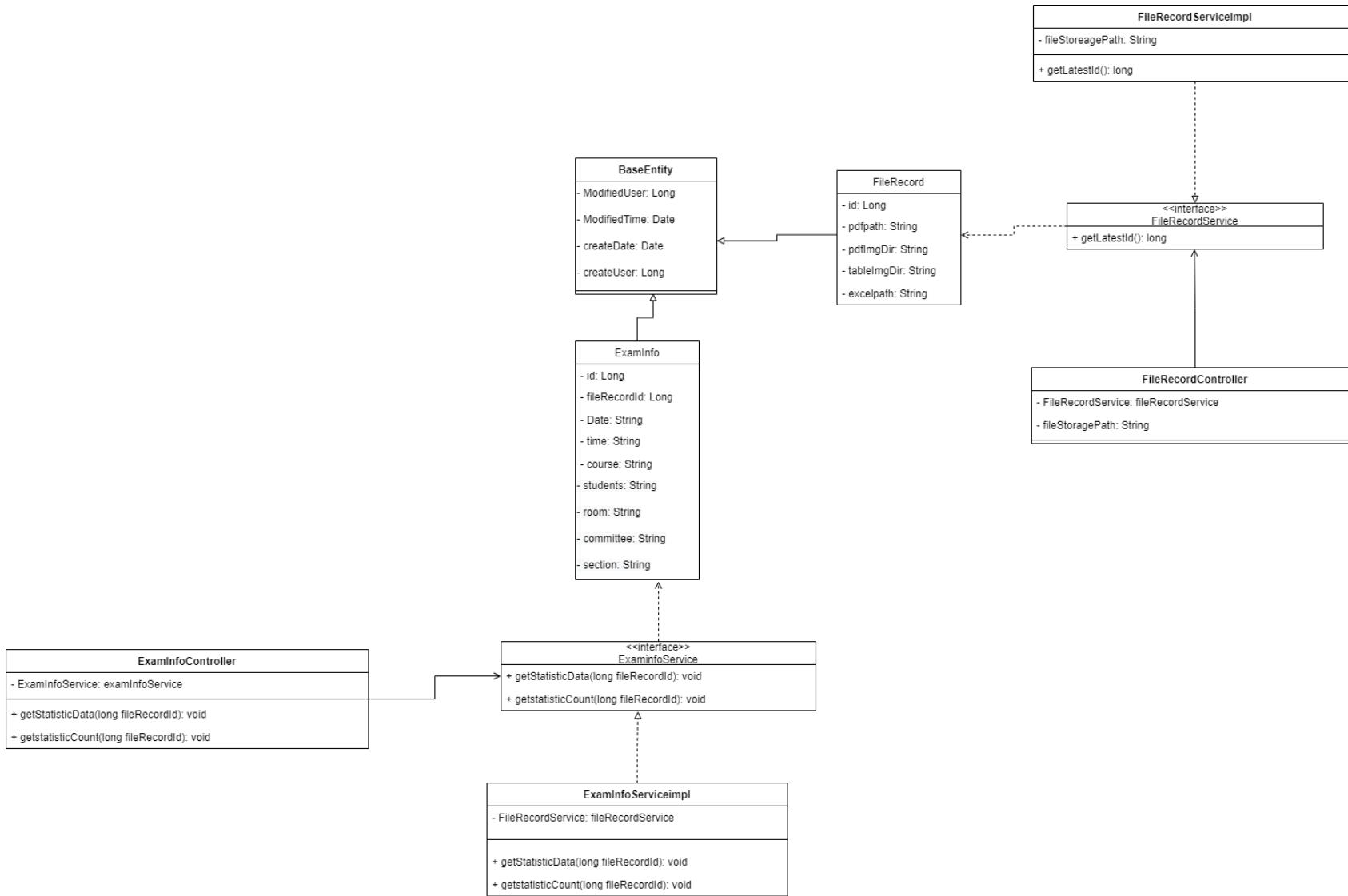
OCRUtil			
Attributes			
ID	Name	Description	Type
1	SECRET_ID	Id for access TencentOCR api	String
2	SECRET_KEYsecretKey	Keysecretkey for access TencentOCR api	String
3	REGION	Region for access TencentOCR api	String
4	ENDPOINT	Endpoint for using TencentOCR api	String
5	SIGN_METHOD	Which service of Tencent OCR to use	String
Methods			

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ID	Name	Parameters	Description	Return
MD 28	tableImgOcr(String imgTableDirpath,String excelTmpDirpath): void	imgTableDirpath, excelTmpDirpath	This function verifies that there is a file in the directory that can be parsed, and then import the parsed table file into Excel.	1. Return an error message "no such file to extract table, please contact admin" If no file to extract
MD 29	doOcr(File imgTableFile,File excelFile): void	imgTableFile, excelFile	This function call Tencent OCR API to parse the file.	1. Return an error message "table image ocr fail, please contact admin" If call API fails

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### 3.1.3 Feature 3: Dashboard System



## CDD-1: BaseEntity

BaseEntity
- createUser: Long
- createDate: Date
- ModifiedUser: Long
- ModifiedTime: Date

BaseEntity			
Attributes			
ID	Name	Description	Type
1	createUser	Data create user	Long
2	createDate	Data create time	Date
3	ModifiedUser	Data modify user	Long
4	ModifiedTime	Data modify time	Date
Methods			
ID	Name	Parameters	Description
-	-	-	-

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**CDD-6: ExamInfo**

ExamInfo	
- id:	Long
- fileRecordId:	Long
- Date:	String
- time:	String
- course:	String
- students:	String
- room:	String
- committee:	String
- section:	String

ExamInfo			
Attributes			
ID	Name	Description	Type
1	Id	The exam information ID is in the database, starting with recount 1.	Long
2	fileRecordId	The corresponding file record id	Long
3	date	a brief text of date	String
4	time	a brief text of time	String
5	course	a brief text of course	String
6	students	a brief text of students	String

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7	room	a brief text of room	String	
8	committee	a brief text of committee	String	
9	section	a brief text of section	String	
Methods				
ID	Name	Parameters	Description	Return
-	-			-

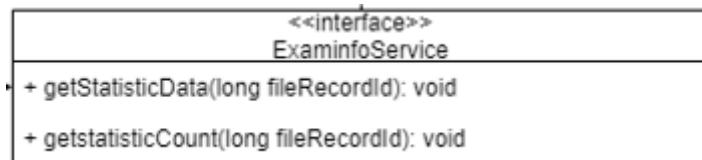
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### CDD-17: ExamInfoController

ExamInfoController
- ExamInfoService: examInfoService
+ getStatisticData(long fileRecordId): void
+ getStatisticCount(long fileRecordId): void

ExamInfoController				
Attributes				
ID	Name	Description	Type	
1	examInfoService	Call the ExamInfoService layer	ExamInfoService	
Methods				
ID	Name	Parameters	Description	Return
MD 30	getStatistic Data()	fileRecordId	This function use to get exam information: groupbydate, groupbycourse, groupbyprofessional from database.	Return exam data groupbydate, groupbycourse, groupbyprofessional in JSON format.
MD 31	getStatistic Count()	fileRecordId	This function use to get exam information: countbycourse, countbyteacher, countbysection from database.	Return exam data countbycourse, countbyteacher, countbysection in JSON format.

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**CDD-18: <<interface>>****ExaminfoService**

<<interface>> ExaminfoService				
Attributes				
ID	Name	Description		Type
-	-	-		-
Methods				
ID	Name	Parameters	Description	Return
MD 32	getStatisticData()	fileRecordId	Interface, used to call the getStatisticData() method in ExamInfoServiceImpl.	-
MD 33	getStatisticCount()	fileRecordId	Interface, used to call the getStatisticCount() method in ExamInfoServiceImpl.	-

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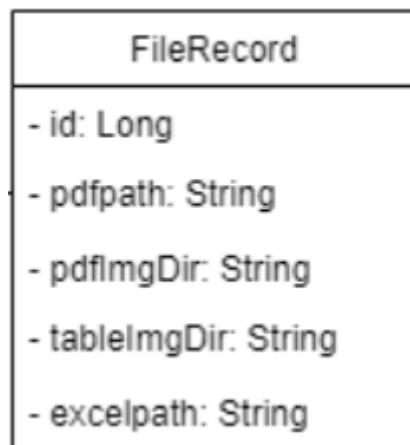
### CDD-19: ExamInfoServiceImpl

ExamInfoServiceImpl	
- FileRecordService: fileRecordService	
+ getStatisticData(long fileRecordId): void	
+ getStatisticCount(long fileRecordId): void	

ExamInfoServiceImpl				
Attributes				
ID	Name	Description		Type
1	fileRecordService	fileRecordService		FileRecordService
Methods				
ID	Name	Parameters	Description	Return
MD 34	getStatisticData()	fileRecordId	This function use to get exam information: groupbydate, groupbycourse, groupbyprofessional from database.	Return select data groupByDate, groupByCourse, groupByProfession from database.
MD 35	getStatisticCount()	fileRecordId	This function use to get exam information: countbycourse, countbyteacher, countbysection from database.	Return select data countbycourse, countbyteacher, countbysection from database.

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### CDD-10: FileRecord



FileRecord				
Attributes				
ID	Name	Description	Type	
1	Id	the file record ID is in the database, starting with recount 1.	Long	
2	pdfpath	a string of store the pdf file path	String	
3	pdfImgDir	a string of store the image path	String	
4	tableImgDir	a string of store the table image path	String	
5	excelpath	a string of store the excel path	String	
Methods				
ID	Name	Parameters	Description	Return
-	-	-	-	-

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**CDD-20: <<interface>>****FileRecordService**

<<interface>> <b>FileRecordService</b>			
Attributes			
ID	Name	Description	Type
-	-	-	-
Methods			
ID	Name	Parameters	Description
MD 36	getLastestId()		Interface, used to call the getLastestId() method in FileRecordserviceImpl.
			Return -

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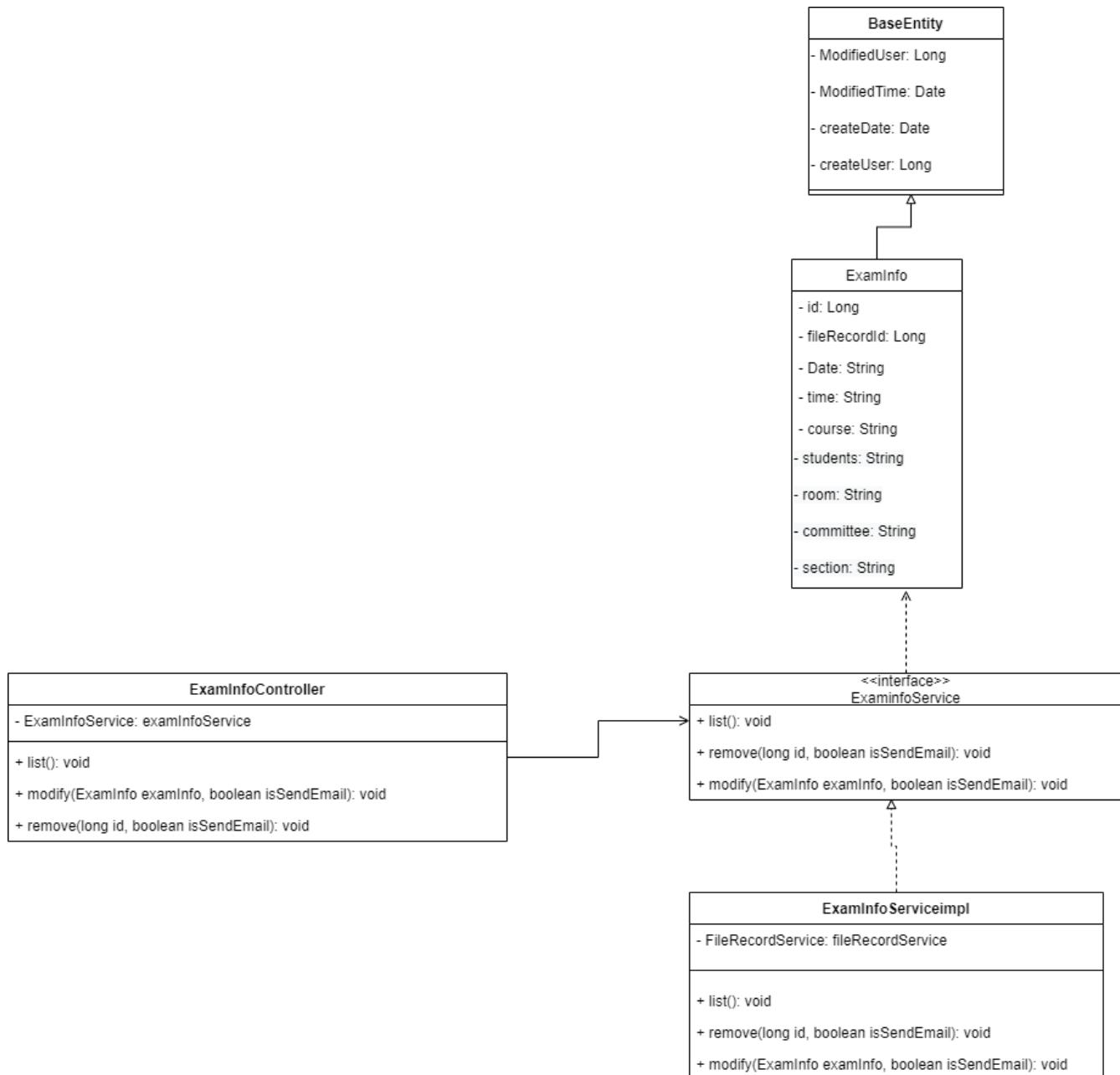
### CDD-21: FileRecordServiceImpl

FileRecordServiceImpl
- fileStoragePath: String
+ getLatestId(): long

FileRecordServiceImpl			
Attributes			
ID	Name	Description	Type
1	fileStoragePath	Download excel file path	String
Methods			
ID	Name	Parameters	Description
MD 37	getLastestId()	-	This function get lastest fileRecord Id from the database.  1. Return FileRecord id. 2. Return “no fileRecord” if no fileRecord in the database.

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### 3.1.4 Notification System



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## CDD-1: BaseEntity

BaseEntity
- createUser: Long
- createDate: Date
- ModifiedUser: Long
- ModifiedTime: Date

BaseEntity			
Attributes			
ID	Name	Description	Type
1	createUser	Data create user	Long
2	createDate	Data create time	Date
3	ModifiedUser	Data modify user	Long
4	ModifiedTime	Data modify time	Date
Methods			
ID	Name	Parameters	Description
-	-	-	-

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**CDD-6: ExamInfo**

ExamInfo	
- id:	Long
- fileRecordId:	Long
- Date:	String
- time:	String
- course:	String
- students:	String
- room:	String
- committee:	String
- section:	String

ExamInfo			
Attributes			
ID	Name	Description	Type
1	Id	The exam information ID is in the database, starting with recount 1.	Long
2	fileRecordId	The corresponding file record id	Long
3	date	a brief text of date	String
4	time	a brief text of time	String
5	course	a brief text of course	String
6	students	a brief text of students	String

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7	room	a brief text of room	String	
8	committee	a brief text of committee	String	
9	section	a brief text of section	String	
Methods				
ID	Name	Parameters	Description	Return
-	-			-

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## CDD-22: ExamInfoController

ExamInfoController	
- ExamInfoService: examInfoService	
+ list(): void	
+ modify(ExamInfo examInfo, boolean isSendEmail): void	
+ remove(long id, boolean isSendEmail): void	

ExamInfoController				
Attributes				
ID	Name	Description	Type	
1	examInfoService	Call the ExamInfoService layer	ExamInfoService	
Methods				
ID	Name	Parameters	Description	Return
MD 38	list()	-	This function get exam information from the database and show the list in the page.	Return list response in JSON format.
MD 39	modify()	examInfo, isSendEmail	This function use to edit exam information to the database.	Return edit response in JSON format and send email notification.
MD 40	remove()	Id, isSendEmail	This function use to delete exam information to the database.	Return delete response in JSON format and send email notification.

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**CDD-23: <<interface>>**

**ExaminfoService**

<<interface>> ExaminfoService	
+ list(): void	
+ remove(long id, boolean isSendEmail): void	
+ modify(ExamInfo examInfo, boolean isSendEmail): void	

<<interface>> ExaminfoService				
Attributes				
ID	Name	Description	Type	
-	-	-	-	
Methods				
ID	Name	Parameters	Description	Return
MD 41	list()	-	Interface, used to call the list() method in ExamInfoServiceImpl.	-
MD 42	modify()	examInfo, isSendEmail	Interface, used to call the modify() method in ExamInfoServiceImpl.	-
MD 43	remove()	Id, isSendEmail	Interface, used to call the remove() method in ExamInfoServiceImpl.	-

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## CDD-24: ExamInfoServiceimpl

ExamInfoServiceimpl	
-	FileRecordService: fileRecordService
+	list(): void
+	remove(long id, boolean isSendEmail): void
+	modify(ExamInfo examInfo, boolean isSendEmail): void

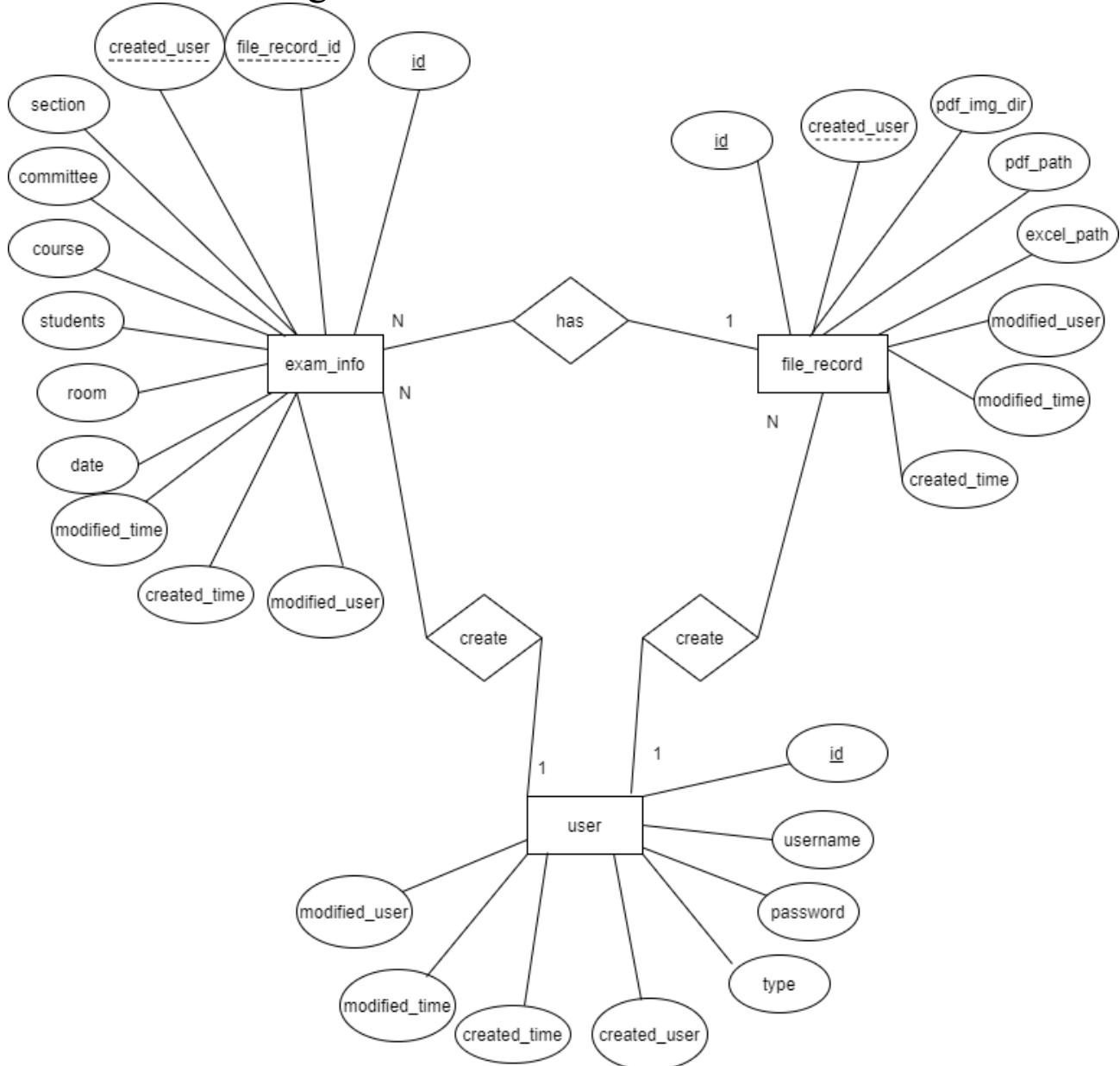
ExamInfoServiceimpl				
Attributes				
ID	Name	Description		Type
1	fileRecordService	fileRecordService		FileRecordService
Methods				
ID	Name	Parameters	Description	Return
MD 44	list()	-	This function get exam information from the database and show the list in the page.	Return exam information list.
MD 45	modify()	examInfo, isSendEmail	This function use to edit exam information to the database and call sendEmail() method send Email notification to the committee.	1.Return an error message “update examInfo data failed, please contact admin” If update data in database failed.
MD 46	remove()	Id, isSendEmail	This function use to delete exam information to the database and call sendEmail() method send Email notification to the committee.	Return an error message “delete examInfo data failed, please contact admin” If update data in database failed.
MD	sendEmail()	Title,	This function use to send exam	1. Return an error message

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46		examInfo	notification.	“recipient email is invalid form: (\$email)” If email is blank or invalid.
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## 3.2 Database Design



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### 3.2.1 Data Description

#### user table

Description: Used to store user information

NO.	Name	Description	Type	Size	Key
1	id	This attribute is the id of the user	Int	11	PK
2	username	This attribute is the username of the user	varchar	20	-
3	password	This attribute is the password of the user	varchar	20	-
4	type	This attribute is the type of the user	TINYINT	1	-
5	created_time	This attribute is the created time of the user	datetime	-	-
6	modified_time	This attribute is the modified time of the user	datetime	-	-
7	created_user	This attribute is the created user of the user	Int	11	-
8	modified_user	This attribute is the modified user of the user	int	11	-

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## Exam\_info table

Description: Used to store exam information

NO.	Name	Description	Type	Size	Key
1	id	This attribute is the id of the exam_info	Int	11	PK
2	file_record_id	This attribute is the id of the file_record_id table	Int	11	FK
3	date	This attribute is the exam date of the exam_info	varchar	64	-
4	time	This attribute is the exam time of the exam_info	Varchar	32	-
5	course	This attribute is the course of the exam_info	Varchar	16	-
6	section	This attribute is the section of the exam_info	Varchar	16	-
7	students	This attribute is the student of the exam_info	Varchar	16	-
8	room	This attribute is the room of the exam_info	Varchar	32	-
9	committee	This attribute is the committee of the exam_info	Varchar	32	-
10	created_time	This attribute is the created time of the exam_info	Datetime	-	-
11	modified_time	This attribute is the modified time of the exam_info	Datetime	-	-
12	created_user	This attribute is the created user of the exam_info	Int	11	FK
13	modified_user	This attribute is the modified user of the exam_info	int	11	-

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## File\_record table

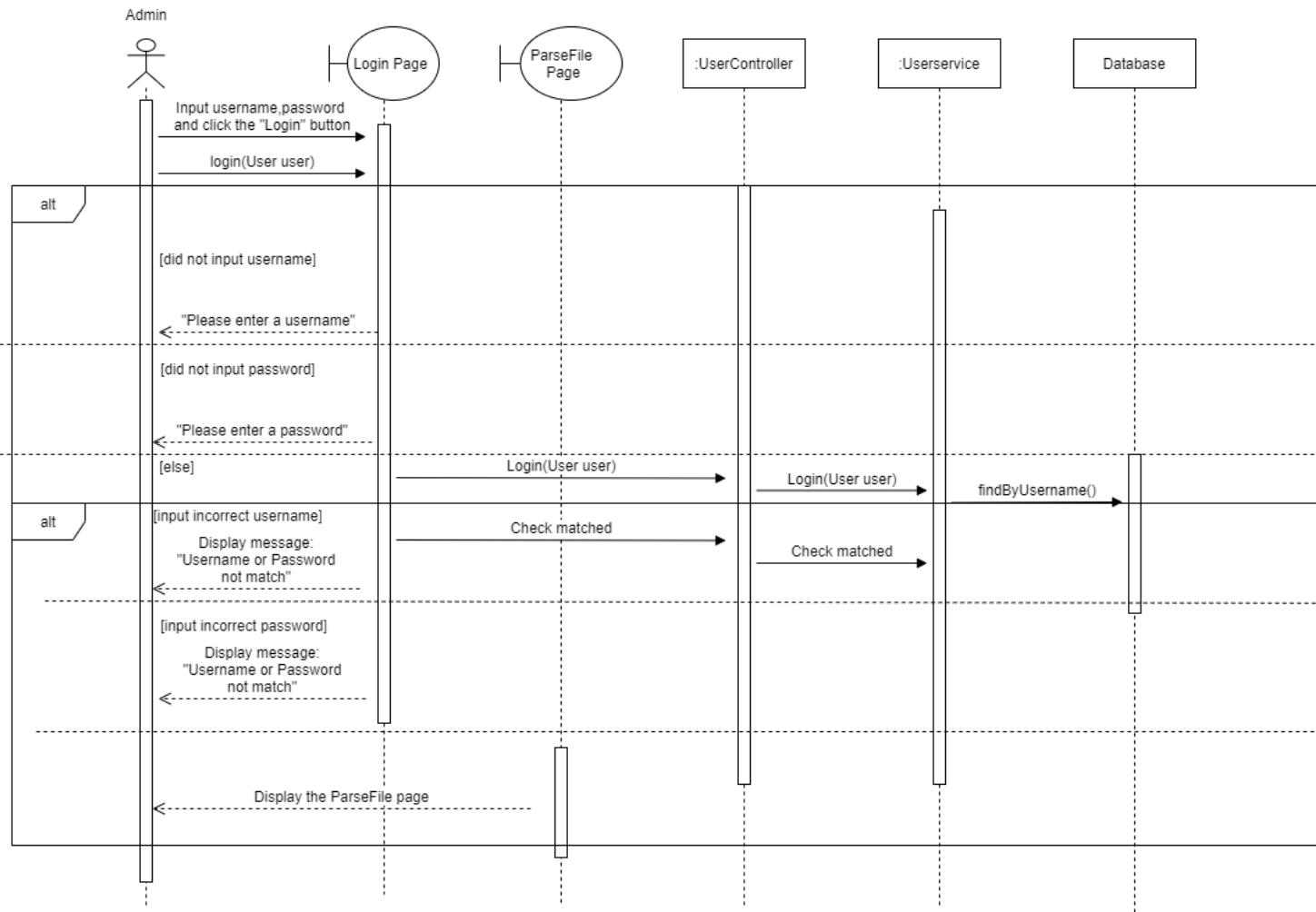
Description: Used to store file record history

NO.	Name	Description	Type	Size	Key
1	id	This attribute is the id of the file_record	Int	11	PK
2	pdf_path	This attribute is the pdf path of the file_record	varchar	11	
3	pdf_img_dir	This attribute is the img path of the file_record	varchar	64	-
4	talbe_img_dir	This attribute is the table img path of the file_record	Varchar	32	-
5	excel_path	This attribute is the excel path of the file_record	Varchar	16	-
6	created_time	This attribute is the created time of the file_record	Datetime	-	-
7	modified_time	This attribute is the modified time of the file_record	Datetime	-	-
8	created_user	This attribute is the created user of the file_record	Int	11	FK
9	modified_user	This attribute is the modified user of the file_record	int	11	-

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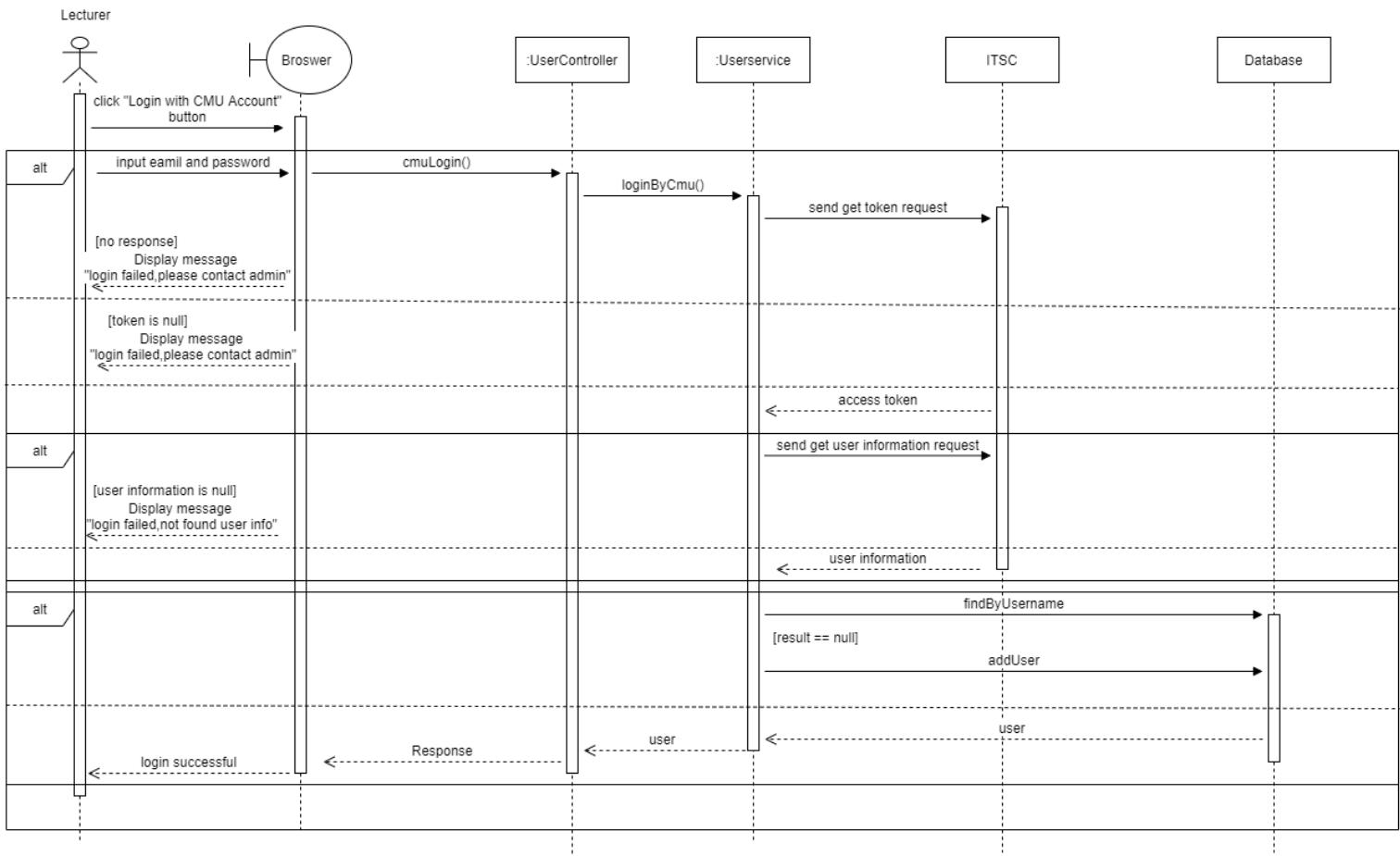
### 3.3 Sequence Diagram

#### 3.3.1 Authentication system SD-01 Admin Login



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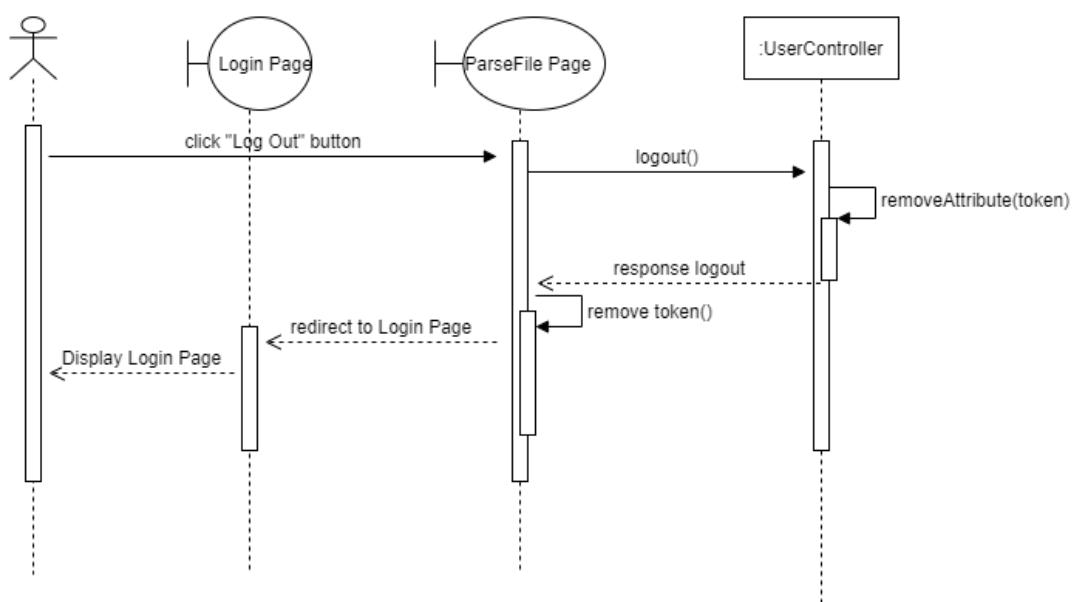
## SD-02 Lecturer Login



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## SD-03 Admin/Lecturer log out

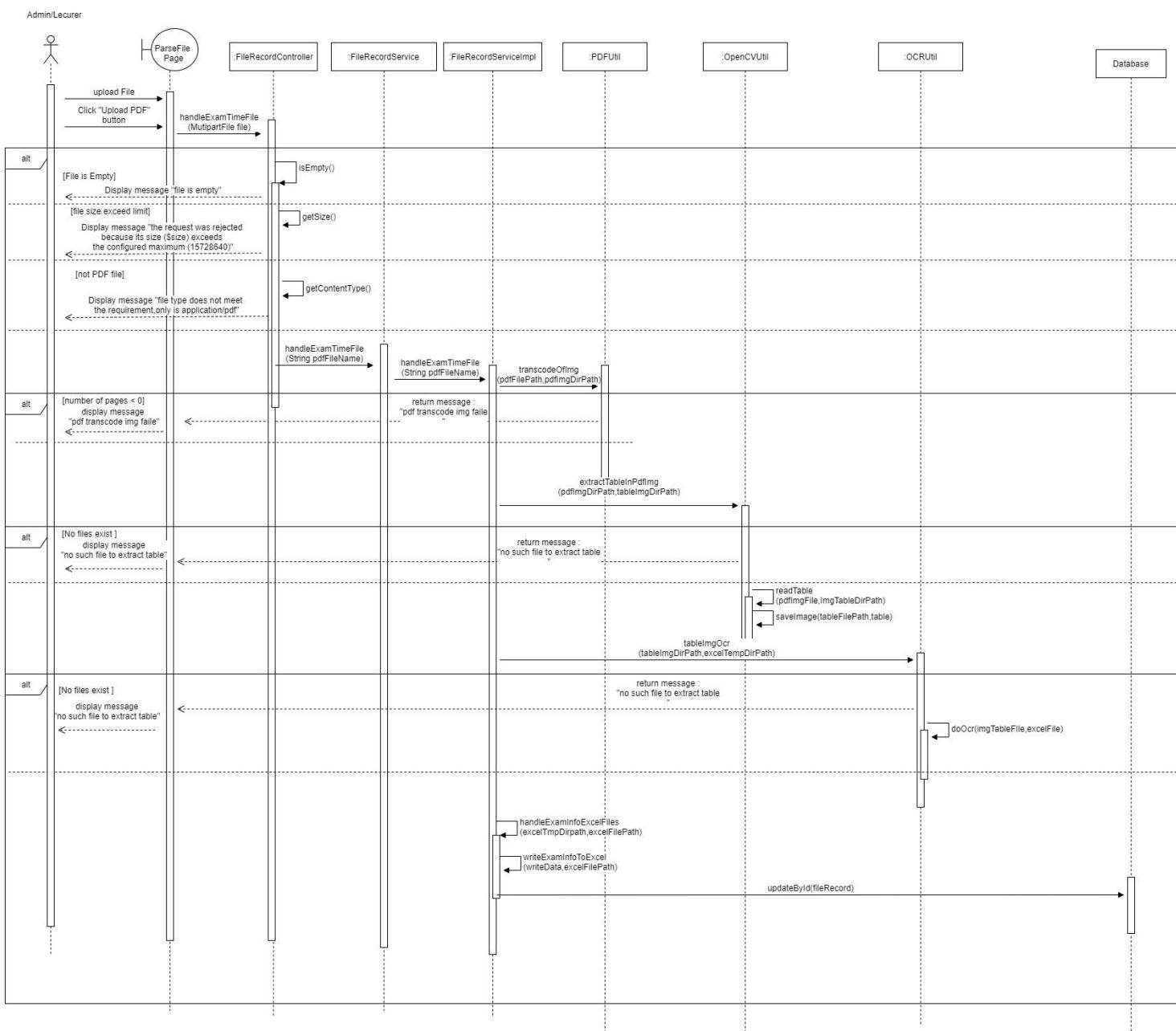
Admin/Lecurer



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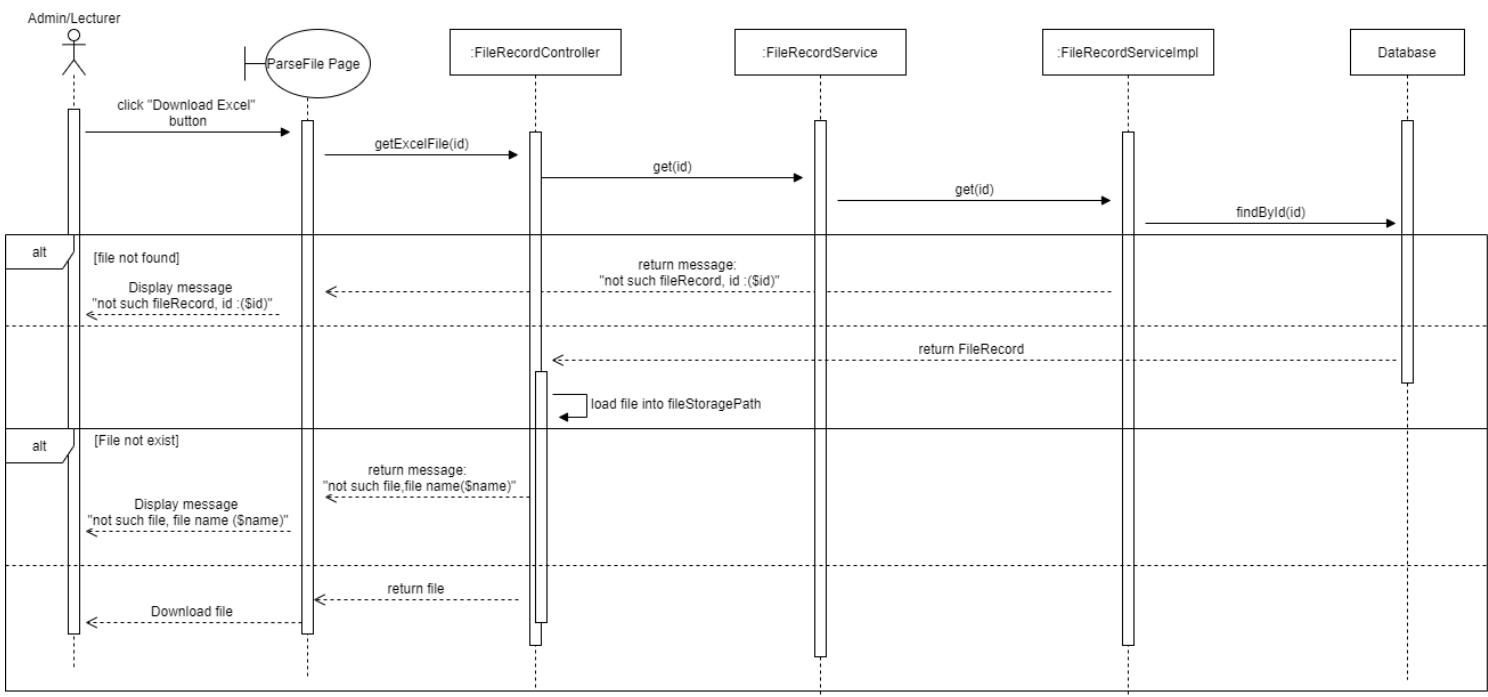
### 3.3.2 Table and cell detection and text extraction and parsing system

#### SD-04 Parse CAMT timetable PDF



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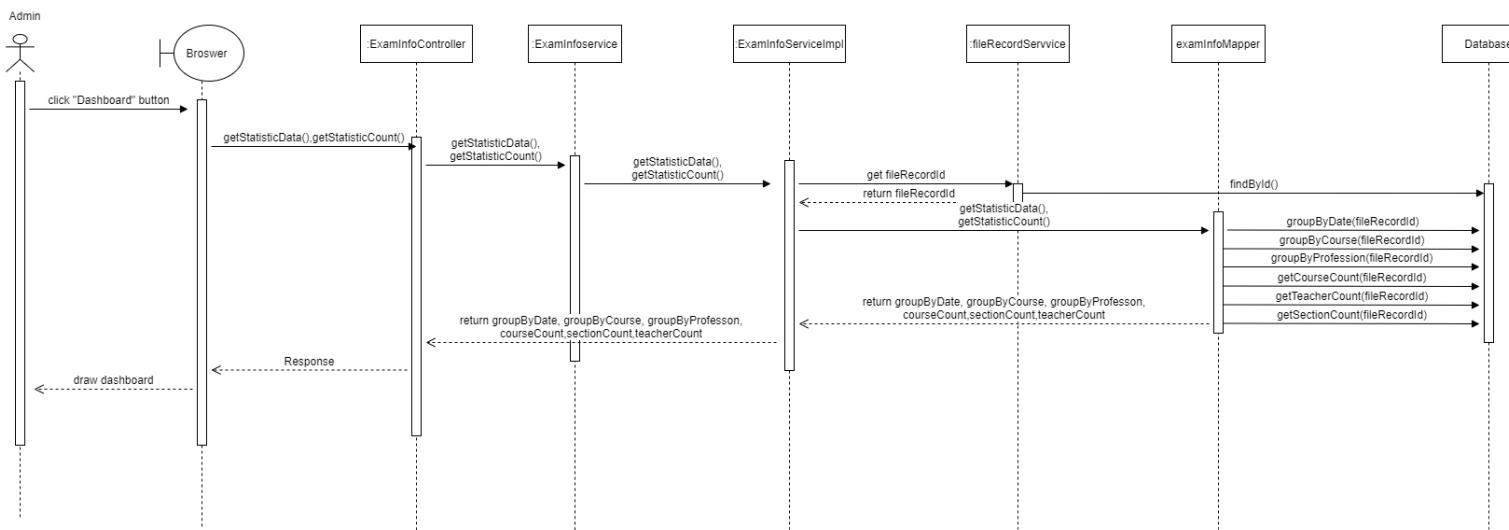
## SD-05 Download Excel



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### 3.3.3 Dashboard System

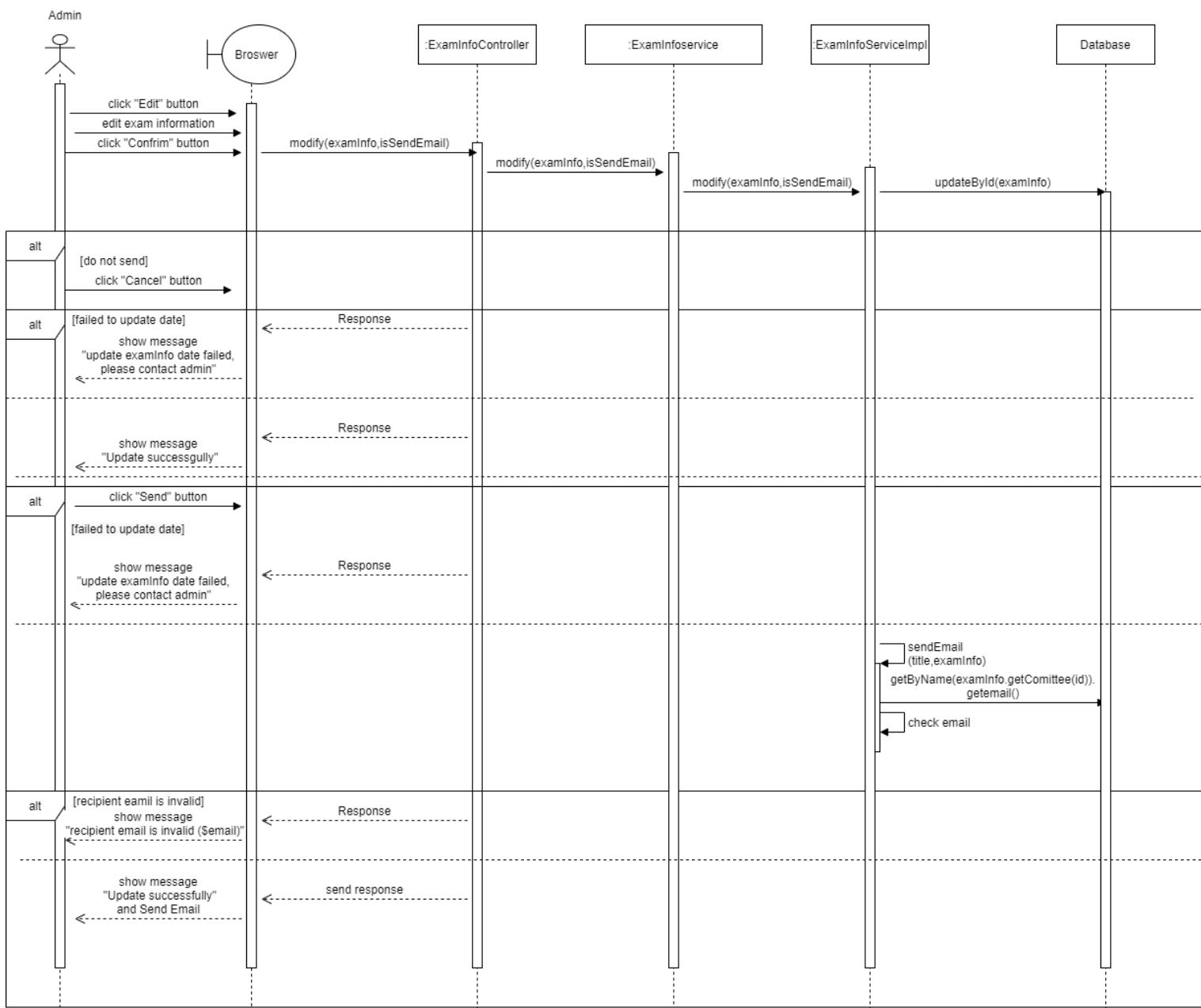
#### SD-06 Admin/Lecturer view dashboard



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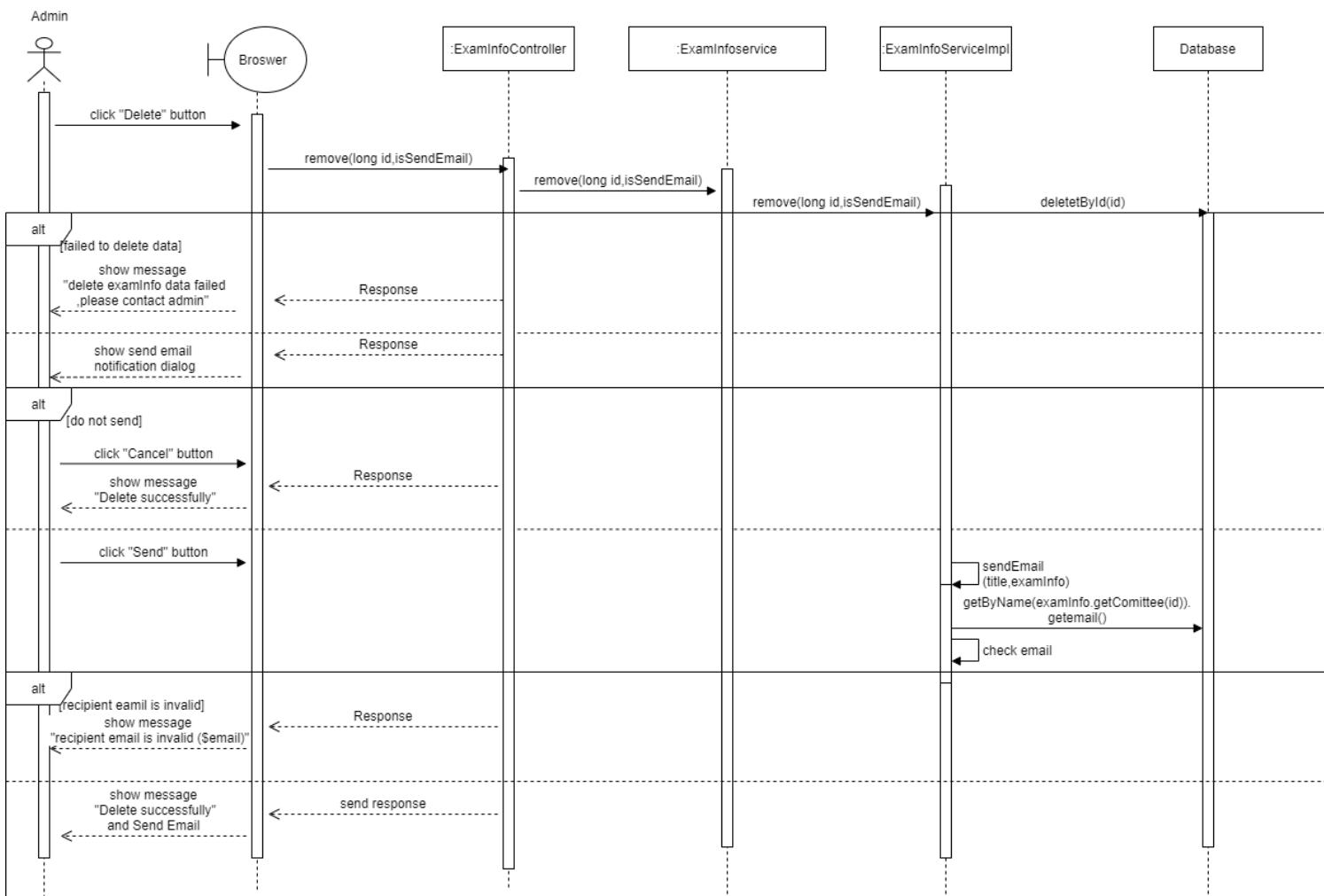
### 3.4.2 Notification system sequence diagrams

#### SD-07 Edit exam information



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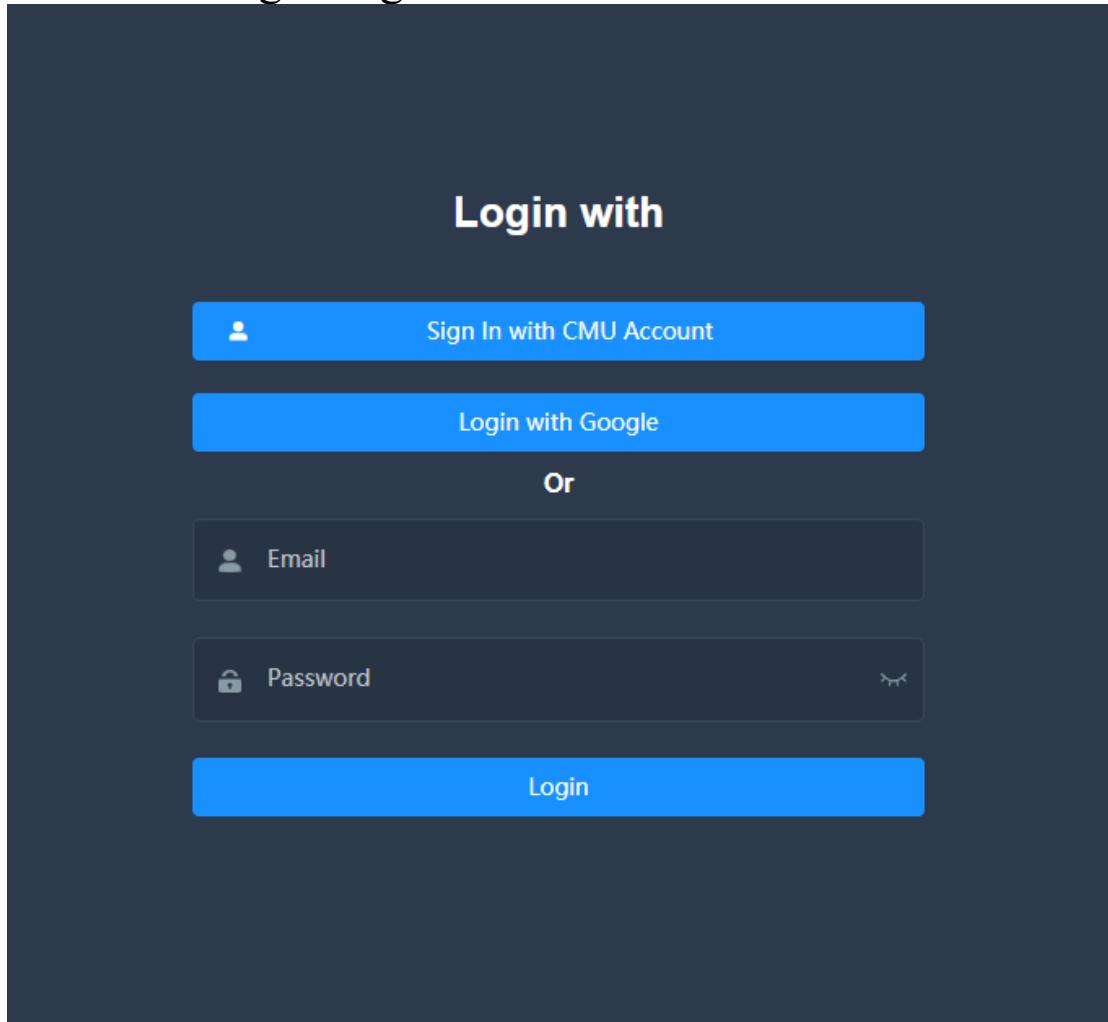
## SD-08 Delete exam information



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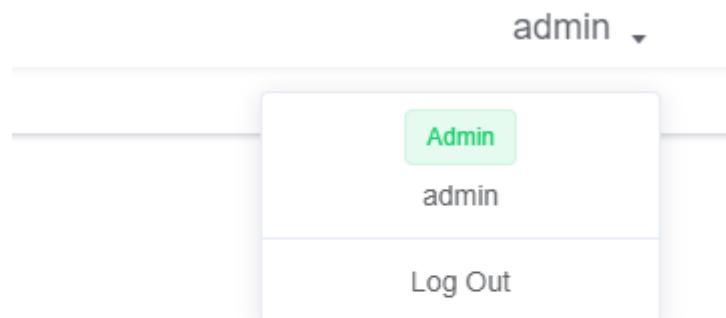
## Chapter Four | User Interface Design

### 4.1 UI-01 Login Page



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## 4.2 UI-02 Logout Page

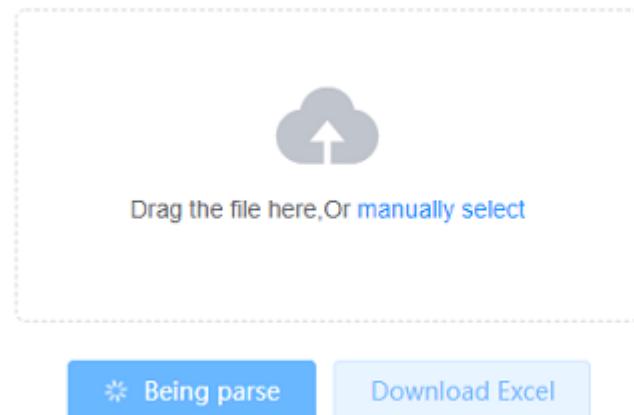


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## 4.3 UI-03 ParseFile Page

The screenshot shows a user interface for a file parsing application. On the left is a dark sidebar with a 'ParseFile' icon and a 'Dashboard' link. The main area has a header with 'ExamInfo / ParseFile' and navigation tabs for 'ParseFile' (selected) and 'Dashboard'. Below this is a dashed box containing a cloud icon with an upward arrow, and the text 'Drag the file here, Or manually select'. At the bottom are two buttons: 'Click Upload' (blue) and 'Download Excel' (light blue).

Being parse



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## Parse success



Drag the file here,Or [manually select](#)

Parse successDownload Excel

## Parse failed

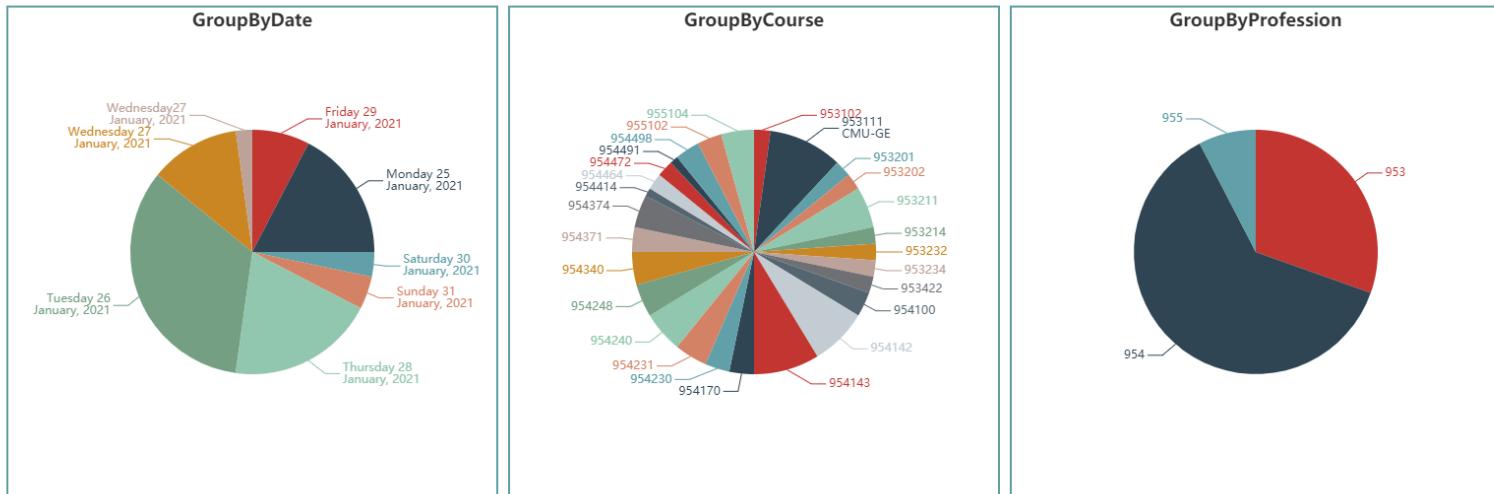
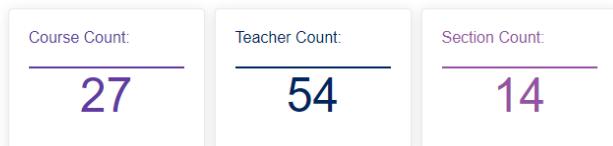


Drag the file here,Or [manually select](#)

Parse failedDownload Excel

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## 4.4 UI-04 Dashboard Page



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## 4.5 UI-05 ExamInfoList Page

4613	54	<a href="#">Friday 29 January, 2021</a>	15.30- 18.30	954240	002	18	IL C-B201	Phasit Charoenkwan	<a href="#">Edit</a>	<a href="#">Delete</a>
4614	54	<a href="#">Friday 29 January, 2021</a>	15.30- 18.30	954240	003	30	IL C-B201	Kittawaya Thongkoo	<a href="#">Edit</a>	<a href="#">Delete</a>
4615	54	<a href="#">Friday 29 January, 2021</a>	15.30- 18.30	954240	004	26	IL C-B201	Kittawaya Thongkoo	<a href="#">Edit</a>	<a href="#">Delete</a>
4616	54	<a href="#">Friday 29 January, 2021</a>	15.30- 18.30	954240	005	8	IL C-B201	Kittawaya Thongkoo	<a href="#">Edit</a>	<a href="#">Delete</a>
4617	54	<a href="#">Saturday 30 January, 2021</a>	1200- 15.00	954371	001	65	No booking classroom	Napaporn Reeveerakul	<a href="#">Edit</a>	<a href="#">Delete</a>
4618	54	<a href="#">Saturday 30 January, 2021</a>	1200- 15.00	954371	002	28	No booking classroom	Ratapol Wudhikarn	<a href="#">Edit</a>	<a href="#">Delete</a>
4619	54	<a href="#">Saturday 30 January, 2021</a>	1200- 15.00	954371	003	41	No booking classroom	Ratapol Wudhikarn	<a href="#">Edit</a>	<a href="#">Delete</a>
4620	54	<a href="#">Sunday 31 January, 2021</a>	12.00 - 15.00	955104	001	78	IL C-B201	Vimolboon Cherapanukorn	<a href="#">Edit</a>	<a href="#">Delete</a>
4621	54	<a href="#">Sunday 31 January, 2021</a>	12.00 - 15.00	955104	002	34	IL C-B201	Suepphong Chernbumroong	<a href="#">Edit</a>	<a href="#">Delete</a>
4622	54	<a href="#">Sunday 31 January, 2021</a>	12.00 - 15.00	955104	020	32	IL C-B201	Jirawit Yanchinda	<a href="#">Edit</a>	<a href="#">Delete</a>

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## 4.6 UI-06 Edit examinfo Page

Edit

X

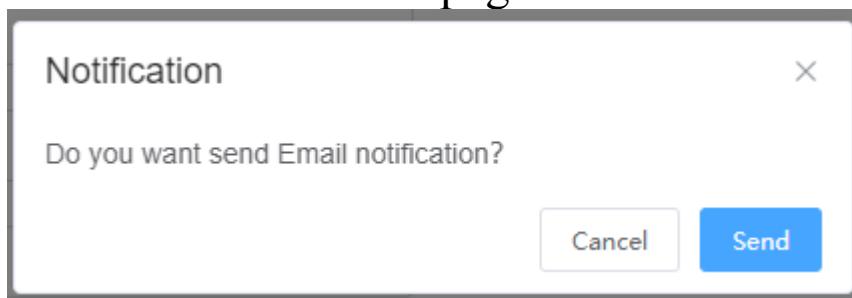
Date	Thursday 28January, 2021
Time	15.30 -18.30
Course	954491
Section	111
Students	30
Room	IL .C-B201
Committee	SSSS

Cancel

Confirm

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## 4.7 UI-07 Send Email page



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# **CHAPTER 6**

## **TEST PLAN**



## CAMT Exam Dashboard with Tesseract

### TEST PLAN

By

Lingyu Kong 612115506

Jiajun Tao 612115503

BACHELOR OF SOFTWARE ENGINEERING PROGRAM

COLLEGE OF ARTS, MEDIA AND  
TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

Pree Thiengburanathum, PhD

## CAMT Exam Dashboard with Tesseract

Lingyu Kong 612115506

Jiajun Tao 612115503

THIS REPORT HAS BEEN APPROVED TO BE A PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE  
SOFTWARE ENGINEERING PROGRAM: COLLEGE OF  
ARTS MEDIA AND TECHNOLOGY

..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

## Document History

Version	History	Status	Date	Viewable	Editable	Responsible
Test Plan_Version.1.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	5 June , 2021	Advisor LK JT	LK JT	LK JT
Test Plan_Version.2.docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	15 June , 2021	Advisor LK JT	LK JT	LK JT
Test Plan_Version.3.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 3</li> <li>• Chapter 4</li> </ul>	Draft	27 June , 2021	Advisor LK JT	LK JT	LK JT
Test Plan_Version.4.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	31 August, 2021	Advisor LK JT	LK JT	LK JT
Test Plan_Version.5.docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	10 September, 2021	Advisor LK JT	LK JT	LK JT
Test Plan_Version.6.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 3</li> <li>• Chapter 4</li> </ul>	Draft	15 September, 2021	Advisor LK JT	LK JT	LK JT
Test Plan_Version.7.docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	26 September, 2021	Advisor LK JT	LK JT	LK JT
Test Plan_Version.8.docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> <li>• Chapter 3</li> <li>• Chapter 4</li> </ul>	Draft	10 October, 2021	Advisor LK JT	LK JT	LK JT

\*LK = Lingyu Kong

\*JT = Jiajun Tao

\* Advisor = Pree Thiengburanathum,PhD

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# **Chapter One**

## **Introduction**

### **1.1 Objectives**

The objective of the Test Plan is to document the unit testing and system testing portion of development for the purpose of discovering defects and to establish a guarantee that the system will perform as expected by conducting testing that follows the requirements put forth by the test plan document. The unit testing verify that a small, well-defined function of our code is correct. System testing check whether it conform to the user requirements.

### **1.2 Scope**

The scope of this document includes test planning and test data, which will cover the unit test, system test. The unit testing activities are referred to the inspection and verification of the smallest testable unit of software and system testing activities are meant to detect a completely integrated system to verify it meets user requirements.

### **1.3 Acronyms and Definition**

#### **1.3.1 Acronyms**

UTC	Unit Test Case
UTR	Unit Test Record
STC	System Test Case
STR	System Test Record

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### 1.3.2 Definition

Name	Definition
Unit testing	A level of the software testing process where individual units/components of a software/system are tested. The purpose is to validate that each unit of the software performs as designed.
Test case	(1) A set of test inputs, execution conditions, and expected results developed for a particular objective, such as to exercise a particular program path or to verify compliance with a specific requirement. (2) Documentation specifying inputs predicted results and a set of execution conditions for a test item. [IEEE90]
System testing	A level of the software testing process where a complete, integrated system is tested in order to evaluate the compliance with the specified requirements.

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# **Chapter Two**

## **Test Procedure**

### **2.1. Scope of testing**

CAMT Exam Dashboard with Tesseract will be tested through both unit testing and system testing. In addition to that, test result will be documented.

### **2.2 Test Duration**

Progress	Date and Duration
Final Progress	Date: 30 September 2021 - 09 October 2021   Duration: 9 Days

### **2.3 Test Responsibility**

Item	Responsibility
Unit test case	Jiajun Tao
Unit test record	Jiajun Tao
System test	Jiajun Tao
System test record	Jiajun Tao

### **2.4 Test Strategy**

CAMT Exam Dashboard with Tesseract test strategy will be as follows:

1. Design test case for each feature
2. Prepare test data for each feature

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3. Determine expected result
4. Perform testing on individual features
5. Record test results
6. Store test files in project repository

## 2.5 Result of Testing

In the test record, the test results will be divided into:

Actual output: The actual output implemented in each test case

Pass/Fail criteria

1. Pass: The actual results are the same as the expected results
2. Fail: The actual results are different from the expected results

## 2.6 Test Environment

### 2.6.1 Hardware

DESKTOP-O445M9U

- ◆ Processor: Core i7-7700HQ @ 2.80GHz
- ◆ Memory: 16 GB 2400 MHz DDR4
- ◆ Graphics: NVIDIA GeForce GTX 1050Ti
- ◆ Operating System: Windows 10

### 2.6.2 Software

- ◆ Operating System: Windows 10
- ◆ Navicat 15 for MySQL
- ◆ IntelliJ IDEA 2019.3.2

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# Chapter Three

## Unit Testing

### 3.1 The Unit Test

#### Unit Test Case 001 (UTC-001):

**Method name:** login (String username, String password)

**Description:** This method is for validating “username”, and “password” whether they are match.

##### Data for testing:

1.

```
"username": "admin",  
"password": "admin"
```

---

2.

```
"username": "test",  
"password": "test"
```

---

3.

```
"username": "admin",  
"password": "123"
```

---

4.

```
"username": "adminadmin",  
"password": "admin"
```

---

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## Test Case

ID	Description	Input	Expected Result
1	Username is empty.	"username": "", "password": "admin"	“username or password not match”
2	Password is empty.	"username": "admin", "password": ""	“username or password not match”
3	Incorrect password.	"username": "admin", "password": "123"	“username or password not match”
4	Unregistered username.	"username": "adminadmin", "password": "admin"	“username or password not match”
5	Registered username and match password.	"username": "test", "password": "test"	-

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## Unit Test Case 002 (UTC-002):

**Method name:** getInfo (Long userId)

**Description:** This method is for get the user's information form database.

**Data for testing:**

1.

"userId: "0"

---

2.

"userId: "1"

---

3.

"userId: "2"

---

### Test Case

ID	Description	Input	Expected Result
1	Get information from the database with a unique user id: "1".	"userId: "1"	"User (id=1, username=admin, password=admin, type=1)"
2	Get information from the database with a unique user id: "2".	"userId: "2"	"User (id=2, username=test, password=test, type=2)"
3	Get information from the database with a user id that does not exist.	"userId: "0"	"user not found, id: 0"

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## Unit Test Case 003 (UTC-003):

**Method name:** Mapper Test findByUsername (String username)

**Description:** This method is finding user information stored in the database by user name.

**Data for testing:**

1.

"username": "admin"

---

2.

"username": "test",

---

3.

"username": "adminadmin"

---

### Test Case

ID	Description	Input	Expected Result
1	Username is empty.	"username": "",	“null”
2	username: "admin".	"username": "admin"	“User (id=1, username=admin, password=admin, type=1)”
3	username: "test".	"username": "test"	“User (id=2, username=test, password=test, type=2)”
4	Try does not exist username: "adminadmin".	"username": "adminadmin"	“null”

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## Unit Test Case 004 (UTC-004):

**Method name:** Mapper Test findById (Long id)

**Description:** This method is finding user information stored in the database by user id.

**Data for testing:**

1.

"userId: "0"

---

2.

"userId: "1"

---

3.

"userId: "2"

---

### Test Case

ID	Description	Input	Expected Result
1	Try user id: "1".	"userId: "1"	“User (id=1, username=admin, password=admin, type=1)”
2	Try user id: "2".	"userId: "2"	“User (id=2, username=test, password=test, type=2)”
3	Try user id: "0".	"userId: "0"	“user not found, id: 0”

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## **Unit Test Case 005 (UTC-005):**

**Method name:** handleExamTimeFile (String pdfFileName)

**Description:** This method is testing whether PDF files are recorded correctly.

**Data for testing:**

1.

"pdfFileName: "1624870767266.pdf"

---

2.

"pdfFileName: "1624870767266.png"

---

3.

"pdfFileName: "1624944580150.jpg"

---

4.

"pdfFileName: "1624944580150.doc"

---

5.

"pdfFileName: "1624944580150.ppt"

---

6.

"pdfFileName: "1624944580150.xls"

---

7.

"pdfFileName: "1624944580150.pdf"

---

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## Test Case

ID	Description	Input	Expected Result
1	Input a not recorded PDF file.	"pdfFileName: "1624870767266.pdf"	“File doesn't exist”
2	PDF file name is empty.	"pdfFileName: ""	“Value cannot be null”
3	Input a PNG format file.	"pdfFileName:"1624870767266.png"	“Invalid/Unknown/Unsupported format”
4	Input a JPG format file.	“pdfFileName: "1624944580150.jpg”	“Invalid/Unknown/Unsupported format”
5	Input a DOC format file.	“pdfFileName: "1624944580150.doc”	“Invalid/Unknown/Unsupported format”
6	Input a PPT format file.	“pdfFileName: "1624944580150.ppt”	“Invalid/Unknown/Unsupported format”
7	Input a XLS format file.	“pdfFileName: "1624944580150.xls”	“Invalid/Unknown/Unsupported format”
8	Input a recorded PDF file.	"pdfFileName:" 1624944580150.pdf"	-

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## Unit Test Case 006 (UTC-006):

**Method name:** get (Long id)

**Description:** This method is viewing the file record information with special ID from database.

**Data for testing:**

1.

"pdfFileRecordId: "1"

---

2.

"pdfFileRecordId: "2"

---

3.

"pdfFileRecordId: "3"

---

### Test Case

ID	Description	Input	Expected Result
1	PDF file record id: "1".	"pdfFileRecordId: "1"	“FileRecord(id=1, pdfPath=pdf_dir/1624944580150. pdf, pdfImgDir=pdf_img_dir/1624944 580150/, tableImgDir=table_img_dir/16249 44580150/, excelPath=excel_dir/16249445801 50.xlsx)”
2	PDF file record id: "2".	"pdfFileRecordId: "2"	“FileRecord(id=2, pdfPath=pdf_dir/1624940213.pdf, pdfImgDir=pdf_img_dir/1624940 213/, tableImgDir=table_img_dir/16249 40213/, excelPath=excel_dir/1624940213.

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			xlsx)"
3	Input a file record id that does not exist	"pdfFileRecordId: "3"	“no such fileRecord, id: 3”

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## Unit Test Case 007 (UTC-007):

**Method name:** List ()

**Description:** This method is testing whether the system can get data from the Exam\_info table.

**Data for testing:**

1.

“Limit: “3”, “Page”:1000”

---

2.

“Limit: “3”, “Page”:2”

---

3.

“Limit: “3”, “Page”:3”

---

### Test Case

ID	Description	Input	Expected Result
1	Out of database existing pages.	“Limit: “3”, “Page”:1000”	{ "total": 1651, "examInfoList": [ ], }
2	At database page 1, get three sets of data	“Limit: “3”, “Page”:1”	"examInfoList": [ { "modifiedTime": 1629100078000, "modifiedUser": 1, "Time": "12.00-\n15.00", "Section": "", "Date": "Monday 16,\nAugust 2021", "fileRecordId": 16,

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			"Students": "30",           "Committee (Proctors)": "Arinya Pongwat",           "createdTime": 1629100078000,           "id": 1690,           "Room": "C AMT\n418",           "createdUser": 1         },         {           "modifiedTime": 1629100078000,           "modifiedUser": 1,           "Time": "12.00-\n15.00",           "Section": "",           "Date": "Monday 16,\nAugust 2021",           "fileRecordId": 16,           "Students": "30",           "Committee (Proctors)": "Orawan Thong-           ngarm",           "createdTime": 1629100078000,           "id": 1691,           "Room": "C AMT\n418",           "createdUser": 1         },         {           "modifiedTime": 1629100078000,         }
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			<pre>         "modifiedUser": 1,         "Time": "15.30- \n18.30",         "Section": "",         "Date": "Monday 16,\nAugust 2021",         "fileRecordId": 16,         "Students": "30",         "Committee (Proctors)": "Arinya Pongwat",         "createdTime": 1629100078000,         "id": 1692,         "Room": "C AMT\n418",         "createdUser": 1     } ]. </pre>
3	At database page 2, get three sets of data	"Limit: "3", "Page":3"	<pre> {         "modifiedTime": 1629100078000,         "modifiedUser": 1,         "Time": "08.00- \n11.00",         "Section": "004",         "Date": "Tuesday17,\nAugust 2021",         "fileRecordId": 16,         "Students": "30",         "Committee (Proctors)": "Thanut Walairat",         "createdTime": 1629100078000,         "id": 1697, </pre>

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			"Room": "C AMT\n412", "createdUser": 1 }, { "modifiedTime": 1629100078000, "modifiedUser": 1, "Time": "08.00- \n11.00", "Section": "020", "Date": "Tuesday17,\nAugust 2021", "fileRecordId": 16, "Students": "22", "Committee (Proctors)": "Pongtawan Sangsawang", "createdTime": 1629100078000, "id": 1698, "Room": "C AMT\n412", "createdUser": 1 }, { "modifiedTime": 1629100078000, "modifiedUser": 1, "Time": "08.00- \n11.00", "Section": "001", "Date": "Tuesday17,\nAugust 2021",
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			<pre>     "fileRecordId": 16,     "Students": "61",     "Committee     (Proctors)": "Thepparit     Sinthamrongrak",     "createdTime":     1629100078000,     "id": 1699,     "Room":     "CAMT\n316",     "createdUser": 1 } ]. </pre>
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## Unit Test Case 008 (UTC-008):

**Method name:** remove ()

**Description:** This method is testing whether the system can delete data from the Exam\_info table and determine whether to send an email.

**Data for testing:**

1.

Id"9999", isSendEmail "false"

---

2.

Id"1784", isSendEmail "false"

---

3.

Id"1783", isSendEmail "true"

---

### Test Case

ID	Description	Input	Expected Result
1	Input an id that does not exist and do not send email.	Id"9999", isSendEmail "false"	no such exam info
2	Get 1784 data.	Id"1784"	ExamInfo(id=1784, fileRecordId=null, date= Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee=Pattama Longani)
3	Exam info id equal "1784" and do not send email.	Id"1784", isSendEmail "false"	no such exam info
4	Get 1783 data.	Id"1783"	ExamInfo(id=1783, fileRecordId=null, date= Saturday 30, November2019,

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			time=12.00 - 15.00, course="954413", section=001, students=29, room=CAMT 114, committee= Arunothai Pongwat)
5	Exam info id equal "1783" and send email.	Id"1783", isSendEmail "true"	no such exam info exam files in the mailbox

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## **Unit Test Case 009 (UTC-009):**

**Method name:** modify ()

**Description:** This method is testing whether the system can modify data from the Exam\_info table and determine whether to send an email.

### **Data for testing:**

1.

Id:"1784L", Date:"TEST 1", isSendEmail "false"

---

2.

Id:"1784L", Time:"TEST 2", isSendEmail "false"

---

3.

Id:"1784L", Course:"TEST 3", isSendEmail "false"

---

4.

Id:"1784L", Section:"TEST 4", isSendEmail "false"

---

5.

Id:"1784L", Students:"TEST 5", isSendEmail "false"

---

6.

Id:"1784L", Room:"TEST 6", isSendEmail "false"

---

7.

Id:"1784L", Committee:"TEST 7", isSendEmail "false"

---

8.

Id:"1784L", Date:" ", Time:" ", Course:" ", Section:" ", Students:" ", Room:" ", Committee:" ", isSendEmail "true"

---

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## Test Case

ID	Description	Input	Expected Result
1	Modify the date of 1784 data and do not send email.	Id:"1784L", Date:"TEST 1", isSendEmail "false"	ExamInfo(id=1784, fileRecordId=null, date= TEST 1, time=null, course=null, section=null, students=null, room=null, committee=null)
2	Modify the time of 1784 data and do not send email.	Id:"1784L", Time:"TEST 2", isSendEmail "false"	ExamInfo(id=1784, fileRecordId=null, date= null, time= TEST 2, course=null, section=null, students=null, room=null, committee=null)
3	Modify the course of 1784 data and do not send email.	Id:"1784L", Course:"TEST 3", isSendEmail "false"	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course= TEST 3, section=null, students=null, room=null, committee=null)
4	Modify the section of 1784 data and do not send email.	Id:"1784L", Section:"TEST 4", isSendEmail "false"	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section= TEST 4, students=null, room=null, committee=null)
5	Modify the student of 1784 data and do not send email.	Id:"1784L", Students:"TEST 5", isSendEmail "false"	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students= TEST 5, room=null, committee=null)
6	Modify the room of 1784 data and do not send email.	Id:"1784L", Room:"TEST 6", isSendEmail "false"	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students=null, room=

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			TEST 6, committee=null)
7	Modify the committee of 1784 data and do not send email.	Id:"1784L", Committee:"TEST 7, isSendEmail "false""	"Update successful" ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students=null, room=null, committee= TEST 7)
8	Modify all info to empty and do not send email.	Id:"1784L", Date:" ", Time:" ", Course:" ", Section:" ", Students:" ", Room:" ", Committee:" ", isSendEmail " false"	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students=null, room=null, committee=null)
9	Modify the 1784 exam info and send email.	Id:"1784L", Date:" Monday 25 January, 2021 ", Time:" 12.00 - 15.00 ", Course:" 954100", Section:" 001", Students:" 30 ", Room:" C AMT 112 ", Committee:" Jiajun Tao", isSendEmail " true"	ExamInfo(id=1784, fileRecordId=null, date= Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee=Jiajun Tao)

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## **Unit Test Case 010 (UTC-010):**

**Method name:** getName()

**Description:** This method is testing whether the system can match the name of the committee with the corresponding email address.

**Data for testing:**

1.

Username “Jiajun Tao”

---

2.

Username “Lingyu Kong”

---

### **Test Case**

ID	Description	Input	Expected Result
1	The committee's name is “Jiajun Tao”	Username “Jiajun Tao”	“User (id=5, username=Jiajun Tao, email=jiajun_tao@cmu.ac.th, type=0)”
2	The committee's name is “Lingyu Kong”	Username “Lingyu Kong””	“User (id=6, username=Lingyu kong, email=lingyu_k@cmu.ac.th, type=0)”

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## Unit Test Case 011 (UTC-011):

**Method name:** getStatisticData ()

**Description:** This method is testing whether the system can get statistic data.

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### Test Case

ID	Description	Input	Expected Result
1	The file record id is 1.	fileRecordId: "1"	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Friday 29, January, 2021, count=7), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Monday 25, January, 2021, count=16), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Saturday 30, January, 2021, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Sunday 31, January, 2021, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Thursday 28, January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday 27, January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Tuesday 26, January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Friday 29, January, 2021, count=7), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Monday 25, January, 2021, count=16), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Saturday 30, January, 2021, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Sunday 31, January, 2021, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Thursday 28, January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday 27, January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Tuesday 26, January, 2021, count=19)]

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					<p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Tuesday 26 January, 2021, count=31), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday 27 January, 2021, count=11), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday27 January, 2021, count=2)] [ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953102, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953111 CMU-GE, count=9), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953201, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953202, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953211, count=5), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953214, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953232, count=2), ExamInfoStatisticResponse.Indicat</p>

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			orsWithCount(indicators=953234, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953422, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954100, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954142, count=7), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954143, count=8), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954170, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954230, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954231, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954240, count=5), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954248, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954340, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954371,
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			<p>count=3),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954374, count=4),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954414, count=1),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954464, count=2),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=952, count=2),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954411, count=2),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954418, count=3),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955102, count=3),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955104, count=4)]</p> <p>[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953, count=28),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954, count=58),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955, count=7)]</p>
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2	The file record id is 99.	fileRecordId: "99"	"no such fileRecord, id: 99"
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## Unit Test Case 012 (UTC-012):

**Method name:** testGetStatisticCount ()

**Description:** This method is testing whether the system can get statistic count.

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### Test Case

ID	Description	Input	Expected Result
1	The file record id is 1.	fileRecordId: "1"	"ExamInfoStatisticCountResponse (courseCount=27, sectionCount=13, teacherCount=54)"
2	The file record id is 99.	fileRecordId: "99"	"no such fileRecord, id: 99"

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## **Unit Test Case 013 (UTC-013):**

**Method name:** Mapper Test testGetCourseCount ()

**Description:** This method is testing whether the system can get course count stored in the database.

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### **Test Case**

ID	Description	Input	Expected Result
1	The file record id is 1.	fileRecordId: "1"	"27"
2	The file record id is 99.	fileRecordId: "99"	"no such fileRecord, id: 99"

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## **Unit Test Case 014 (UTC-014):**

**Method name:** Mapper Test testGetSectionCount ()

**Description:** This method is testing whether the system can get section count stored in the database.

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### **Test Case**

ID	Description	Input	Expected Result
1	The file record id is 1.	fileRecordId: "1"	"13"
2	The file record id is 99.	fileRecordId: "99"	"no such fileRecord, id: 99"

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## **Unit Test Case 015 (UTC-015):**

**Method name:** Mapper Test testGetCommitteeCount ()

**Description:** This method is testing whether the system can get committee count stored in the database.

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### **Test Case**

ID	Description	Input	Expected Result
1	The file record id is 1.	fileRecordId: "1"	"54"
2	The file record id is 99.	fileRecordId: "99"	"no such fileRecord, id: 99"

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## Unit Test Case 016 (UTC-016):

**Method name:** Mapper Test findById()

**Description:** This method is testing find Exam\_info stored in the database by id.

**Data for testing:**

1.

Id: "1"

---

2.

Id: "9999"

---

### Test Case

ID	Description	Input	Expected Result
1	The Exam_info id is 1.	Id: "1"	"ExamInfo(id=1, fileRecordId=1, date=Monday 25 January, 2021, time=12.00 - 15.00, course=953214, section=701, students=38, room=C AMT 113, committee=Passakorm Phannachitta)"
2	The Exam_info id is 9999.	Id: "9999"	"null"

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## **Unit Test Case 017 (UTC-017):**

**Method name:** Mapper Test updateById()

**Description:** This method is testing update Exam\_info stored in the database by id.

**Data for testing:**

1.

Id:"1783L", Date:"test date"

---

2.

Id:"1783L", Time:"test time"

---

3.

Id:"1783L", Course:"test course"

---

4.

Id:"1783L", Section:"test section"

---

5.

Id:"1783L", Students:"test students"

---

6.

Id:"1783L", Room:"test room"

---

7.

Id:"1783L", Committee:"test committee"

---

8.

Id:"1783L", Date:" ", Time:" ", Course:" ", Section:" ", Students:" ", Room:" ", Committee:" "

---

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## Test Case

ID	Description	Input	Expected Result
1	Update the date of 1783 data.	Id:"1783L", Date:"test date"	ExamInfo(id=1783, fileRecordId=null, date=test date, time= null, course= null, section= null, students= null, room= null, committee= null)
2	Update the time of 1783 data.	Id:"1783L", Time:"test time"	ExamInfo(id=1783, fileRecordId=null, date= null, time= test time, course= null, section= null, students= null, room= null, committee= null)
3	Update the course of 1783 data.	Id:"1783L", Course:"test course"	ExamInfo(id=1783, fileRecordId=null, date= null, time=null, course= test course, section= null, students= null, room= null, committee= null)
4	Update the section of 1783 data.	Id:"1783L", Section:"test section"	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= test section, students= null, room= null, committee= null)
5	Update the student of 1783 data.	Id:"1783L", Students:"test students" "	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= test students, room= null, committee= null)
6	Update the room of 1783 data.	Id:"1783L", Room:"test room"	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section=

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			null, students= null, room= test room, committee= null)
7	Update the committee of 1783 data.	Id:"1783L", Committee:"test committee"	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= null, committee= test committee)
8	Update all info to empty.	Id:"1783L", Date:" ", Time:" ", Course:" ", Section:" ", Students:" ", Room:" ", Committee:" "	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= null, committee= null)

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## Unit Test Case 018 (UTC-018):

**Method name:** Mapper Test deleteById()

**Description:** This method is testing delete Exam\_info stored in the database by id.

**Data for testing:**

1.

Id"9999"

---

2.

Id"1783"

---

3.

Id"1784"

---

### Test Case

ID	Description	Input	Expected Result
1	Input an id that does not exist.	Id"9999"	0
2	Get 1784 data.	Id"1784"	ExamInfo(id=1784, fileRecordId=null, date= Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee= Pattama Longani)
3	Exam info id equal "1784".	Id"1784"	0
4	Get 1783 data.	Id"1783"	ExamInfo(id=1783, fileRecordId=null, date= Saturday 30, November2019, time=12.00 - 15.00, course= "954413", section=001, students=29, room=CAMT 114,

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			committee= Arunothai Pongwat)
5	Exam info id equal “1783”	Id”1783”	0

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## Unit Test Case 019 (UTC-019):

**Method name:** Mapper Test groupByCourse()

**Description:** This method is testing the dashboard data resulting from the course, and that data is stored in the database.

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "9999"

---

### Test Case

ID	Description	Input	Expected Result
1	Input a file record id equal 1.	fileRecordId: "1"	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953102, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953111CMU-GE, count=9), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953201, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953202, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953211, count=5), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953214, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953215, count=1)]

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			orsWithCount(indicators=953232, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953234, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953422, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954100, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954142, count=7), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954143, count=8), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954170, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954230, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954231, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954240, count=5), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954248, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954340,
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		count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954371, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954374, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954414, count=1), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954464, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=952, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954411, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954418, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955102, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955104, count=4)]	
2	Input a file record id that does not exist.	fileRecordId: "9999"	"[ ]"

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## Unit Test Case 020 (UTC-020):

**Method name:** Mapper Test groupByDate()

**Description:** This method is testing the dashboard data resulting from the date, and that data is stored in the database.

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "9999"

---

### Test Case

ID	Description	Input	Expected Result
1	Input a file record id equal 1.	fileRecordId: "1"	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Friday 29), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Monday 25), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Saturday 30), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Sunday 31), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Thursday 28)]

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			<p>January, 2021, count=19),      ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Tuesday      26</p> <p>January, 2021, count=31),      ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednes      day 27</p> <p>January, 2021, count=11),      ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednes      day27</p> <p>January, 2021, count=2)]</p>
2	Input a file record id that does not exist.	fileRecordId: "9999"	"[ ]"

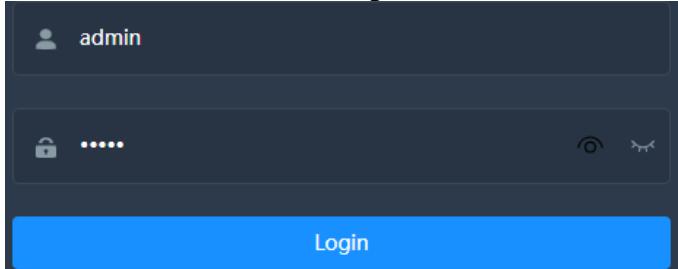
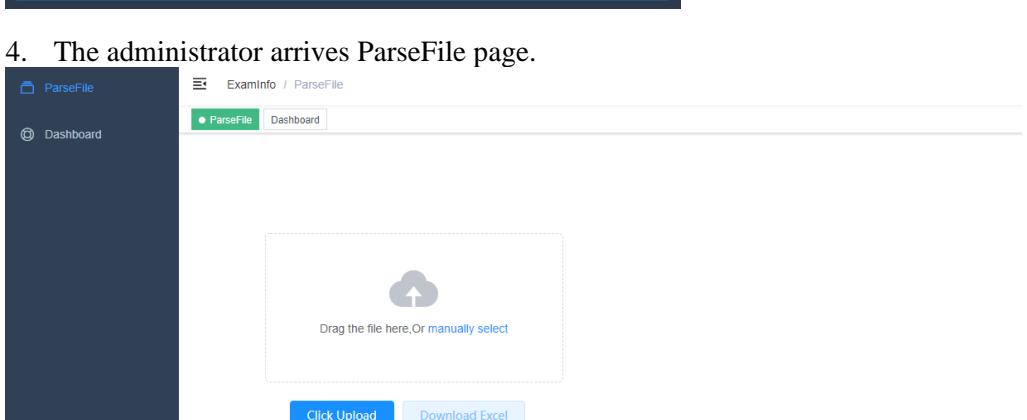
<b>Document Name</b>	CAMT Exam Dashboard with Tesseract Test_Plan_V.8	<b>Owner</b>	Lingyu Kong Jiajun Tao	<b>Page</b>	249/420
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# Chapter Four

## System Testing

### 4.1 System test for Authentication System

STC-01: Administrators can log in the system.

<b>Test Description</b>	The test case is used to test whether the administrators can log in the system by inputting username, and password. After the user input all fields correctly, administrators will go to: Parse page.
<b>Prerequisite</b>	The administrator opens the Login page in the system. - The administrator must have registered user account.
<b>Test Steps</b>	<ol style="list-style-type: none"><li>1. The administrator open url: <a href="https://localhost:9527">https://localhost:9527</a>, </li><li>2. The administrator input username and password.</li><li>3. The administrator clicks login button.</li></ol> <ol style="list-style-type: none"><li>4. The administrator arrives ParseFile page. </li></ol>

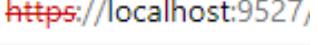
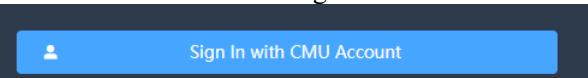
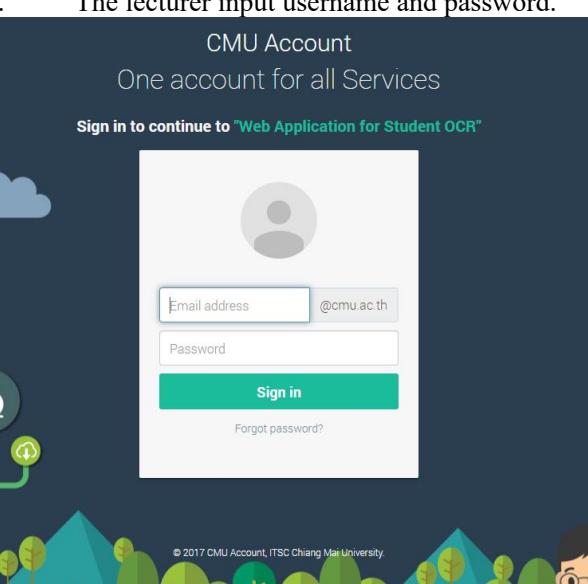
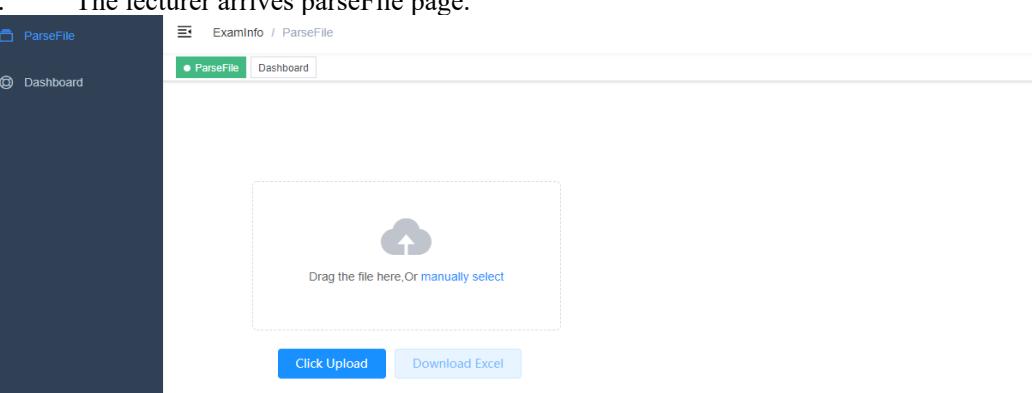
#### Test data: Appendix User

ID	Description	Input	Expected Result
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<b>STC-01.1</b>	Username is empty.	"username": "", "password": "admin"	The system will display an error message “Please enter a username”
<b>STC-01.2</b>	Password is empty.	"username": "admin", "password": ""	The system will display an error message “Please enter a password”
<b>STC-01.3</b>	Log into the system with the incorrect password.	"username": "admin", "password": "123"	The system will display an error message “username or password not match”
<b>STC-01.4</b>	Log into the system with an unregistered username.	"username": "adminadmin", "password": "admin"	The system will display a toast error message "username or password not match"
<b>STC-01.5</b>	Log into the system with a registered administrator account.	"username": "admin", "password": "admin"	The system will direct into the parseFile page and show the user type and user name in the upper right corner.

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### STC-02: Lecturers can log in the system.

<b>Test Description</b>	The test case is used to test whether the lecturers can log in the system by inputting username, and password. After the user input all fields correctly, lecturers will go to: Parse page.
<b>Prerequisite</b>	A lecturer opens the Login page in the system. - The lecturer must have registered CMU account.
<b>Test Steps</b>	<p>1. The lecturer open url: <a href="https://localhost:9527">https://localhost:9527</a>.</p>  <p>2. The lecturer clicks Sign in with CMU Account button.</p>  <p>3. The lecturer input username and password.</p>  <p>4. The lecturer arrives parseFile page.</p> 

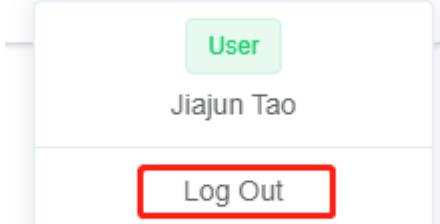
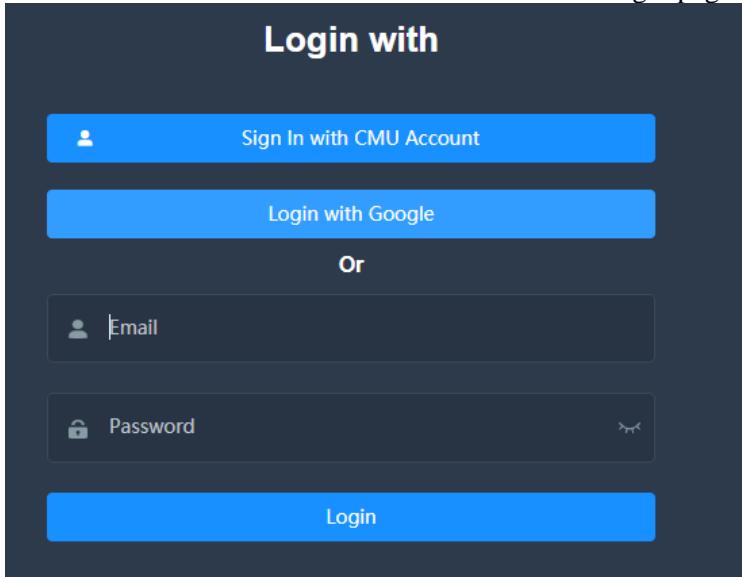
### Test data: Appendix A

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ID	Description	Input	Expected Result
STC-02.1	Username is empty.	"username": "", "password": "123456"	The system will display an error message “Please enter a username”
STC-02.2	Password is empty.	"username": "" Jiajun_Tao@cmu.ac.th", "password": ""	The system will display an error message “Please enter a password”
STC-02.3	Log into the system with the incorrect password.	"username": "*@cmu.ac.th", "password": "123"	The system will display an error message “username or password not match”
STC-02.4	Log into the system with an unregistered username.	"username": "adminadmin ", "password": "123456"	The system will display a toast error message "username or password not match"
STC-02.5	Log into the system with a registered CMU account.	"username": "Jiajun_Tao @cmu.ac.th ", "password": "123456"	The system will back to Login page, and show the massage ”Logging in, please wait a moment” than direct into the parseFile page, show the user type and user name in the upper right corner.

### STC-03: Administrators or lecturers can logout from the system.

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<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can log out from the system by clicking the “Log Out” button at the most right of the navigation bar.
<b>Prerequisite</b>	The administrators or lecturers already login the system.
<b>Test Steps</b>	<p>1. The administrators or lecturers clicking the “Log Out” button at the most right of the navigation bar.</p>  <p>—</p> <p>2. The administrators or lecturers redirect to the Login page.</p> 

ID	Description	Input	Expected Result
STC-03.1	The administrators or lecturers already login the system.	The administrators or lecturers clicking the “Log Out” button at the most right of the navigation bar.	The system will go back to Login page.

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## 4.2 System test for Table and cell detection and text extraction and parsing System

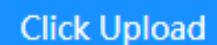
STC-04: Administrators or lecturers can add files from local.

<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can add file to system from local by drag the file, or manually select.
<b>Prerequisite</b>	The administrator or lecturers log in the system and at ParseFile page already.
<b>Test Steps</b>	<p>1. The administrator or lecturers drags the file in particular area, or manually select file</p> <div style="text-align: center; margin-top: 20px;">  <p>Drag the file here, Or manually select</p> </div> <p>2. The administrator or lecturers see the file name under upload panel.</p> <p> Midterm_Examination_Online_2-2563.pdf</p>

ID	Description	Input	Expected Result
STC-04.1	The administrator or lecturers upload file by drags the file in particular area.	Midterm_Examination_Online_2-2563.pdf	The system will display the file: "Midterm_Examination_Online_2-2563.pdf" under the upload panel.
STC-04.2	The administrator or lecturers upload file by manually select.	Midterm_Examination_Online_2-2563.pdf	<ol style="list-style-type: none"> <li>1. The system will display a file selection window.</li> <li>2. The system will display the file: "Midterm_Examination_Online_2-2563.pdf" under the upload panel.</li> </ol>

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**STC-05: Administrators or lecturers can upload file and parse the uploaded file.**

<b>Test Description</b>	The test case is used to test the administrators or lecturers can upload file and parse the uploaded file.
<b>Prerequisite</b>	The administrator or lecturers sees the file displayed on the page.
<b>Test Steps</b>	<p>1. The administrator or lecturers clicks the “Click Upload” button.</p>  <p>2. The administrator or lecturers see the process of file recognition. The process will be divided into:</p> <ul style="list-style-type: none"> <li>a. Being parse</li>  <li>b. Parse failed</li>  <li>c. Parse success</li>  </ul>

**Test data: Appendix B**

ID	Description	Input	Expected Result
STC-05.1	Upload PDF file.	Midterm_Examination_Online_2-2563.pdf	The system will be parsing file and “Being parse” button is shown.
STC-05.2	Upload files in .png format.	Midterm_Examination_Online_2-2563.png	The system will display a message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.
STC-05.3	Upload files in .xls format	Midterm_Examination_Online_2-2563.xls	The system will display a message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.
STC-05.4	Upload files size is exceeding max size.	Midterm_Examination_Online_2-2563.pdf	The system will display a message “the request was rejected because its size (Uploaded file real size) exceeds the configured maximum (15728640)” and “Parse failed” button is shown.

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<b>STC-05.5</b>	Upload empty pdf file.	Midterm_Examination_O nline_2-2563.pdf	The system will display a message “The file is empty” and “Parse failed” button is shown.
<b>STC-05.6</b>	Parse successfully.	-	The system will show message:” Parse success” and “Parse success” button, “Download Excel” button is shown.

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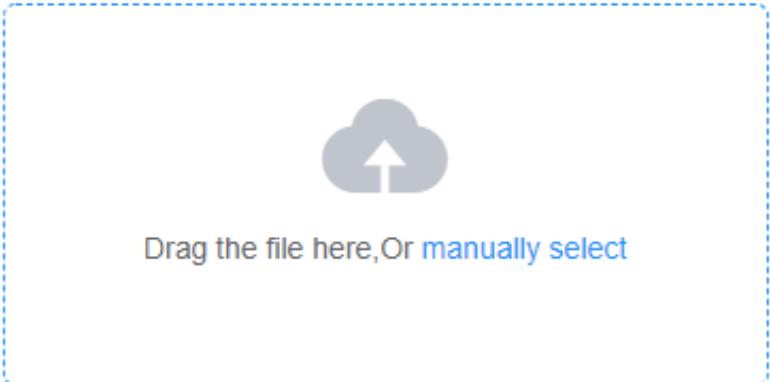
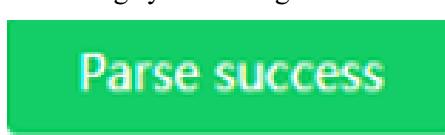
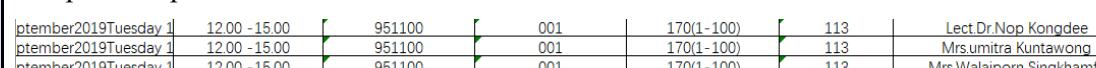
**STC-06: Administrators or lecturers can download parsed file.**

<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can download parsed file as excel.
<b>Prerequisite</b>	After the administrator or lecturers selecting the file to parsed and the system parses successfully.
<b>Test Steps</b>	<p>1. The administrator or lecturers clicks the “Download Excel” button.</p> 

<b>ID</b>	<b>Description</b>	<b>Input</b>	<b>Expected Result</b>
<b>STC-06.1</b>	No file was uploaded, or parsing failed.	-	The "Download Excel" button is banned, and cannot be clicked.
<b>STC-06.2</b>	The administrator or lecturers clicks the “Download Excel” button.	-	The system will download file as excel.

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### STC-07: Check parse result.

<b>Test Description</b>	The test case is used to test the contents of the downloaded Excel file and the uploaded PDF file.
<b>Prerequisite</b>	After downloading the parsed excel file.
<b>Test Steps</b>	<p>1. Drags file to the upload panel or manually select file.</p>  <p>2. Clicks the “Click Upload” button.</p>  <p>3. Waiting system recognition.</p>  <p>4. Clicks the “Download Excel” button.</p>  <p>5. Opens the parsed excel file.</p>  <p>6. Opens the uploaded pdf file.</p>

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	Tuesday 1, October 2019	12.00 - 15.00	951100	001	170(1- 100)	113	Lect.Dr.Nop Kongdee  Mrs.Sumitra Kuntawong  Mrs.Walaiporn Singkhamfu
7. Extract the same fields from the two files for comparison.							

ID	Description	Input	Expected Result
STC-07.1	Check whether the number of identified data columns is consistent.	“id = 30”	Data with id equal to 30 in PDF file.
STC-07.2	Check that the number of identified data is consistent	“Total rows = 94”	Excel file have total 94 rows.
STC-07.3	Check that the number of identified data columns is consistent	“Total columns = 7”	Excel file have total 7 columns.

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**STC-08: Calculate the recognition rate of the PDF being recognized.**

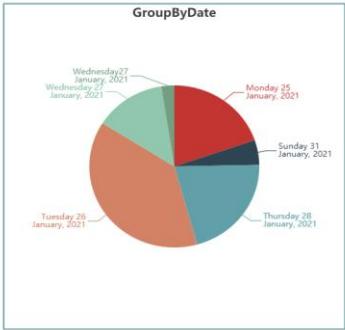
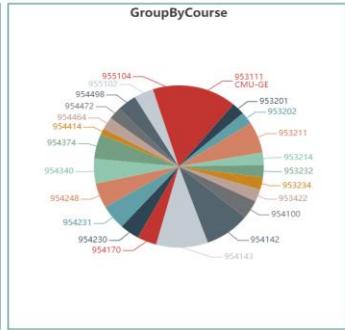
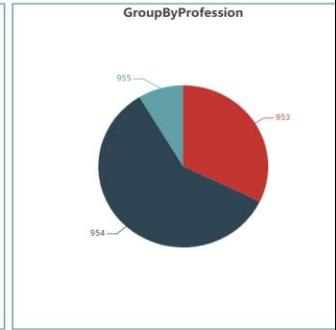
<b>Test Description</b>	The test case is used to test calculate the recognition rate of the PDF being recognized.
<b>Prerequisite</b>	After the administrator downloading the parsed excel file.
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Opens the parsed excel file.</li> <li>2. looks for missing parts of the file.</li> <li>3. Calculate the recognition rate of the file.</li> </ol>

<b>ID</b>	<b>Description</b>	<b>Input</b>	<b>Expected Result</b>
<b>STC-08.1</b>	Check for missing data.	“Midterm_Examination_On line_2-2563.pdf (94 groups of data)”	The recognition rate of the file is 100%.
<b>STC-08.2</b>	Check for misidentified data.	“Midterm_Examination_On line_2-2563.pdf (94 groups of data)”	The recognition rate of the file is Recognition rate = total number of completely correct identification / total number of actual identifications * 100%.

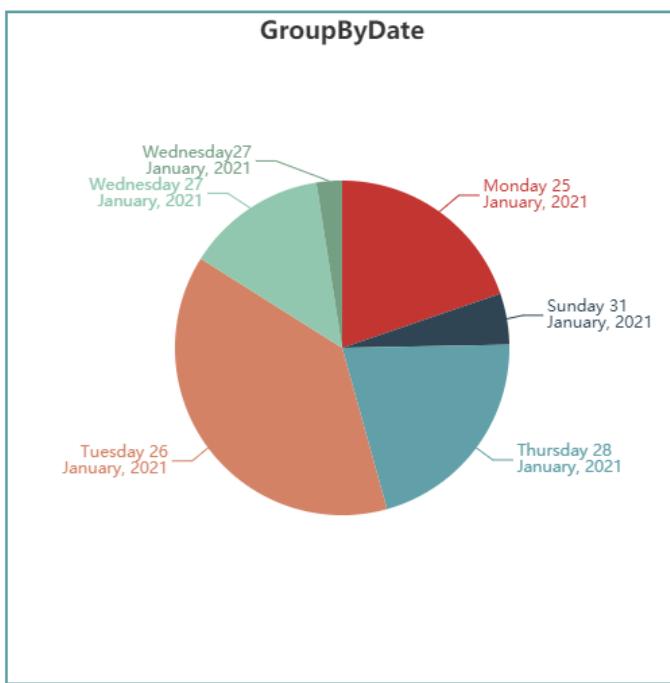
### 4.3 System test for Dashboard System

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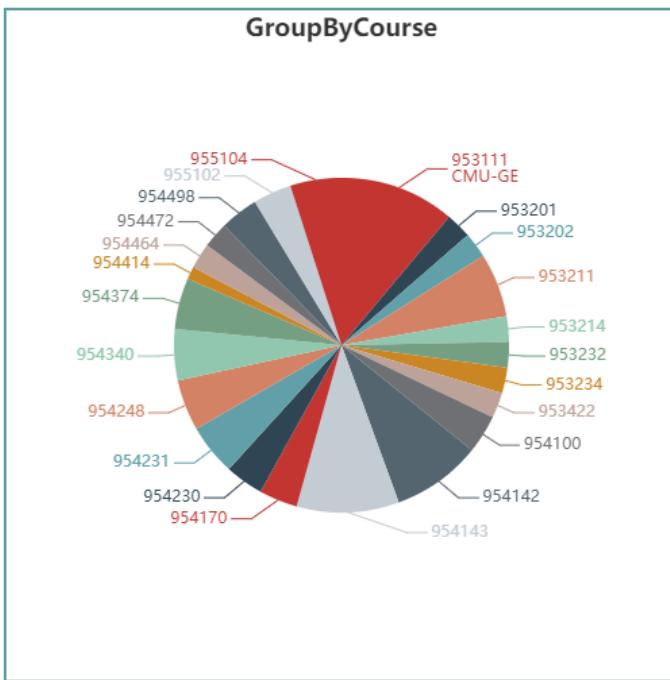
**STC-09: Administrators or lecturers can see the dashboard.**

<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can see the dashboard at Dashboard page.																																																										
<b>Prerequisite</b>	The administrator or lecturers log in the system and at Dashboard page already.																																																										
<b>Test Steps</b>	<p>1. The administrator or lecturers see the statistic title count.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Course Count:</p> <hr/> <p><b>28</b></p> </div> <div style="text-align: center;"> <p>Teacher Count:</p> <hr/> <p><b>55</b></p> </div> <div style="text-align: center;"> <p>Section Count:</p> <hr/> <p><b>14</b></p> </div> </div> <p>2. Administrator or lecturers see the pie chart.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><b>GroupByDate</b></p> <table border="1"> <thead> <tr> <th>Date</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Wednesday 27 January, 2021</td> <td>1</td> </tr> <tr> <td>Monday 25 January, 2021</td> <td>1</td> </tr> <tr> <td>Sunday 31 January, 2021</td> <td>1</td> </tr> <tr> <td>Tuesday 26 January, 2021</td> <td>1</td> </tr> <tr> <td>Thursday 28 January, 2021</td> <td>1</td> </tr> </tbody> </table> </div> <div style="text-align: center;">  <p><b>GroupByCourse</b></p> <table border="1"> <thead> <tr> <th>ID</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>955104</td> <td>1</td> </tr> <tr> <td>954498</td> <td>1</td> </tr> <tr> <td>954464</td> <td>1</td> </tr> <tr> <td>954374</td> <td>1</td> </tr> <tr> <td>954340</td> <td>1</td> </tr> <tr> <td>954248</td> <td>1</td> </tr> <tr> <td>954231</td> <td>1</td> </tr> <tr> <td>954230</td> <td>1</td> </tr> <tr> <td>954170</td> <td>1</td> </tr> <tr> <td>953111 CMU-GE</td> <td>1</td> </tr> <tr> <td>953201</td> <td>1</td> </tr> <tr> <td>953211</td> <td>1</td> </tr> <tr> <td>953214</td> <td>1</td> </tr> <tr> <td>953232</td> <td>1</td> </tr> <tr> <td>953244</td> <td>1</td> </tr> <tr> <td>953422</td> <td>1</td> </tr> <tr> <td>954100</td> <td>1</td> </tr> <tr> <td>954142</td> <td>1</td> </tr> </tbody> </table> </div> <div style="text-align: center;">  <p><b>GroupByProfession</b></p> <table border="1"> <thead> <tr> <th>Profession</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>955</td> <td>1</td> </tr> <tr> <td>953</td> <td>1</td> </tr> <tr> <td>954</td> <td>1</td> </tr> </tbody> </table> </div> </div> <p>a. Group by date</p>	Date	Count	Wednesday 27 January, 2021	1	Monday 25 January, 2021	1	Sunday 31 January, 2021	1	Tuesday 26 January, 2021	1	Thursday 28 January, 2021	1	ID	Count	955104	1	954498	1	954464	1	954374	1	954340	1	954248	1	954231	1	954230	1	954170	1	953111 CMU-GE	1	953201	1	953211	1	953214	1	953232	1	953244	1	953422	1	954100	1	954142	1	Profession	Count	955	1	953	1	954	1
Date	Count																																																										
Wednesday 27 January, 2021	1																																																										
Monday 25 January, 2021	1																																																										
Sunday 31 January, 2021	1																																																										
Tuesday 26 January, 2021	1																																																										
Thursday 28 January, 2021	1																																																										
ID	Count																																																										
955104	1																																																										
954498	1																																																										
954464	1																																																										
954374	1																																																										
954340	1																																																										
954248	1																																																										
954231	1																																																										
954230	1																																																										
954170	1																																																										
953111 CMU-GE	1																																																										
953201	1																																																										
953211	1																																																										
953214	1																																																										
953232	1																																																										
953244	1																																																										
953422	1																																																										
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Profession	Count																																																										
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954	1																																																										

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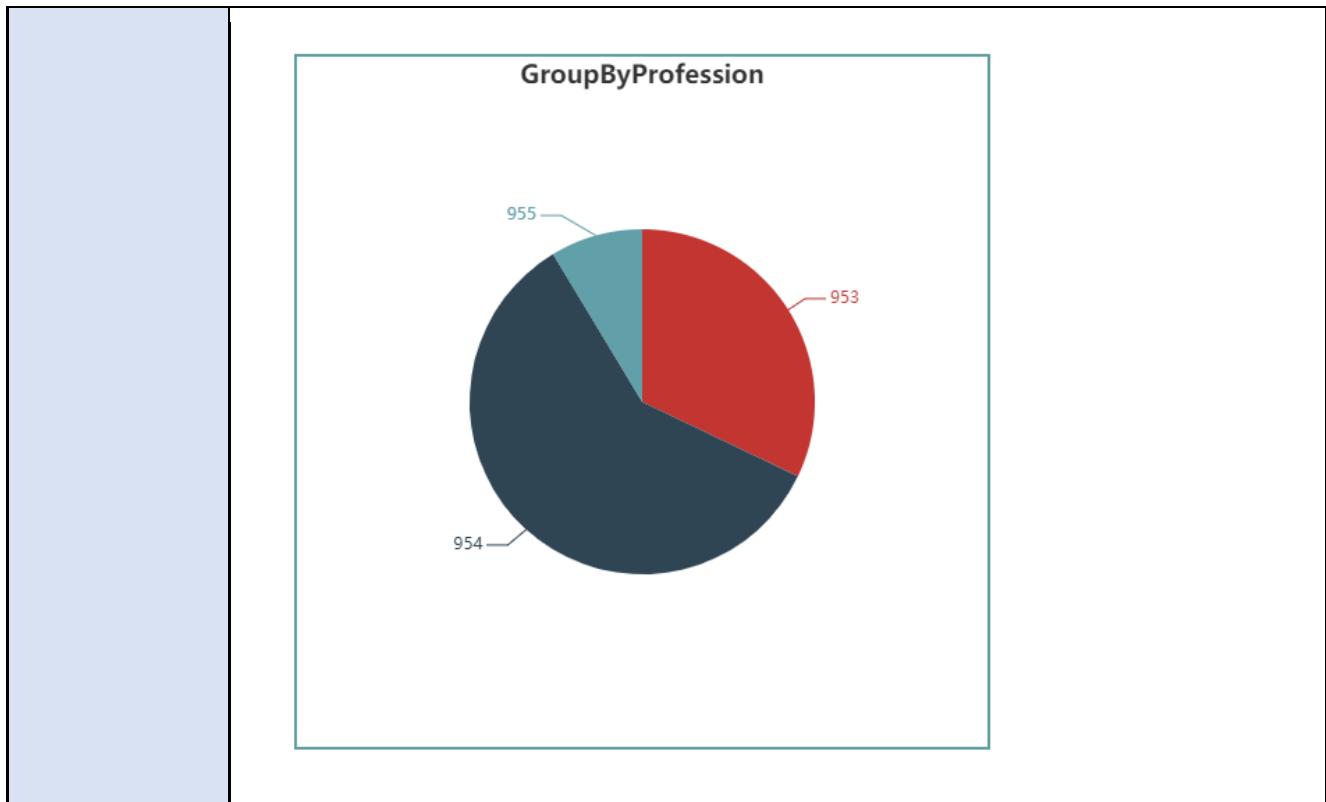


b. Group by course



c. Group by profession

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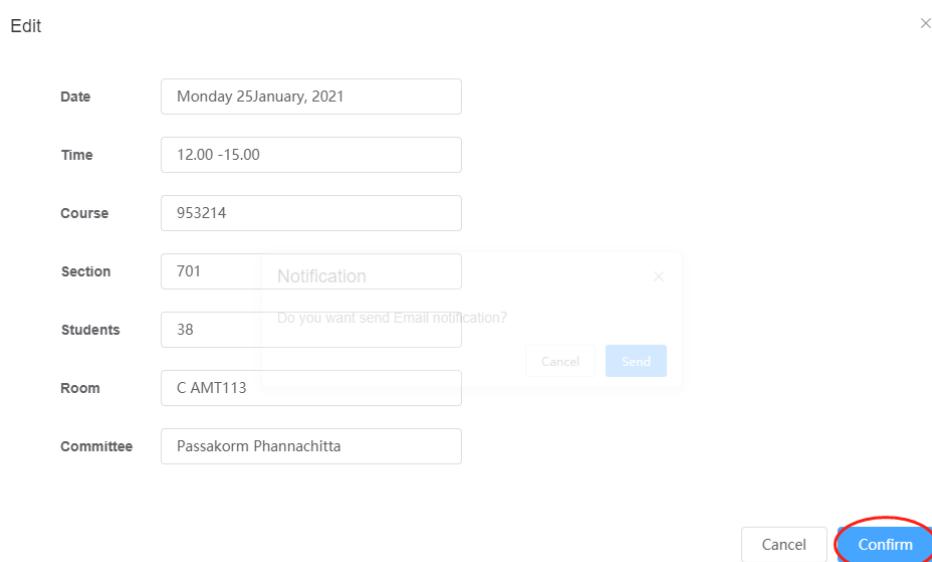
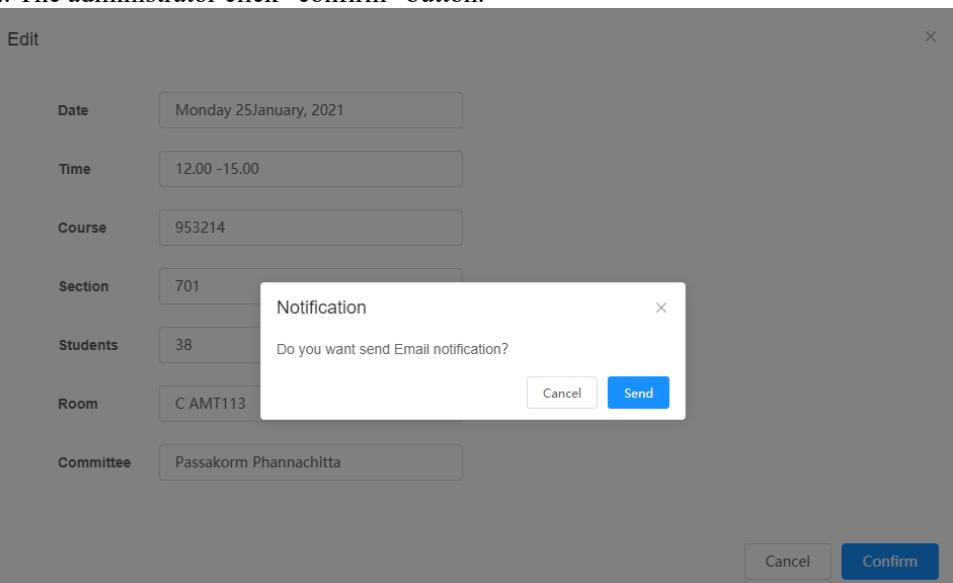
#### Test data: Appendix C

ID	Description	Input	Expected Result
STC-09.1	the statistic title count (course, committee, section)	-	The system will display a count table.
STC-09.2	the pie chart (Group by date, Group by course and Group by profession).	-	The system will display some pie chart.

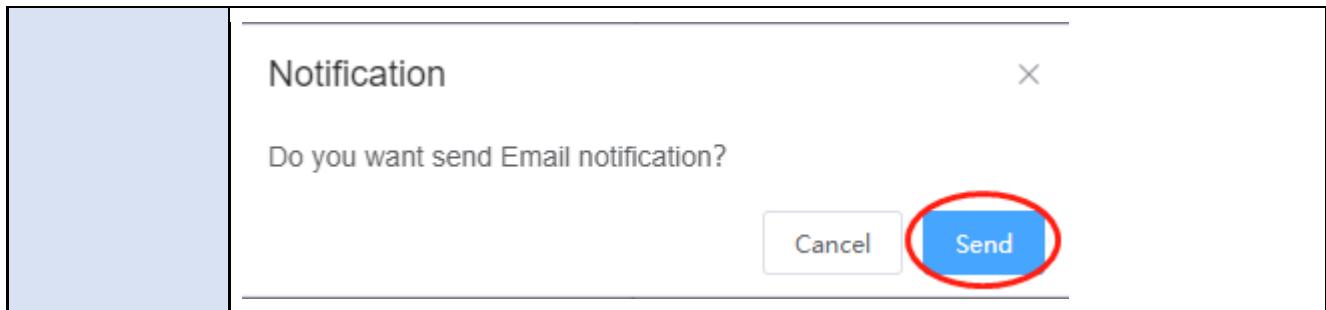
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## 4.4 System test for Notification System

**STC-10: Administrators can edit exam info and send email to lecturer.**

Test Description	The test case is used to test whether the administrators can edit exam info send email to lecturer.
Prerequisite	The administrator or lecturers log in the system and at ExamInfoList page already.
Test Steps	<p>1. The administrator edit exam info.</p>  <p>2. The administrator click “confirm” button.</p>  <p>3.. The administrator click “Send” button, confirm send.</p>

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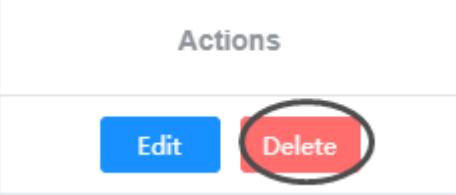
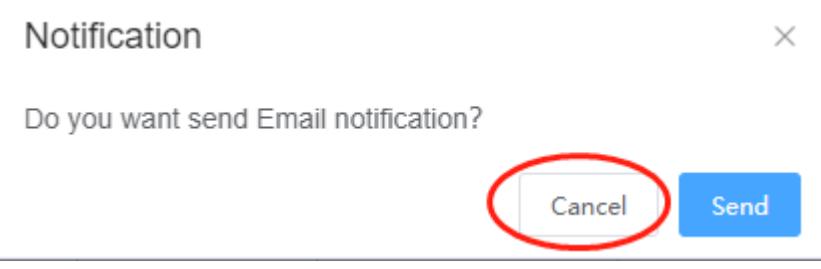
ID	Description	Input	Expected Result
STC-10.1	Modify the date, time, course, section, students, room, committee.	“Test 1”, “Test 2”, “Test 3”, “Test 4”, “Test 5”, “Test 6”, “Jiajun Tao”	Figure 1
STC-10.2	Modify the date, time, course, section, students, room, committee. And send email.	“Test 1”, “Test 2”, “Test 3”, “Test 4”, “Test 5”, “Test 6”, “Jiajun Tao”	Success Update Successfully

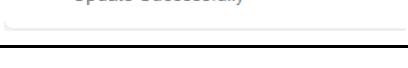
ID	FileRecordId	Date	Time	Course	Section	Students	Room	Committee	Actions
1789	6	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Jiajun Tao	<button>Edit</button> <button>Delete</button>

**Figure 1**

**STC-11: Administrators can delete exam info and send email to lecturer.**

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<b>Test Description</b>	The test case is used to test whether the administrators can delete exam info send email to lecturer.
<b>Prerequisite</b>	The administrator or lecturers log in the system and at ExamInfoList page already.
<b>Test Steps</b>	<p>1. The administrator delete exam info.</p>  <p>2. The administrator click “confirm” button.</p> 

ID	Description	Input	Expected Result
STC-11.1	Delete Exam info	-	
STC-11.2	Confirm send email.	-	

#### STC-12: Lecturer can receive email with exam information.

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<b>Test Description</b>	The test case is used to test whether lecturer can receive email with exam information
<b>Prerequisite</b>	The lecturer has email.
<b>Test Steps</b>	<p>1. The lecturer opens email.</p>  <p>2. The lecturer checks own email whether there is an email with exam information.</p> <p>This is your exam info :</p> <p>Translate message to: Chinese Simplified   Never translate from: English</p> <p>4 450333487@qq.com Thu 9/16/2021 6:00 PM To: LINGYU KONG</p> <p>Dear Lingyu Kong :</p> <p>This is your Exam schedule {"Time":"15.30 -\n18.30","Section":"001","Date":"Monday 25\nJanuary, 2021","fileRecordId":54,"Students":"129 Kong","id":4535,"Course":"953111\nCMU-GE","Room":"No booking\nclassroom"} Please arrange your time reasonably.</p> <p>Reply   Forward</p> <p>Your exam schedule has been delete :</p> <p>5 450333487@qq.com Fri 9/17/2021 1:05 PM To: LINGYU KONG</p> <p>Dear Lingyu Kong :</p> <p>This is your Exam schedule {"Time":"15.30 -\n18.30","Section":"003","Date":"Monday 25\nJanuary, 2021","fileRecordId":54,"Students":Kong","id":4537,"Course":"953111\nCMU-GE","Room":"No booking\nclassroom"} Please arrange your time reasonably.</p>

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ID	Description	Input	Expected Result
STC-12.1	The lecturer received edit exam information notification	-	<p>This is your exam info :</p> <p>Translate message to: Chinese Simplified   Never translate from:</p> <p>4 450333487@qq.com Thu 9/16/2021 6:00 PM To: LINGYU KONG Dear Lingyu Kong :  This is your Exam schedule ("Time":"15.30 -\n18.30", "Kong", "id":4535, "Course":"953111\nCMU-GE", "Room": Please arrange your time reasonably.  Reply   Forward</p>
STC-12.2	The lecturer received delete exam information notification	-	<p>Your exam schedule has been delete :</p> <p>Translate message to: Chinese Simplified   Never translate from:</p> <p>4 450333487@qq.com Fri 9/17/2021 1:05 PM To: LINGYU KONG Dear Lingyu Kong :  This is your Exam schedule ("Time":"15.30 -\n18.30", "Kong", "id":4537, "Course":"953111\nCMU-GE", "Room": Please arrange your time reasonably.</p>

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## Appendix A

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    "created_user": 1,
    "modified_user": 1
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    "modified_user": 1
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    "id": 5,
    "username": "lingyu_k@elearning.cmu.ac.th",
  }
}
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  }
]
}

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## Appendix B

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  "modified_user": 1
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        "modified_user": 1
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        "modified_user": 1
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```

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        "modified_user": 1
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```

        "modified_user": 1
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        "table_img_dir": "table_img_dir/1629018327577/",
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        "created_user": 1,
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    }
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## Appendix C

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    "modified_user": 6
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    "course": "954418",
    "section": "001",
    "students": "24",
    "room": "No booking\niclassroom",
    "committee": "Orawit Thinnukool",
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    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
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    "time": "15.30 -\n18.30",
    "course": "954418",
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    "students": "47",
    "room": "No booking\niclassroom"
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"room": "No booking\nclassroom",
"committee": "Khanita Tumphasuwan",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
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"committee": "Jirapat Wanitwattanakosol",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
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"date": "Tuesday 26\nJanuary, 2021",
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"course": "954230",
"section": "001",
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"room": "No booking\nclassroorn",
"committee": "Pakinee Ariya",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
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"modified_user": 6
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"students": "95",
"room": "No booking\nclassroorn",
"committee": "Kodchanitch Wannagoat",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
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"id": 3726,
"file_record_id": 46,

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    "students": "60",
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    "committee": "Waranya Mahanan",
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    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
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    "students": "60",
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    "committee": "Noppon Wongta",
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    "modified_time": "12/8/2021 15:37:10",
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    "students": "60",
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    "file_record_id": 46,
    "date": "Tuesday 26\nJanuary, 2021",
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    "course": "954142",
    "section": "001",
    "students": "30",
    "room": "IL C-B201",
    "committee": "Kittawaya Thongkoo",
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    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
    "modified_user": 6
  },
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    "section": "701",
    "students": "1",
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"room": "IL C-B201",
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"room": "IL C-B201",
"committee": "Kannika Daungcharone",
"created_time": "12/8/2021 15:37:10",
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"created_user": 6,
"modified_user": 6
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"students": "29",
"room": "IL C-B201",
"committee": "Somkeit Noamna",
"created_time": "12/8/2021 15:37:10",
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"created_user": 6,
"modified_user": 6
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{
"id": 3737,
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    "date": "Tuesday 26\nJanuary, 2021",
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    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
    "modified_user": 6
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    "created_user": 6,
    "modified_user": 6
},
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    "students": "27",
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    "committee": "Kititouch Suteeca",
    "created_time": "12/8/2021 15:37:10",
    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,

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    "modified_time": "12/8/2021 15:37:10",
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    "modified_user": 6
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    "room": "LIC-C307",
    "committee": "Suttinee Sawadsitng",
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    "created_user": 6,
    "modified_user": 6
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    "section": "701",
    "students": "32",
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    "committee": "Prompong Sugunnasil",
    "created_time": "12/8/2021 15:37:10",
    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
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    "file_record_id": 46,
    "date": "Tuesday 26\nJanuary, 2021",
    "time": "15.30 -\n18.30",
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    "section": "701",
    "students": "32",
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"room": "No bokin\nclassroom",
"committee": "Pree Thiengburanathum",
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"modified_user": 6
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"students": "29",
"room": "IL .C-B201",
"committee": "Sirikorm Santirojanakul",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
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"modified_user": 6
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"id": 3746,
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"room": "IL .C-B201",
"committee": "Jirapipat Thanyaphongphat",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
"created_user": 6,
"modified_user": 6
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"id": 3747,
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"modified_user": 6
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"id": 3748,
"file_record_id": 46,

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    "students": "28",
    "room": "IL .C-B201",
    "committee": "Chartchai Doung sa ard",
    "created_time": "12/8/2021 15:37:10",
    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
    "modified_user": 6
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    "section": "006",
    "students": "33",
    "room": "IL .C-B201",
    "committee": "Chartchai Doung sa ard",
    "created_time": "12/8/2021 15:37:10",
    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
    "modified_user": 6
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    "course": "954143",
    "section": "007",
    "students": "11",
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    "committee": "Chartchai Doung sa ard",
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    "modified_time": "12/8/2021 15:37:10",
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    "file_record_id": 46,
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    "students": "1",
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    "committee": "Chartchai Doung sa ard",
    "created_time": "12/8/2021 15:37:10",
    "modified_time": "12/8/2021 15:37:10",
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    "modified_user": 6
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    "section": "001",
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    "modified_time": "12/8/2021 15:37:10",
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    "modified_user": 6
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    "id": 3754,
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    "section": "001",
    "students": "46",
    "room": "ILC-B202",
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    "created_time": "12/8/2021 15:37:10",
    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
    "modified_user": 6
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    "section": "701",
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"committee": "Pattama Longani",
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"section": "701",
"students": "35",
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"committee": "Noppon Choosri",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
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"id": 3757,
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"time": "12.00 -\n15.00",
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"students": "30",
"room": "IL .C-B201",
"committee": "Boontarika Paphawasit",
"created_time": "12/8/2021 15:37:10",
"modified_time": "12/8/2021 15:37:10",
"created_user": 6,
"modified_user": 6
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"id": 3758,
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"date": "Wednesday 27\nJanuary, 2021",
"time": "12.00 -\n15.00",
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"section": "002",
"students": "94",
"room": "IL .C-B201",
"committee": "Orawit Thinnukool",
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"modified_time": "12/8/2021 15:37:10",
"created_user": 6,
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{
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"file_record_id": 46,

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    "students": "94",
    "room": "IL .C-B201",
    "committee": "Ratapol Wudhikarn",
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    "modified_time": "12/8/2021 15:37:10",
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    "modified_user": 6
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    "section": "002",
    "students": "94",
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    "committee": "Orawan Thong-ngarm",
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    "modified_time": "12/8/2021 15:37:10",
    "created_user": 6,
    "modified_user": 6
},
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    "course": "954170",
    "section": "001",
    "students": "47",
    "room": "IL .C-B202",
    "committee": "Khanita Tumphasuwan",
    "created_time": "12/8/2021 15:37:10",
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    "students": "64",
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    "committee": "Jirapat Wanitwattanakosol",
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    "modified_user": 6
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    "section": "003",
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"room": "IL_C-B202",
"committee": "Pachara Tinamas",
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{
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"committee": "Pattama Longani",
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"file_record_id": 46,

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    "section": "001\n701",
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    "room": "IL .C-C 303",
    "committee": "Aticha Sriti",
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    "created_user": 6,
    "modified_user": 6
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"modified_time": "12/8/2021 15:37:10",
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    "committee": "Kittawaya Thongkoo",
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    "room": "No\nbooking\nclassroom",
    "committee": "Napaporn Reeveerakul",
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    "modified_user": 6
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    "students": "78",
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    "created_user": 6,
    "modified_user": 6
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    "section": "002",
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    "room": "IL C-B201",
    "committee": "Suepphong Chernbumroong",
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    "modified_user": 6
  },
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    "students": "32",
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"created_user": 1,
"modified_user": 1
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{
"id": 5334,
"file_record_id": 62,

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    "date": "Monday 25\nJanuary, 2021",
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    "students": "129",
    "room": "No booking\nclassroom",
    "committee": "Prompong Sugunnasil",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
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    "section": "002",
    "students": "92",
    "room": "No booking\nclassroom",
    "committee": "Vimolboon Cherapanukom",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,

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    "modified_user": 1
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    "section": "004",
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    "committee": "Kodchanitch Wannagoat",
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    "created_user": 1,
    "modified_user": 1
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    "course": "953111\nCMU-GE",
    "section": "005",
    "students": "75",
    "room": "No booking\niclassroom",
    "committee": "Sirikorn Santirojanakul",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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"room": "No booking\nclassroom",
"committee": "Kannika Daungcharone",
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"section": "007",
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"committee": "Wantana Areeprayolkij",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
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"course": "953111\nCMU-GE",
"section": "701",
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"committee": "Kittitouch Suteeca",
"created_time": "29/9/2021 11:05:18",
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"created_time": "29/9/2021 11:05:18",
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{
"id": 5345,
"file_record_id": 62,

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    "date": "Monday 25\nJanuary, 2021",
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    "committee": "Khanita Tumphasawan",
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    "modified_time": "29/9/2021 11:05:18",
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    "students": "30",
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    "modified_time": "29/9/2021 11:05:18",
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    "section": "001",
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    "committee": "Pakinee Ariya",
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    "modified_time": "29/9/2021 11:05:18",
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    "modified_user": 1
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    "modified_time": "29/9/2021 11:05:18",
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    "section": "001",
    "students": "60",
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"committee": "Noppon Wongta",
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"students": "60",
"room": "LIC-C208",
"committee": "Thepparit Sinthamrongruk",
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"committee": "Pathathai Na Lumpoon",
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"id": 5356,
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    "date": "Tuesday 26\nJanuary, 2021",
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    "committee": "Kittawaya Thongkoo",
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    "students": "1",
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    "committee": "Kittawaya Thongkoo",
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    "modified_time": "29/9/2021 11:05:18",
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    "modified_user": 1
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    "students": "28",
    "room": "IL C-B201",
    "committee": "Kannika Daungcharone",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
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    "modified_user": 1
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    "committee": "Pattaraporn Khuwuthyakormn",
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    "modified_user": 1
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    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
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    "section": "006",
    "students": "15",
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    "committee": "Parot Ratnapinda",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
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    "modified_user": 1
  },
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"room": "No booking\nclassroom",
"committee": "Jirapat Wanitwattanakosol",
"created_time": "29/9/2021 11:05:18",
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"students": "27",
"room": "IL_C-B303",
"committee": "Kititouch Suteeca",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
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"id": 5365,
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"date": "Tuesday 26\nJanuary, 2021",
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"section": "701",
"students": "27",
"room": "IL_C-B303",
"committee": "Ratapol Wudhikarn",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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{
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"room": "LIC-C307",
"committee": "Suttinee Sawadsitng",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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{
"id": 5367,
"file_record_id": 62,

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    "modified_user": 1
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    "section": "701",
    "students": "32",
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    "committee": "Pree Thiengburanathum",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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{
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    "section": "001",
    "students": "29",
    "room": "IL .C-B201",
    "committee": "Sirikorm Santirojanakul",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "committee": "Jirapipat Thanyaphongphat",
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    "created_user": 1,

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    "committee": "Kodchanitch Wannagoat",
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    "modified_user": 1
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    "students": "28",
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    "course": "954143",
    "section": "005",
    "students": "28",
    "room": "IL .C-B201",
    "committee": "Chartchai Doung sa ard",
    "created_time": "29/9/2021 11:05:18",
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    "course": "954143",
    "section": "006",
    "students": "33",
    "room": ""
  }
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"room": "IL .C-B201",
"committee": "Chartchai Doung sa ard",
"created_time": "29/9/2021 11:05:18",
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"students": "11",
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"committee": "Chartchai Doung sa ard",
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"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
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"id": 5378,
"file_record_id": 62,
"date": "Tuesday 26\nJanuary, 2021",
"time": "15.30 -\n18.30",
"course": "954464",
"section": "001",
"students": "46",
"room": "ILC-B202",
"committee": "Kannika Daungcharone",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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"id": 5379,
"file_record_id": 62,
"date": "Wednesday 27\nJanuary, 2021",
"time": "12.00 .\n15.00",
"course": "953201",
"section": "701",
"students": "35",
"room": "IL .C-C205",
"committee": "Pattama Longani",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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{
"id": 5380,
"file_record_id": 62,

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    "modified_time": "29/9/2021 11:05:18",
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    "students": "30",
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    "committee": "Boontarika Paphawasit",
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    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "course": "954231",
    "section": "002",
    "students": "94",
    "room": "IL .C-B201",
    "committee": "Orawit Thinnukool",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "course": "954231",
    "section": "002",
    "students": "94",
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    "committee": "Ratapol Wudhikarn",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,

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    "modified_user": 1
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    "students": "94",
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    "modified_time": "29/9/2021 11:05:18",
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    "modified_user": 1
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    "course": "954170",
    "section": "001",
    "students": "47",
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    "committee": "Khanita Tumphasuwan",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "course": "954170",
    "section": "002",
    "students": "64",
    "room": "IL .C-B202",
    "committee": "Jirapat Wanitwattanakosol",
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    "modified_time": "29/9/2021 11:05:18",
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    "course": "954170",
    "section": "003",
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"room": "IL .C-B202",
"committee": "Pattaraporn Khuwuthyakorn",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
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"committee": "Phasit Charoenkwan",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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"id": 5389,
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"section": "002",
"students": "31",
"room": "IL_C-B204",
"committee": "Wijit Attakomal",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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"id": 5390,
"file_record_id": 62,
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"course": "954340",
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"students": "29",
"room": "IL_C-B204",
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"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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{
"id": 5391,
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    "date": "Wednesday 27\nJanuary, 2021",
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    "created_user": 1,
    "modified_user": 1
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    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "section": "001",
    "students": "100",
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    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "committee": "Jirawit Yanchinda",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,

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    "modified_user": 1
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    "modified_time": "29/9/2021 11:05:18",
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    "modified_user": 1
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    "students": "35",
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    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
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    "file_record_id": 62,
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    "time": "08.00 -\n11.00",
    "course": "952",
    "section": "001",
    "students": "35",
    "room": "ILC-B201",
    "committee": "Khanita Tumphasawan",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
  {
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    "file_record_id": 62,
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    "section": "701",
    "students": "28",
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  }
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"room": "CAMT\n112",
"committee": "Passakomn Phannachitta",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
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"modified_user": 1
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"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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"id": 5400,
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"committee": "Orawit Thinnukool",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
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"room": "No booking\nnclassroom",
"committee": "Somkeit Noamna",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
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{
"id": 5402,
"file_record_id": 62,

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    "date": "Thursday 28\nJanuary, 2021",
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    "committee": "Boontarika Paphawasit",
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    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "course": "954248",
    "section": "004",
    "students": "30",
    "room": "No booking\nclassroom",
    "committee": "Orawan Thong-ngarm",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
},
{
    "id": 5404,
    "file_record_id": 62,
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    "time": "15.30 -\n18.30",
    "course": "953211",
    "section": "001\n701",
    "students": "69 PiJ",
    "room": "IL .C-C 303",
    "committee": "Pattama Longani",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "file_record_id": 62,
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    "time": "15.30 -\n18.30",
    "course": "953211",
    "section": "001\n701",
    "students": "69 PiJ",
    "room": "IL .C-C 303",
    "committee": "Manaschai Aonon",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,

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    "modified_user": 1
  },
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    "file_record_id": 62,
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    "course": "953211",
    "section": "001\n701",
    "students": "69 PiJ",
    "room": "IL .C-C 303",
    "committee": "Patcharaphon Sribunthankul",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
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    "file_record_id": 62,
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    "time": "15.30 -\n18.30",
    "course": "953211",
    "section": "001\n701",
    "students": "69 PiJ",
    "room": "IL .C-C 303",
    "committee": "Thanat Walairacht",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
  {
    "id": 5408,
    "file_record_id": 62,
    "date": "Thursday 28\nJanuary, 2021",
    "time": "15.30 -\n18.30",
    "course": "953211",
    "section": "001\n701",
    "students": "69 PiJ",
    "room": "IL .C-C 303",
    "committee": "Aticha Sriti",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
  {
    "id": 5409,
    "file_record_id": 62,
    "date": "Thursday 28\nJanuary, 2021",
    "time": "15.30 -\n18.30",
    "course": "954411",
    "section": "002",
    "students": "30",
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"room": "IL .C-B201",
"committee": "Siravat Teerasoponpong",
"created_time": "29/9/2021 11:05:18",
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"created_user": 1,
"modified_user": 1
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"students": "30",
"room": "IL .C-B201",
"committee": "Jayakrit Hirisaija",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
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"id": 5411,
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"time": "12.00-\n15.00",
"course": "953102",
"section": "701",
"students": "54",
"room": "ILC-C304",
"committee": "Pree Thiengburanathum",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
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"id": 5412,
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"time": "12.00-\n15.00",
"course": "953102",
"section": "701",
"students": "54",
"room": "ILC-C304",
"committee": "Boontarika Paphawasit",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
{
"id": 5413,
"file_record_id": 62,

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    "date": "Friday 29\nJanuary, 2021",
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    "course": "954240",
    "section": "001",
    "students": "30",
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    "committee": "Pachara Tinamas",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
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    "file_record_id": 62,
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    "section": "002",
    "students": "18",
    "room": "IL C-B201",
    "committee": "Phasit Charoenkwan",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
},
{
    "id": 5415,
    "file_record_id": 62,
    "date": "Friday 29\nJanuary, 2021",
    "time": "15.30-\n18.30",
    "course": "954240",
    "section": "003",
    "students": "30",
    "room": "IL C-B201",
    "committee": "Kittawaya Thongkoo",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
},
{
    "id": 5416,
    "file_record_id": 62,
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    "time": "15.30-\n18.30",
    "course": "954240",
    "section": "004",
    "students": "26",
    "room": "IL C-B201",
    "committee": "Kittawaya Thongkoo",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,

```

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```

    "modified_user": 1
  },
  {
    "id": 5417,
    "file_record_id": 62,
    "date": "Friday 29\nJanuary, 2021",
    "time": "15.30-\n18.30",
    "course": "954240",
    "section": "005",
    "students": "8",
    "room": "IL C-B201",
    "committee": "Kittawaya Thongkoo",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
  {
    "id": 5418,
    "file_record_id": 62,
    "date": "Saturday 30\nJanuary, 2021",
    "time": "1200-\n15.00",
    "course": "954371",
    "section": "001",
    "students": "65",
    "room": "No\nbooking\\nclassroom",
    "committee": "Napaporn Reeveerakul",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
  {
    "id": 5419,
    "file_record_id": 62,
    "date": "Saturday 30\nJanuary, 2021",
    "time": "1200-\n15.00",
    "course": "954371",
    "section": "002",
    "students": "28",
    "room": "No\nbooking\\nclassroom",
    "committee": "Ratapol Wudhikarn",
    "created_time": "29/9/2021 11:05:18",
    "modified_time": "29/9/2021 11:05:18",
    "created_user": 1,
    "modified_user": 1
  },
  {
    "id": 5420,
    "file_record_id": 62,
    "date": "Saturday 30\nJanuary, 2021",
    "time": "1200-\n15.00",
    "course": "954371",
    "section": "003",
    "students": "41",
    "room": ""
  }
]

```

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```

"room": "No\nbooking\nclassroom",
"committee": "Ratapol Wudhikarn",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
{
"id": 5421,
"file_record_id": 62,
"date": "Sunday 31\nJanuary, 2021",
"time": "12.00 -\n15.00",
"course": "955104",
"section": "001",
"students": "78",
"room": "IL C-B201",
"committee": "Vimolboon Cherapanukorn",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
{
"id": 5422,
"file_record_id": 62,
"date": "Sunday 31\nJanuary, 2021",
"time": "12.00 -\n15.00",
"course": "955104",
"section": "002",
"students": "34",
"room": "IL C-B201",
"committee": "Suepphong Chernbumroong",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
},
{
"id": 5423,
"file_record_id": 62,
"date": "Sunday 31\nJanuary, 2021",
"time": "12.00 -\n15.00",
"course": "955104",
"section": "020",
"students": "32",
"room": "IL C-B201",
"committee": "Jirawit Yanchinda",
"created_time": "29/9/2021 11:05:18",
"modified_time": "29/9/2021 11:05:18",
"created_user": 1,
"modified_user": 1
}
}

```

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# **CHAPTER 7**

## **TEST RECORD**

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## CAMT Exam Dashboard with Tesseract

### TEST RECORD

By

Lingyu Kong 612115506

Jiajun Tao 612115503

BACHELOR OF SOFTWARE ENGINEERING PROGRAM

COLLEGE OF ARTS, MEDIA AND  
TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

Pree Thiengburanathum, PhD

## CAMT Exam Dashboard with Tesseract

Lingyu Kong 612115506

Jiajun Tao 612115503

THIS REPORT HAS BEEN APPROVED TO BE A PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE  
SOFTWARE ENGINEERING PROGRAM: COLLEGE OF  
ARTS MEDIA AND TECHNOLOGY

..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

## Document History

Version	History	Status	Date	Viewable	Editable	Responsible
Test Record_Version.1.docx	<b>Add</b> <ul style="list-style-type: none"><li>• Chapter 1</li><li>• Chapter 2</li></ul>	Draft	5 June , 2021	Advisor LK JT	LK JT	LK JT
Test Record_Version.2.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Chapter 1</li><li>• Chapter 2</li></ul>	Draft	15 June , 2021	Advisor LK JT	LK JT	LK JT
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Test Record_Version.4.docx	<b>Add</b> <ul style="list-style-type: none"><li>• Chapter 1</li><li>• Chapter 2</li></ul>	Draft	31 August, 2021	Advisor LK JT	LK JT	LK JT
Test Record_Version.5.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Chapter 1</li><li>• Chapter 2</li></ul>	Draft	10 September, 2021	Advisor LK JT	LK JT	LK JT
Test Record_Version.6.docx	<b>Add</b> <ul style="list-style-type: none"><li>• Chapter 3</li><li>• Chapter 4</li></ul>	Draft	15 September, 2021	Advisor LK JT	LK JT	LK JT
Test Record_Version.7.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Chapter 1</li><li>• Chapter 2</li></ul>	Draft	26 September, 2021	Advisor LK JT	LK JT	LK JT
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\*LK = Lingyu Kong

\*JT = Jiajun Tao

\* Advisor = Pree Thiengburanathum, PhD

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# **Chapter One**

## **Introduction**

### **1.1 Objectives**

The purpose of the Test Record is to record the results of each test case that is put forth by the Test Plan for the CAMT Exam Dashboard with Tesseract system, such as the expected results, actual results, and results after testing which are Pass and Fail. These test cases will be applied for the use cases of CAMT Exam Dashboard with Tesseract.

### **1.2 Scope**

This document includes the unit test cases and the system test cases of CAMT Exam Dashboard with Tesseract as well as their test results. The result of each test case includes the actual result and the result after testing, noted as Pass or Fail.

### **1.3 Acronyms and Definition**

#### **1.3.1 Acronyms**

UTC	Unit Test Case
UTR	Unit Test Record
STC	System Test Case
STR	System Test Record

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### 1.3.2 Definition

Name	Definition
Unit testing	A level of the software testing process where individual units/components of a software/system are tested. The purpose is to validate that each unit of the software performs as designed.
Test case	(1) A set of test inputs, execution conditions, and expected results developed for a particular objective, such as to exercise a particular program path or to verify compliance with a specific requirement. (2) Documentation specifying inputs predicted results and a set of execution conditions for a test item. [IEEE90]
System testing	A level of the software testing process where a complete, integrated system is tested in order to evaluate the compliance with the specified requirements.

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# **Chapter Two**

## **Test Procedure**

### **2.1 Test Responsibility**

Item	Responsibility
Unit test case	Jiajun Tao
Unit test record	Jiajun Tao
System test	Jiajun Tao
System test record	Jiajun Tao

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# Chapter Three

## Unit Testing

### 3.1 The Unit Test

#### Unit Test Case 001 (UTC-001):

**Method name:** login (String username, String password)

**Description:** This method is for validating “username”, and “password” whether they are match.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

#### Data for testing:

1.

```
"username": "admin",  
"password": "admin"
```

---

2.

```
"username": "test",  
"password": "test"
```

---

3.

```
"username": "admin",  
"password": "123"
```

---

4.

```
"username": "adminadmin",  
"password": "admin"
```

---

#### Record

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Username is empty.	“username or password not	“username or password not	Pass

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		match”	match”	
2	Password is empty.	“username or password not match”	“username or password not match”	Pass
3	Incorrect password.	“Username or password not match”	“Username or password not match”	Pass
4	Unregistered username.	“Username or password not match”	“Username or password not match”	Pass
5	Registered username and match password.	-	-	Pass

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## **Unit Test Case 002 (UTC-002):**

**Method name:** getInfo (Long userId)

**Description:** This method is for get the user's information form database.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

"userId: "0"

---

2.

"userId: "1"

---

3.

"userId: "2"

---

### **Record**

ID	Description	Expected Result	Actual Result	Pass/Fail
1	user enters the user id that wants to get the info.	“User (id=1, username=admin, password=admin, type=1)”	“User (id=1, username=admin, password=admin, type=1)”	Pass
2	user enters the user id that wants to get the info.	“User (id=2, username=test, password=test, type=2)”	“User (id=2, username=test, password=test, type=2)”	Pass
3	user enters the user id that not exist.	“user not found, id: 0”	“user not found, id: 0”	Pass

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## **Unit Test Case 003 (UTC-003):**

**Method name:** Mapper Test findByUsername (String username)

**Description:** This method is finding user information stored in the database by user name.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

"username": "admin"

---

2.

"username": "test",

---

3.

"username": "adminadmin"

---

### **Record**

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Username is empty.	“null”	“null”	Pass
2	Try username: "admin".	“User (id=1, username=admin, password=admin, type=1)”	“User (id=1, username=admin, password=admin, type=1)”	Pass
3	Try username: "test".	“User (id=2, username=test, password=test, type=2)”	“User (id=2, username=test, password=test, type=2)”	Pass
4	Try does not exist username: "adminadmin".	“null”	“null”	Pass

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## **Unit Test Case 004 (UTC-004):**

**Method name:** Mapper Test findById (Long id)

**Description:** This method is finding user information stored in the database by user id.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

"userId: "0"

---

2.

"userId: "1"

---

3.

"userId: "2"

---

### **Record**

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Try user id: "1".	“User (id=1, username=admin, password=admin, type=1)”	“User (id=1, username=admin, password=admin, type=1)”	Pass
2	Try user id: "2".	“User (id=2, username=test, password=test, type=2)”	“User (id=2, username=test, password=test, type=2)”	Pass
3	Try user id: "0".	“user not found, id: 0”	“user not found, id: 0”	Pass

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## **Unit Test Case 005 (UTC-005):**

**Method name:** handleExamTimeFile (String pdfFileName)

**Description:** This method is testing whether PDF files are recorded correctly.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

"pdfFileName: "1624870767266.pdf"

---

2.

"pdfFileName: "1624870767266.png"

---

3.

“pdfFileName: "1624944580150.jpg”

---

4.

“pdfFileName: "1624944580150.doc”

---

5.

“pdfFileName: "1624944580150.ppt”

---

6.

“pdfFileName: "1624944580150.xls”

---

7.

“pdfFileName: "1624944580150.pdf”

---

### **Record**

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Input a not recorded PDF file.	“File doesn't exist”	“File doesn't exist”	Pass

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2	PDF file name is empty.	“Value cannot be null”	“Value cannot be null”	Pass
3	Input a PNG format file.	“Invalid/Unknown/Unsupported format”	“Invalid/Unknown/Unsupported format”	Pass
4	Input a JPG format file.	“Invalid/Unknown/Unsupported format”	“Invalid/Unknown/Unsupported format”	Pass
5	Input a DOC format file.	“Invalid/Unknown/Unsupported format”	“Invalid/Unknown/Unsupported format”	Pass
6	Input a PPT format file.	“Invalid/Unknown/Unsupported format”	“Invalid/Unknown/Unsupported format”	Pass
7	Input a XLS format file.	“Invalid/Unknown/Unsupported format”	“Invalid/Unknown/Unsupported format”	Pass
8	Input a recorded PDF file.	-	-	Pass

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## Unit Test Case 006 (UTC-006):

**Method name:** get (Long id)

**Description:** This method is viewing the file record information with special ID from database.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

"pdfFileRecordId: "1"

---

2.

"pdfFileRecordId: "2"

---

3.

"pdfFileRecordId: "3"

---

### Record

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Try PDF file id: "1".	“FileRecord(id=1, pdfPath=pdf_dir/1624944580 150.pdf, pdfImgDir=pdf_img_dir/162 4944580150/, tableImgDir=table_img_dir/1 624944580150/, excelPath=excel_dir/162494 580150.xlsx)”	“FileRecord(id=1, pdfPath=pdf_dir/1624944580 150.pdf, pdfImgDir=pdf_img_dir/162 4944580150/, tableImgDir=table_img_dir/1 624944580150/, excelPath=excel_dir/162494 4580150.xlsx)”	Pass
2	Try PDF file id: "2".	“FileRecord(id=1, pdfPath=pdf_dir/1624940213 .pdf, pdfImgDir=pdf_img_dir/162 4940213/,	“FileRecord(id=1, pdfPath=pdf_dir/1624940213 .pdf, pdfImgDir=pdf_img_dir/162 4940213/,	Pass

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		tableImgDir=table_img_dir/1 624940213/, excelPath=excel_dir/1624940 213.xlsx)"	tableImgDir=table_img_dir/1 624940213/, excelPath=excel_dir/162494 0213.xlsx)"	
3	Input a not recorded PDF file id.	“no such fileRecord, id: 3”	“no such fileRecord, id: 3”	Pass

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## Unit Test Case 007 (UTC-007):

**Method name:** List ()

**Description:** This method is testing whether the system can get data from the Exam\_info table.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

“Limit: “3”, “Page”:1000”

---

2.

“Limit: “3”, “Page”:2”

---

3.

“Limit: “3”, “Page”:3”

---

### Test Case

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Out of database existing pages.	{ "total": 1651, "examInfoList": [ ], } }	{ "total": 1651, "examInfoList": [ ], } }	Pass
2	At database page 1, get three sets of data	"examInfoList": [ { "modifiedTime": 1629100078000,  "modifiedUser": 1, "Time": "12.00-\n15.00", } ]	"examInfoList": [ { "modifiedTime": 1629100078000,  "modifiedUser": 1, "Time": "12.00-\n15.00", } ]	Pass

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	<p>"Section": "", "Date": "Monday 16,\nAugust 2021",</p> <p>"fileRecordId": 16, "Students": "30", "Committee (Proctors)": "Arinya Pongwat",</p> <p>"createdTime": 1629100078000, "id": 1690, "Room": "C AMT\n418",</p> <p>"createdUser": 1 }, {</p> <p>"modifiedTime": 1629100078000,</p> <p>"modifiedUser": 1, "Time": "12.00-\n15.00", "Section": "", "Date": "Monday 16,\nAugust 2021",</p>	<p>"Section": ","", "Date": "Monday 16,\nAugust 2021",</p> <p>"fileRecordId": 16, "Students": "30", "Committee (Proctors)": "Arinya Pongwat",</p> <p>"createdTime": 1629100078000, "id": 1690, "Room": "C AMT\n418",</p> <p>"createdUser": 1 }, {</p> <p>"modifiedTime": 1629100078000,</p> <p>"modifiedUser": 1, "Time": "12.00-\n15.00", "Section": ","", "Date": "Monday 16,\nAugust 2021",</p>	
--	--	--	--

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	<p>"fileRecordId": 16,</p> <p>    "Students":</p> <p>    "30",</p> <p>    "Committee</p> <p>    (Proctors)": "Orawan</p> <p>    Thong-ngarm",</p> <p> </p> <p>    "createdTime":</p> <p>    1629100078000,</p> <p>    "id": 1691,</p> <p>    "Room": "C</p> <p>    AMT\n418",</p> <p> </p> <p>    "createdUser": 1</p> <p>    },</p> <p>    {</p> <p> </p> <p>    "modifiedTime":</p> <p>    1629100078000,</p> <p> </p> <p>    "modifiedUser": 1,</p> <p>    "Time":</p> <p>    "15.30-\n18.30",</p> <p>    "Section":</p> <p>    "",</p> <p>    "Date":</p> <p>    "Monday 16,\nAugust</p> <p>    2021",</p> <p> </p> <p>    "fileRecordId": 16,</p> <p>    "Students":</p> <p>    "30",</p> <p>    "Committee</p>	<p>"fileRecordId": 16,</p> <p>    "Students":</p> <p>    "30",</p> <p>    "Committee (Proctors)":</p> <p>    "Orawan Thong-ngarm",</p> <p> </p> <p>    "createdTime":</p> <p>    1629100078000,</p> <p>    "id": 1691,</p> <p>    "Room":</p> <p>    "C AMT\n418",</p> <p> </p> <p>    "createdUser": 1</p> <p>    },</p> <p>    {</p> <p> </p> <p>    "modifiedTime":</p> <p>    1629100078000,</p> <p> </p> <p>    "modifiedUser": 1,</p> <p>    "Time":</p> <p>    "15.30-\n18.30",</p> <p>    "Section":</p> <p>    "",</p> <p>    "Date":</p> <p>    "Monday 16,\nAugust</p> <p>    2021",</p> <p> </p> <p>    "fileRecordId": 16,</p> <p>    "Students":</p> <p>    "30",</p>	
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		<p>(Proctors)": "Arinya Pongwat",</p> <p>"createdTime": 1629100078000,</p> <p>    "id": 1692,</p> <p>    "Room": "C AMT\n418",</p> <p>    "createdUser": 1</p> <p>}</p> <p>].</p>	<p>"Committee (Proctors)": "Arinya Pongwat",</p> <p>"createdTime": 1629100078000,</p> <p>    "id": 1692,</p> <p>    "Room": "C AMT\n418",</p> <p>    "createdUser": 1</p> <p>}</p> <p>].</p>	
3	At database page 2, get three sets of data	<p>{</p> <p>    "modifiedTime": 1629100078000,</p> <p>    "modifiedUser": 1,</p> <p>        "Time": "08.00-\n11.00",</p> <p>        "Section": "004",</p> <p>        "Date": "Tuesday17,\nAugust 2021",</p> <p>    "fileRecordId": 16,</p> <p>        "Students": "30",</p> <p>        "Committee (Proctors)": "Thanut Walairat",</p> <p>    "createdTime":</p>	<p>{</p> <p>    "modifiedTime": 1629100078000,</p> <p>    "modifiedUser": 1,</p> <p>        "Time": "08.00-\n11.00",</p> <p>        "Section": "004",</p> <p>        "Date": "Tuesday17,\nAugust 2021",</p> <p>    "fileRecordId": 16,</p> <p>        "Students": "30",</p> <p>        "Committee (Proctors)": "Thanut Walairat",</p> <p>    "createdTime":</p>	Pass

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		<pre> 1629100078000,         "id": 1697,         "Room": "C AMT\n412",         "createdUser": 1     },     {         "modifiedTime": 1629100078000,         "modifiedUser": 1,         "Time": "08.00-\n11.00",         "Section": "020",         "Date": "Tuesday17,\nAugust 2021",         "fileRecordId": 16,         "Students": "22",         "Committee (Proctors)": "Pongtawan Sangswawang",         "createdTime": 1629100078000,         "id": 1698,         "Room": "C AMT\n412", </pre>	<pre> 1629100078000,         "id": 1697,         "Room": "C AMT\n412",         "createdUser": 1     },     {         "modifiedTime": 1629100078000,         "modifiedUser": 1,         "Time": "08.00-\n11.00",         "Section": "020",         "Date": "Tuesday17,\nAugust 2021",         "fileRecordId": 16,         "Students": "22",         "Committee (Proctors)": "Pongtawan Sangswawang",         "createdTime": 1629100078000,         "id": 1698,         "Room": "C AMT\n412", </pre>	
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	<pre>     "createdUser": 1         },         {     "modifiedTime":         1629100078000,     "modifiedUser": 1,         "Time":         "08.00-\n11.00",         "Section":         "001",         "Date":         "Tuesday17,\nAugust         2021",     "fileRecordId": 16,         "Students":         "61",         "Committee         (Proctors)": "Theparit         Sinthamrongrak",     "createdTime":         1629100078000,         "id": 1699,         "Room":         "CAMT\n316",     "createdUser": 1         }     ]. </pre>	<pre>     "createdUser": 1         },         {     "modifiedTime":         1629100078000,     "modifiedUser": 1,         "Time":         "08.00-\n11.00",         "Section":         "001",         "Date":         "Tuesday17,\nAugust         2021",     "fileRecordId": 16,         "Students":         "61",         "Committee (Proctors)": "Theparit         Sinthamrongrak",     "createdTime":         1629100078000,         "id": 1699,         "Room":         "CAMT\n316",     "createdUser": 1         }     ]. </pre>
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## Unit Test Case 008 (UTC-008):

**Method name:** remove ()

**Description:** This method is testing whether the system can delete data from the Exam\_info table and determine whether to send an email.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

Id"9999", isSendEmail "false"

---

2.

Id"1784", isSendEmail "false"

---

3.

Id"1783", isSendEmail "true"

---

### Test Case

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Input an id that does not exist and do not send email.	no such exam info	no such exam info	Pass
2	Get 1784 data.	ExamInfo(id=1784, fileRecordId=null, date= Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee= Pattama Longani)	ExamInfo(id=1784, fileRecordId=null, date= Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee= Pattama Longani)	Pass
3	Exam info id equal "1784" and do not send email.	no such exam info	no such exam info	Pass

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4	Get 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= Saturday 30, November2019, time=12.00 - 15.00, course= "954413", section=001, students=29, room=CAMT 114, committee= Arunothai Pongwat)	ExamInfo(id=1783, fileRecordId=null, date= Saturday 30, November2019, time=12.00 - 15.00, course= "954413", section=001, students=29, room=CAMT 114, committee= Arunothai Pongwat)	Pass
5	Exam info id equal “1783” and send email.	no such exam info exam files in the mailbox	no such exam info exam files in the mailbox	Pass

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## **Unit Test Case 009 (UTC-009):**

**Method name:** modify ()

**Description:** This method is testing whether the system can modify data from the Exam\_info table and determine whether to send an email.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

### **Data for testing:**

1.

Id:"1784L", Date:"TEST 1", isSendEmail "false"

---

2.

Id:"1784L", Time:"TEST 2", isSendEmail "false"

---

3.

Id:"1784L", Course:"TEST 3", isSendEmail "false"

---

4.

Id:"1784L", Section:"TEST 4", isSendEmail "false"

---

5.

Id:"1784L", Students:"TEST 5", isSendEmail "false"

---

6.

Id:"1784L", Room:"TEST 6", isSendEmail "false"

---

7.

Id:"1784L", Committee:"TEST 7", isSendEmail "false"

---

8.

Id:"1784L", Date:" ", Time:" ", Course:" ", Section:" ", Students:" ", Room:" ", Committee:" ", isSendEmail "true"

---

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## Test Case

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Modify the date of 1784 data and do not send email.	ExamInfo(id=1784, fileRecordId=null, date= TEST 1, time=null, course=null, section=null, students=null, room=null, committee=null)	ExamInfo(id=1784, fileRecordId=null, date= TEST 1, time=null, course=null, section=null, students=null, room=null, committee=null)	Pass
2	Modify the time of 1784 data and do not send email.	ExamInfo(id=1784, fileRecordId=null, date= null, time= TEST 2, course=null, section=null, students=null, room=null, committee=null)	ExamInfo(id=1784, fileRecordId=null, date= null, time= TEST 2, course=null, section=null, students=null, room=null, committee=null)	Pass
3	Modify the course of 1784 data and do not send email.	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course= TEST 3, section=null, students=null, room=null, committee=null)	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course= TEST 3, section=null, students=null, room=null, committee=null)	Pass
4	Modify the section of 1784 data and do not send email.	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section= TEST 4, students=null, room=null, committee=null)	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section= TEST 4, students=null, room=null, committee=null)	Pass
5	Modify the student of 1784 data and do not send email.	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students= TEST 5, room=null, committee=null)	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students= TEST 5, room=null, committee=null)	Pass
6	Modify the room of 1784 data and do not send email.	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null,	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null,	Pass

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		section=null, students=null, room= TEST 6, committee=null)	section=null, students=null, room= TEST 6, committee=null)	
7	Modify the committee of 1784 data and do not send email.	“Update successful”  ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students=null, room=null, committee= TEST 7)	“Update successful”  ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students=null, room=null, committee= TEST 7)	Pass
8	Modify all info to empty and do not send email.	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students=null, room=null, committee=null)	ExamInfo(id=1784, fileRecordId=null, date= null, time=null, course=null, section=null, students=null, room=null, committee=null)	Pass
9	Modify the 1784 exam info and send email.	ExamInfo(id=1784, fileRecordId=null, date= Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee=Jiajun Tao)	ExamInfo(id=1784, fileRecordId=null, date= Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee=Jiajun Tao)	Pass

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## **Unit Test Case 010 (UTC-010):**

**Method name:** getName()

**Description:** This method is testing whether the system can match the name of the committee with the corresponding email address.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

Username “Jiajun Tao”

---

2.

Username “Lingyu Kong”

---

### **Test Case**

ID	Description	Expected Result	Actual Result	Pass/Fail
1	The committee's name is “Jiajun Tao”	“User (id=5, username=Jiajun Tao, email=jiajun_tao@cmu.ac.th, type=0)”	“User (id=5, username=Jiajun Tao, email=jiajun_tao@cmu.ac.th, type=0)”	Pass
2	The committee's name is “Lingyu Kong”	“User (id=6, username=Lingyu kong, email=lingyu_k@cmu.ac.th, type=0)”	“User (id=6, username=Lingyu kong, email=lingyu_k@cmu.ac.th, type=0)”	Pass

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## **Unit Test Case 011 (UTC-011):**

**Method name:** getStatisticData ()

**Description:** This method is testing whether the system can get statistic data.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### **Test Case**

ID	Description	Expected Result	Actual Result	Pass/Fail
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1	The file record id is 1.	[ExamInfoStatisticResponse.Indicators WithCount(indicators=Friday 29 January, 2021, count=7), ExamInfoStatisticResponse.Indicators WithCount(indicators=Monday 25 January, 2021, count=16), ExamInfoStatisticResponse.Indicators WithCount(indicators=Saturday 30 January, 2021, count=3), ExamInfoStatisticResponse.Indicators WithCount(indicators=Sunday 31 January, 2021, count=4), ExamInfoStatisticResponse.Indicators WithCount(indicators=Thursday 28 January, 2021, count=19), ExamInfoStatisticResponse.Indicators WithCount(indicators=Tuesday 26 January, 2021, count=31), ExamInfoStatisticResponse.Indicators WithCount(indicators=Wednesday 27 January, 2021, count=11), ExamInfoStatisticResponse.Indicators WithCount(indicators=Wednesday27 January, 2021, count=2)] [ExamInfoStatisticResponse.Indicators WithCount(indicators=953102, count=2), ExamInfoStatisticResponse.Indicators WithCount(indicators=953111 CMU-GE, count=9), ExamInfoStatisticResponse.Indicators WithCount(indicators=953201, count=2), ExamInfoStatisticResponse.Indicators	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Friday 29 January, 2021, count=7), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Monday 25 January, 2021, count=16), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Saturday 30 January, 2021, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Sunday 31 January, 2021, count=4), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Thursday 28 January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Tuesday 26 January, 2021, count=31), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday 27 January, 2021, count=11), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday27 January, 2021, count=2)] [ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953102 count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953111 CMU-GE, count=9), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953201 count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=95310	Pass
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		<p>WithCount(indicators=955104, count=4)]</p> <p>[ExamInfoStatisticResponse.Indicators WithCount(indicators=953, count=28), ExamInfoStatisticResponse.Indicators WithCount(indicators=954, count=58), ExamInfoStatisticResponse.Indicators WithCount(indicators=955, count=7)]</p>	<p>torsWithCount(indicators=954411 , count=2),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954418 , count=3),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955102 , count=3),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955104 , count=4)]</p> <p>[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953, count=28),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=954, count=58),</p> <p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=955, count=7)]</p>	
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2	The file record id is 99.	“no such fileRecord, id: 99”	“no such fileRecord, id: 99”	Pass
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## Unit Test Case 012 (UTC-012):

**Method name:** testGetStatisticCount ()

**Description:** This method is testing whether the system can get statistic count.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### Test Case

ID	Description	Expected Result	Actual Result	Pass/Fail
1	The file record id is 1.	“ExamInfoStatisticCountResp onse(courseCount=27, sectionCount=13, teacherCount=54)”	“ExamInfoStatisticCountResp onse(courseCount=27, sectionCount=13, teacherCount=54)”	Pass
2	The file record id is 99.	“no such fileRecord, id: 99”	“no such fileRecord, id: 99”	Pass

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## **Unit Test Case 013 (UTC-013):**

**Method name:** Mapper Test testGetCourseCount ()

**Description:** This method is testing whether the system can get course count stored in the database.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### **Test Case**

ID	Description	Expected Result	Actual Result	Pass/Fail
1	The file record id is 1.	"27"	"27"	Pass
2	The file record id is 99.	"no such fileRecord, id: 99"	"no such fileRecord, id: 99"	Pass

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## **Unit Test Case 014 (UTC-014):**

**Method name:** Mapper Test testGetSectionCount ()

**Description:** This method is testing whether the system can get section count stored in the database.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### **Test Case**

ID	Description	Expected Result	Actual Result	Pass/Fail
1	The file record id is 1.	"13"	"13"	Pass
2	The file record id is 99.	"no such fileRecord, id: 99"	"no such fileRecord, id: 99"	Pass

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## **Unit Test Case 015 (UTC-015):**

**Method name:** Mapper Test testGetCommitteeCount ()

**Description:** This method is testing whether the system can get committee count stored in the database.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "99"

---

### **Test Case**

I D	Description	Expected Result	Actual Result	Pass/Fail
1	The file record id is 1.	"54"	"54"	Pass
2	The file record id is 99.	"no such fileRecord, id: 99"	"no such fileRecord, id: 99"	Pass

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## Unit Test Case 016 (UTC-016):

**Method name:** Mapper Test findById()

**Description:** This method is testing find Exam\_info stored in the database by id.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

Id: "1"

---

2.

Id: "9999"

---

### Test Case

ID	Description	Expected Result	Actual Result	Pass/Fail
1	The Exam_info id is 1.	“ExamInfo(id=1, fileRecordId=1, date=Monday 25 January, 2021, time=12.00 - 15.00, course=953214, section=701, students=38, room=C AMT 113, committee=Passakorm Phannachitta)”	“ExamInfo(id=1, fileRecordId=1, date=Monday 25 January, 2021, time=12.00 - 15.00, course=953214, section=701, students=38, room=C AMT 113, committee=Passakorm Phannachitta)”	Pass
2	The Exam_info id is 9999.	“null”	“null”	Pass

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## **Unit Test Case 017 (UTC-017):**

**Method name:** Mapper Test updateById()

**Description:** This method is testing update Exam\_info stored in the database by id.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

Id:"1783L", Date:"test date"

---

2.

Id:"1783L", Time:"test time"

---

3.

Id:"1783L", Course:"test course"

---

4.

Id:"1783L", Section:"test section"

---

5.

Id:"1783L", Students:"test students"

---

6.

Id:"1783L", Room:"test room"

---

7.

Id:"1783L", Committee:"test committee"

---

8.

Id:"1783L", Date:" ", Time:" ", Course:" ", Section:" ", Students:" ", Room:" ", Committee:" "

---

### **Test Case**

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ID	Description	Expected Result	Actual Result	Pass/Fail
1	Update the date of 1783 data.	ExamInfo(id=1783, fileRecordId=null, date=test date, time= null, course= null, section= null, students= null, room= null, committee= null)	ExamInfo(id=1783, fileRecordId=null, date=test date, time= null, course= null, section= null, students= null, room= null, committee= null)	Pass
2	Update the time of 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= null, time= test time, course= null, section= null, students= null, room= null, committee= null)	ExamInfo(id=1783, fileRecordId=null, date= null, time= test time, course= null, section= null, students= null, room= null, committee= null)	Pass
3	Update the course of 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= null, time=null, course= test course, section= null, students= null, room= null, committee= null)	ExamInfo(id=1783, fileRecordId=null, date= null, time=null, course= test course, section= null, students= null, room= null, committee= null)	Pass
4	Update the section of 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= test section, students= null, room= null, committee= null)	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= test section, students= null, room= null, committee= null)	Pass
5	Update the students of 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= test students, room= null, committee= null)	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= test students, room= null, committee= null)	Pass
6	Update the room of 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= test	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= test	Pass

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		room, committee= null)	room, committee= null)	
7	Update the committee of 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= null, committee= test committee)	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= null, committee= test committee)	Pass
8	Update all info to empty.	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= null, committee= null)	ExamInfo(id=1783, fileRecordId=null, date= null, time= null, course= null, section= null, students= null, room= null, committee= null)	Pass

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## **Unit Test Case 018 (UTC-018):**

**Method name:** Mapper Test deleteById()

**Description:** This method is testing delete Exam\_info stored in the database by id.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

Id"9999"

---

2.

Id"1783"

---

3.

Id"1784"

---

### **Test Case**

I D	Description	Expected Result	Actual Result	Pass/Fail
1	Input an id that does not exist.	0	0	Pass
2	Get 1784 data.	ExamInfo(id=1784, fileRecordId=null, date=Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee= Pattama Longani)	ExamInfo(id=1784, fileRecordId=null, date=Monday 25 January,2021, time=12.00 - 15.00, course=954100, section=001, students=30, room=CAMT 112, committee= Pattama Longani)	Pass

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3	Exam info id equal “1784”.	0	0	Pass
4	Get 1783 data.	ExamInfo(id=1783, fileRecordId=null, date= Saturday 30, November2019, time=12.00 - 15.00, course= "954413", section=001, students=29, room=CAMT 114, committee= Arunothai Pongwat)	ExamInfo(id=1783, fileRecordId=null, date= Saturday 30, November2019, time=12.00 - 15.00, course= "954413", section=001, students=29, room=CAMT 114, committee= Arunothai Pongwat)	Pass
5	Exam info id equal “1783”	0	0	Pass

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## Unit Test Case 019 (UTC-019):

**Method name:** Mapper Test groupByCourse()

**Description:** This method is testing the dashboard data resulting from the course, and that data is stored in the database.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "9999"

---

### Test Case

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Input a file record id equal 1.	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953102, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953111 CMU-GE, count=9), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953201, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953202, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953211, count=5),	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953102, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953111 CMU-GE, count=9), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953201, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953202, count=2), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=953211, count=5),	Pass

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		e.IndicatorsWithCount(indicators=954248, count=4), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954340, count=4), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954371, count=3), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954374, count=4), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954414, count=1), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954464, count=2), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=952, count=2), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954411, count=2), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954418, count=3), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=955102, count=3), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=955104, count=4)]	e.IndicatorsWithCount(indicators=954248, count=4), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954340, count=4), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954371, count=3), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954374, count=4), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954414, count=1), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954464, count=2), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=952, count=2), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954411, count=2), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=954418, count=3), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=955102, count=3), ExamInfoStatisticResponse e.IndicatorsWithCount(indicators=955104, count=4)]	
2	Input a file record id that does not exist.	“[ ]”	“[ ]”	Pass

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## Unit Test Case 020 (UTC-020):

**Method name:** Mapper Test groupByDate()

**Description:** This method is testing the dashboard data resulting from the date, and that data is stored in the database.

**Test date:** 08/10/2021

**Test by:** Jiajun Tao

**Data for testing:**

1.

fileRecordId: "1"

---

2.

fileRecordId: "9999"

---

### Test Case

ID	Description	Expected Result	Actual Result	Pass/Fail
1	Input a file record id equal 1.	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Friday 29 January, 2021, count=7), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Monday 25 January, 2021, count=16), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Saturday 30 January, 2021, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Sunday 31 January, 2021, count=4),	[ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Friday 29 January, 2021, count=7), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Monday 25 January, 2021, count=16), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Saturday 30 January, 2021, count=3), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Sunday 31 January, 2021, count=4),	Pass

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		<p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Thursday 28 January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Tuesday 26 January, 2021, count=31), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday 27 January, 2021, count=11), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday27 January, 2021, count=2)]</p>	<p>ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Thursday 28 January, 2021, count=19), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Tuesday 26 January, 2021, count=31), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday 27 January, 2021, count=11), ExamInfoStatisticResponse.IndicatorsWithCount(indicators=Wednesday27 January, 2021, count=2)]</p>	
2	Input a file record id that does not exist.	"[ ]"	"[ ]"	Pass

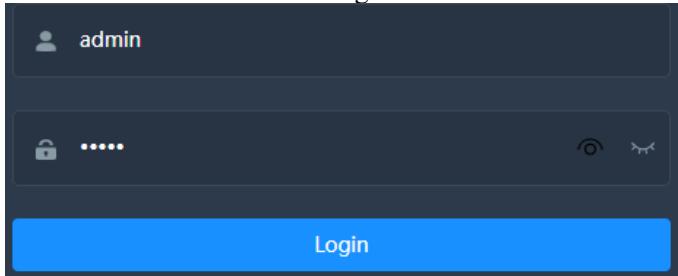
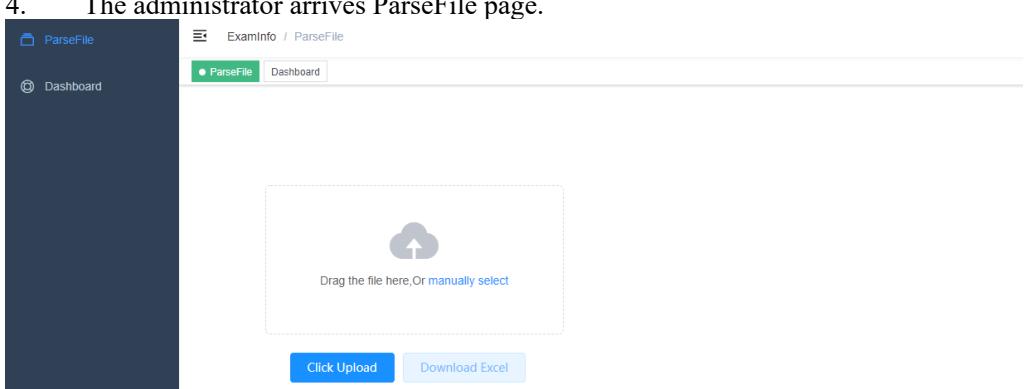
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# Chapter Four

## System Testing

### 4.1 System test for Authentication System

STC-01: Administrators can log in the system.

<b>Test Description</b>	The test case is used to test whether the administrators can log in the system by inputting username, and password. After the user input all fields correctly, administrators will go to: Parse page.
<b>Prerequisite</b>	The administrator opens the Login page in the system. - The administrator must have registered user account.
<b>Test Steps</b>	<ol style="list-style-type: none"><li>5. The administrator open url: <a href="https://localhost:9527">https://localhost:9527</a>.</li><li></li><li>6. The administrator input username and password.</li><li>7. The administrator clicks login button.</li></ol> <p>4. The administrator arrives ParseFile page.</p> 

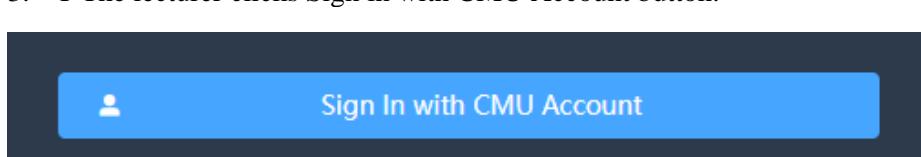
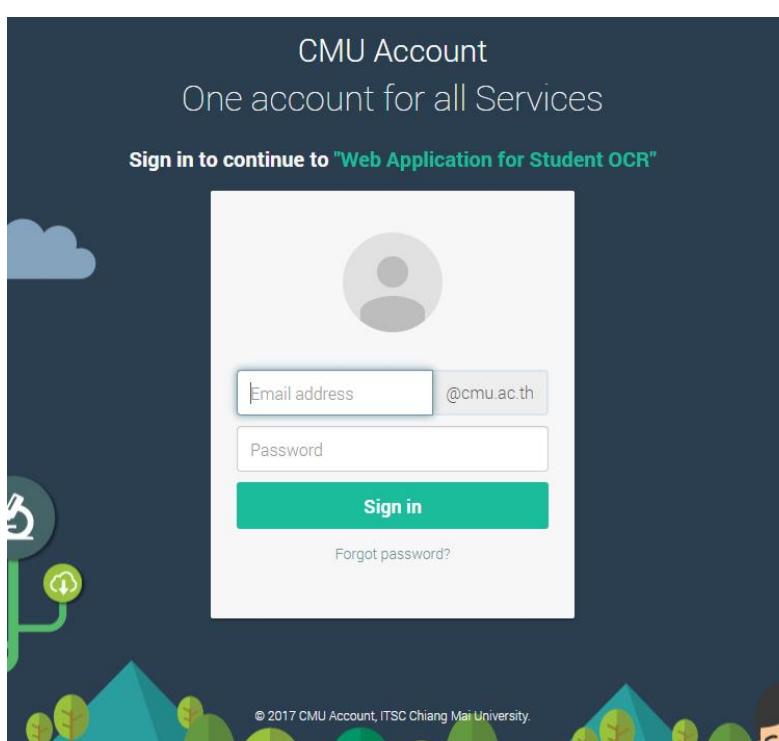
ID	Description	Expected Result	Actual Result	Pass/Fail
STC-01.1	Username is empty.	The system will display an error message “Please enter a username”	The system will display an error message “Please enter a username”	Pass

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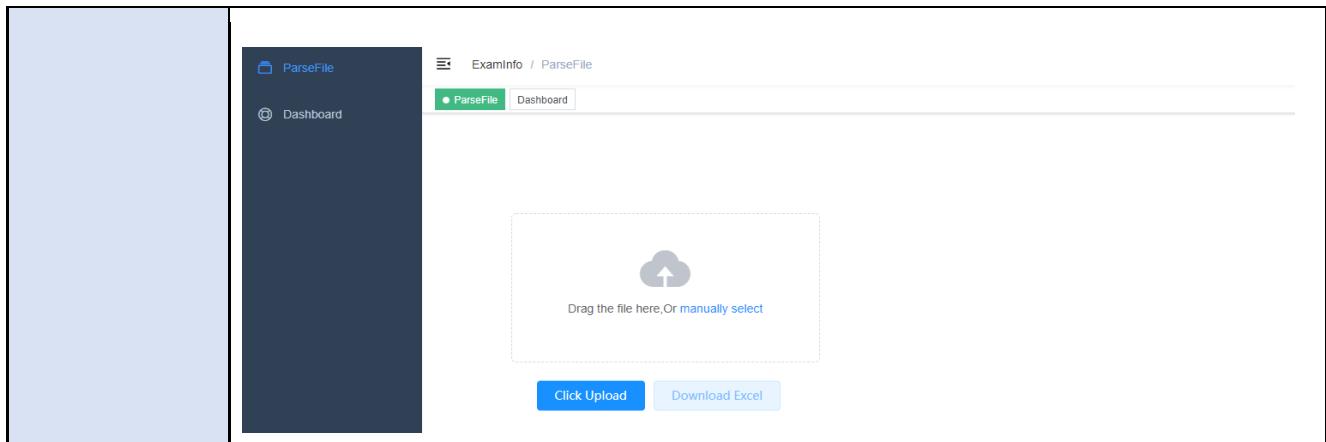
<b>STC-01.2</b>	Password is empty.	The system will display an error message “Please enter a password”	The system will display an error message “Please enter a password”	Pass
<b>STC-01.3</b>	Log into the web application with the incorrect password.	The system will display an error message “username or password not match”	The system will display an error message “username or password not match”	Pass
<b>STC-01.4</b>	Log into the web application with an unregistered username.	The system will display a toast error message "username or password not match"	The system will display a toast error message "username or password not match"	Pass
<b>STC-01.5</b>	Log into the web application with a registered administrator account.	The system will direct into the parseFile page and show the user type and user name in the upper right corner.	The system will direct into the parseFile page and show the user type and user name in the upper right corner..	Pass

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**STC-02: Lecturers can log in the system.**

<b>Test Description</b>	The test case is used to test whether the lecturers can log in the system by inputting username, and password. After the user input all fields correctly, lecturers will go to: Parse page.
<b>Prerequisite</b>	A lecturer opens the Login page in the system. - The lecturer must have registered CMU account.
<b>Test Steps</b>	<p>2. The lecturer open url: <a href="http://localhost:9527/">http://localhost:9527/</a></p>  <p>3. The lecturer clicks Sign in with CMU Account button.</p>  <p>4. The lecturer input username and password.</p>  <p>5. The lecturer arrives parseFile page.</p>

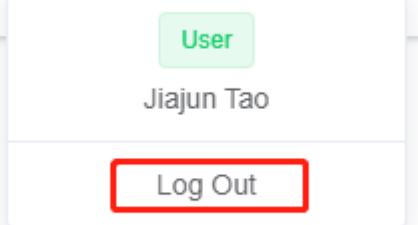
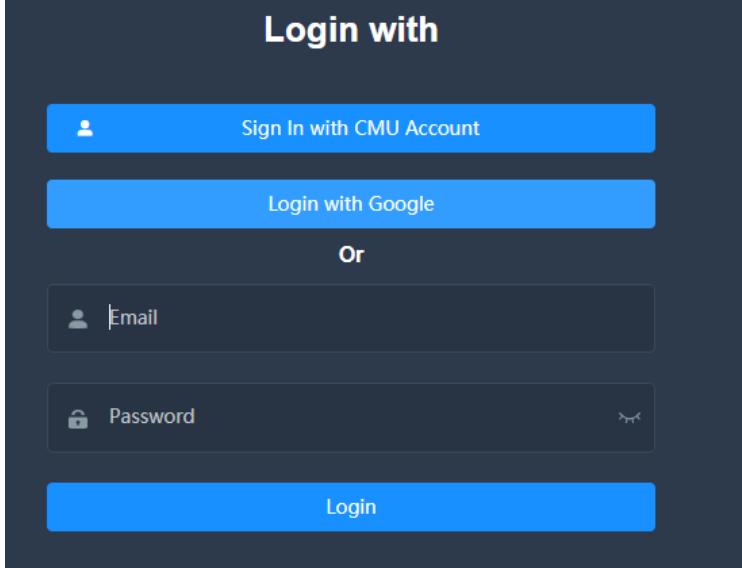
<b>Document Name</b>	CAMT Exam Dashboard with Tesseract _Test _Record_V.8	<b>Owner</b>	Lingyu Kong Jiajun Tao	<b>Page</b>	384/420
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ID	Description	Expected Result	Actual Result	Pass/Fail
STC-02.1	Username is empty.	The system will display an error message "Please enter a username"	The system will display an error message "Please enter a username"	Pass
STC-02.2	Password is empty.	The system will display an error message "Please enter a password"	The system will display an error message "Please enter a password"	Pass
STC-02.3	Log into the system with the incorrect password.	The system will display an error message "username or password not match"	The system will display an error message "username or password not match"	Pass
STC-02.4	Log into the system with an unregistered username.	The system will display a toast error message "username or password not match"	The system will display a toast error message "username or password not match"	Pass
STC-02.5	Log into the system with a registered CMU account.	The system will back to Login page, and show the massage " Logging in, please wait a moment" than direct into the parseFile page, show the user type and user name in the upper right corner.	The system will back to Login page, and show the massage " Logging in, please wait a moment" than direct into the parseFile page, show the user type and user name in the upper right corner.	Pass

### STC-03: Administrators or lecturers can logout from the system.

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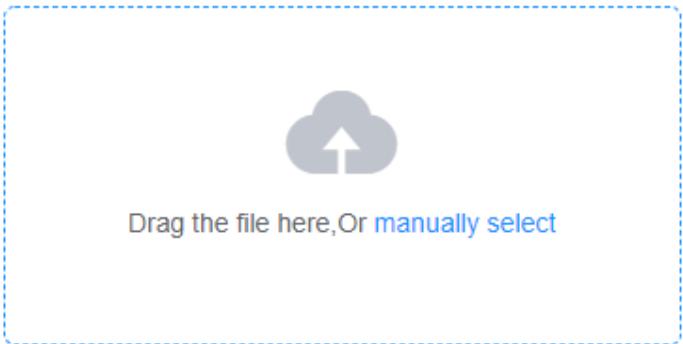
<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can log out from the system by clicking the “Log Out” button at the most right of the navigation bar.
<b>Prerequisite</b>	The administrators or lecturers already login the system.
<b>Test Steps</b>	<p>1. The administrators or lecturers clicking the “Log Out” button at the most right of the navigation bar.</p>  <p>2. The administrators or lecturers redirect to the Login page.</p> 

ID	Description	Expected Result	Actual Result	Pass/Fail
STC-03.1	The administrators or lecturers already login the system.	The system will go back to Login page.	The system will go back to Login page.	Pass

## 4.2 System test for Table and cell detection and text extraction and parsing System

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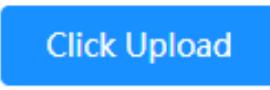
**STC-04: Administrators or lecturers can add files from local.**

<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can add file to system from local by drag the file, or manually select.
<b>Prerequisite</b>	The administrator or lecturers log in the system and at ParseFile page already.
<b>Test Steps</b>	<p>1. The administrator or lecturers drags the file in particular area, or manually select file.</p>  <p>2. The administrator or lecturers see the file name under upload panel.</p> 

ID	Description	Expected Result	Actual Result	Pass/Fail
STC-04.1	The administrator or lecturers upload file by drags the file in particular area.	<p>The system will display the file:" Midterm_Examination_Online_2- 2563.pdf" under the upload panel.</p>	<p>The system will display the file:" Midterm_Examination_Online_2- 2563.pdf" under the upload panel.</p>	Pass
STC-04.2	The administrator or lecturers upload file by manually select.	<p>1. The system will display a file selection window. 2. The system will display the file:" Midterm_Examination_Online_2- 2563.pdf" under the upload panel.</p>	<p>1. The system will display a file selection window. 2. The system will display the file:" Midterm_Examination_Online_2- 2563.pdf" under the upload panel.</p>	Pass

**STC-05: Administrators or lecturers can upload file and parse the uploaded file.**

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<b>Test Description</b>	The test case is used to test the administrators or lecturers can upload file and parse the uploaded file.
<b>Prerequisite</b>	The administrator or lecturers sees the file displayed on the page.
<b>Test Steps</b>	<p>1. The administrator or lecturers clicks the “Click Upload” button.</p>  <p>2. The administrator or lecturers see the process of file recognition. The process will be divided into:</p> <ul style="list-style-type: none"> <li>a. Being parse</li>  <li>b. Parse failed</li>  <li>c. Parse success</li> </ul>

ID	Description	Expected Result	Actual Result	Pass/Fail
STC-05.1	Upload PDF file.	The system will be parsing file and “Being parse” button is shown.	The system will be parsing file and “Being parse” button is shown.	Pass
STC-05.2	Upload files in .png format.	The system will display a message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.	The system will display a message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.	Pass
STC-05.3	Upload files in .xls format	The system will display a message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.	The system will display a message “file type does not meet the requirement, only is application/pdf” and “Parse failed” button is shown.	Pass
STC-05.4	Upload files size is exceeding max size.	The system will display a message “the request was rejected because its size (Uploaded file real size) exceeds the configured maximum (15728640)”and	The system will display a message “the request was rejected because its size (Uploaded file real size) exceeds the configured maximum (15728640)”and	Pass

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		“Parse failed” button is shown.	“Parse failed” button is shown.	
STC-05.5	Upload empty pdf file.	The system will display a message “The file is empty” and “Parse failed” button is shown.	The system will display a message “The file is empty” and “Parse failed” button is shown.	Pass
STC-05.6	Parse successfully.	The system will show message:” Parse success” and “Parse success” button, “Download Excel” button is shown.	The system will show message:” Parse success” and “Parse success” button, “Download Excel” button is shown.	Pass

#### STC-06: Administrators or lecturers can download parsed file.

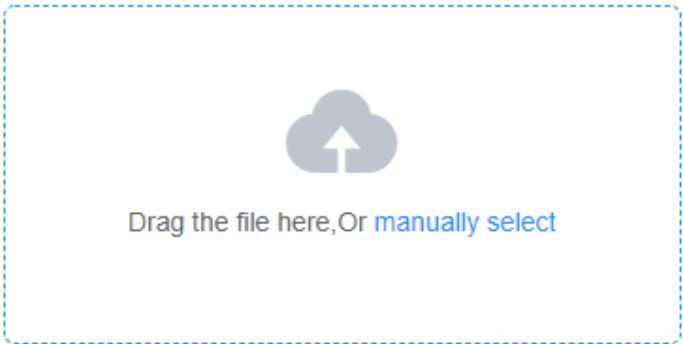
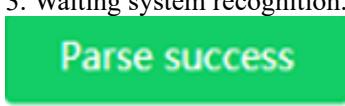
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<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can download parsed file as excel.
<b>Prerequisite</b>	After the administrator or lecturers selecting the file to parsed and the system parses successfully.
<b>Test Steps</b>	<p>1. The administrator or lecturers clicks the “Download Excel” button.</p> 

<b>ID</b>	<b>Description</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass/Fail</b>
<b>STC-06.1</b>	No file was uploaded, or parsing failed.	The "Download Excel" button is banned, and cannot be clicked.	The "Download Excel" button is banned, and cannot be clicked.	Pass
<b>STC-06.2</b>	The administrator or lecturers clicks the “Download Excel” button.	The system will download file as excel.	The system will download file as excel.	Pass

### STC-07: Check parse result.

<b>Document Name</b>	CAMT Exam Dashboard with Tesseract _Test _Record_V.8	<b>Owner</b>	Lingyu Kong Jiajun Tao	<b>Page</b>	390/420
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<b>Test Description</b>	The test case is used to test the contents of the downloaded Excel file and the uploaded PDF file.																																										
<b>Prerequisite</b>	After downloading the parsed excel file.																																										
<b>Test Steps</b>	<p>1. Drags file to the upload panel or manually select file.</p>  <p>2. Clicks the “Click Upload” button.</p>  <p>3. Waiting system recognition.</p>  <p>4. Clicks the “Download Excel” button.</p>  <p>5. Opens the parsed excel file.</p> <table border="1"> <tr> <td>ptember2019Tuesday 1</td> <td>12.00 - 15.00</td> <td>951100</td> <td>001</td> <td>170(1-100)</td> <td>113</td> <td>Lect.Dr.Nop Kongdee</td> </tr> <tr> <td>ptember2019Tuesday 1</td> <td>12.00 - 15.00</td> <td>951100</td> <td>001</td> <td>170(1-100)</td> <td>113</td> <td>Mrs.Sumitra Kuntawong</td> </tr> <tr> <td>ptember2019Tuesday 1</td> <td>12.00 - 15.00</td> <td>951100</td> <td>001</td> <td>170(1-100)</td> <td>113</td> <td>Mrs.Walaiporn Singkhamfu</td> </tr> </table> <p>6. Opens the uploaded pdf file.</p> <table border="1"> <tr> <td>Tuesday 1, October 2019</td> <td>12.00 - 15.00</td> <td>951100</td> <td>001</td> <td>170(1- 100)</td> <td>113</td> <td>Lect.Dr.Nop Kongdee</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Mrs.Sumitra Kuntawong</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Mrs.Walaiporn Singkhamfu</td> </tr> </table> <p>7. Extract the same fields from the two files for comparison.</p>	ptember2019Tuesday 1	12.00 - 15.00	951100	001	170(1-100)	113	Lect.Dr.Nop Kongdee	ptember2019Tuesday 1	12.00 - 15.00	951100	001	170(1-100)	113	Mrs.Sumitra Kuntawong	ptember2019Tuesday 1	12.00 - 15.00	951100	001	170(1-100)	113	Mrs.Walaiporn Singkhamfu	Tuesday 1, October 2019	12.00 - 15.00	951100	001	170(1- 100)	113	Lect.Dr.Nop Kongdee							Mrs.Sumitra Kuntawong							Mrs.Walaiporn Singkhamfu
ptember2019Tuesday 1	12.00 - 15.00	951100	001	170(1-100)	113	Lect.Dr.Nop Kongdee																																					
ptember2019Tuesday 1	12.00 - 15.00	951100	001	170(1-100)	113	Mrs.Sumitra Kuntawong																																					
ptember2019Tuesday 1	12.00 - 15.00	951100	001	170(1-100)	113	Mrs.Walaiporn Singkhamfu																																					
Tuesday 1, October 2019	12.00 - 15.00	951100	001	170(1- 100)	113	Lect.Dr.Nop Kongdee																																					
						Mrs.Sumitra Kuntawong																																					
						Mrs.Walaiporn Singkhamfu																																					

ID	Description	Expected Result	Actual Result	Pass/Fail
STC-07.1	Check whether the number of identified data columns is consistent.	Data with id equal to 30 in PDF file.	Data with id equal to 30 in PDF file.	Pass
STC-07.2	Check that the number of identified data rows is consistent	Excel file have total 94 rows.	Excel file have total 94 rows.	Pass

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<b>STC-07.3</b>	Check that the number of identified data columns is consistent	Excel file have total 7 columns.	Excel file have total 7 columns.	Pass
-----------------	--	----------------------------------	----------------------------------	------

**STC-08: Calculate the recognition rate of the PDF being recognized.**

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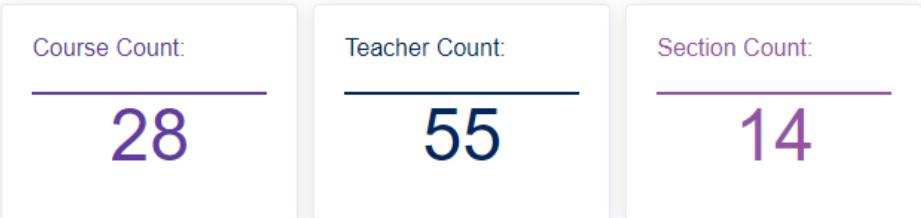
<b>Test Description</b>	The test case is used to test calculate the recognition rate of the PDF being recognized.
<b>Prerequisite</b>	After the administrator downloading the parsed excel file.
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Opens the parsed excel file.</li> <li>2. looks for missing parts of the file.</li> <li>3. Calculate the recognition rate of the file.</li> </ol>

<b>ID</b>	<b>Description</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass/Fail</b>
<b>STC-08.1</b>	Check for missing data.	The recognition rate of the file is 100%. 94 group of data.	The recognition rate of the file is 100%. 94 group of data.	Pass
<b>STC-08.2</b>	Check for misidentified data.	The recognition rate of the file is Recognition rate = total number of completely correct identification / total number of actual identifications * 100%.	The recognition rate of the file is Recognition rate = total number of completely correct identification / total number of actual identifications * 100%.	Pass

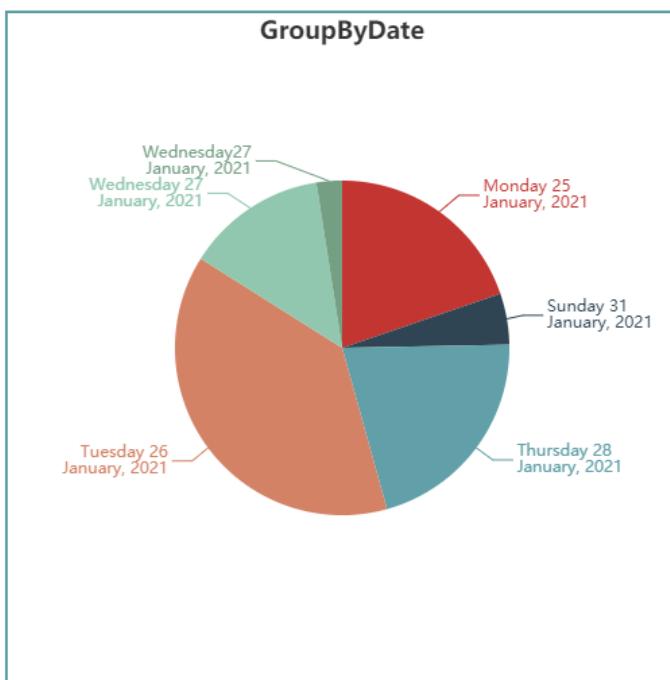
## 4.3 System test for Dashboard System

**STC-09: Administrators or lecturers can see the dashboard.**

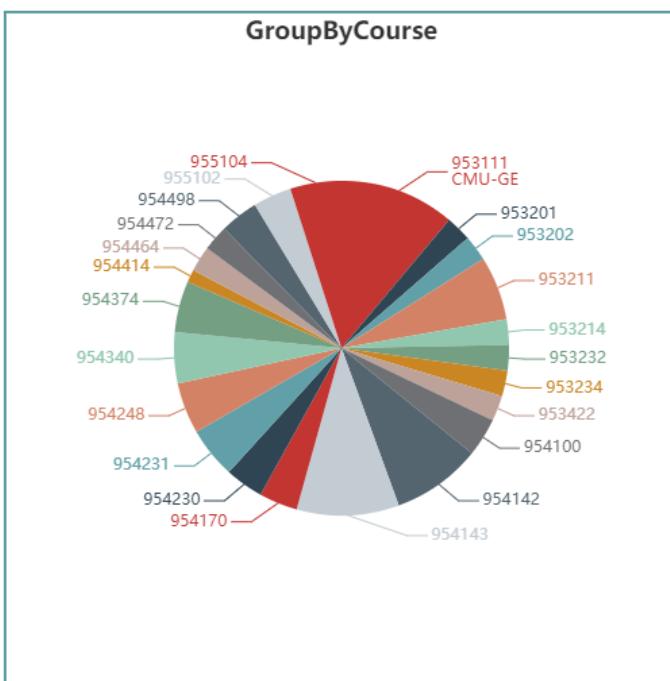
<b>Document Name</b>	CAMT Exam Dashboard with Tesseract _Test _Record_V.8	<b>Owner</b>	Lingyu Kong Jiajun Tao	<b>Page</b>	393/420
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<b>Test Description</b>	The test case is used to test whether the administrators or lecturers can see the dashboard at Dashboard page.
<b>Prerequisite</b>	The administrator or lecturers log in the system and at Dashboard page already.
<b>Test Steps</b>	<p>1. The administrator or lecturers see the statistic title count.</p>  <p>2. Administrator or lecturers see the pie chart.</p>  <p>a. Group by date</p>

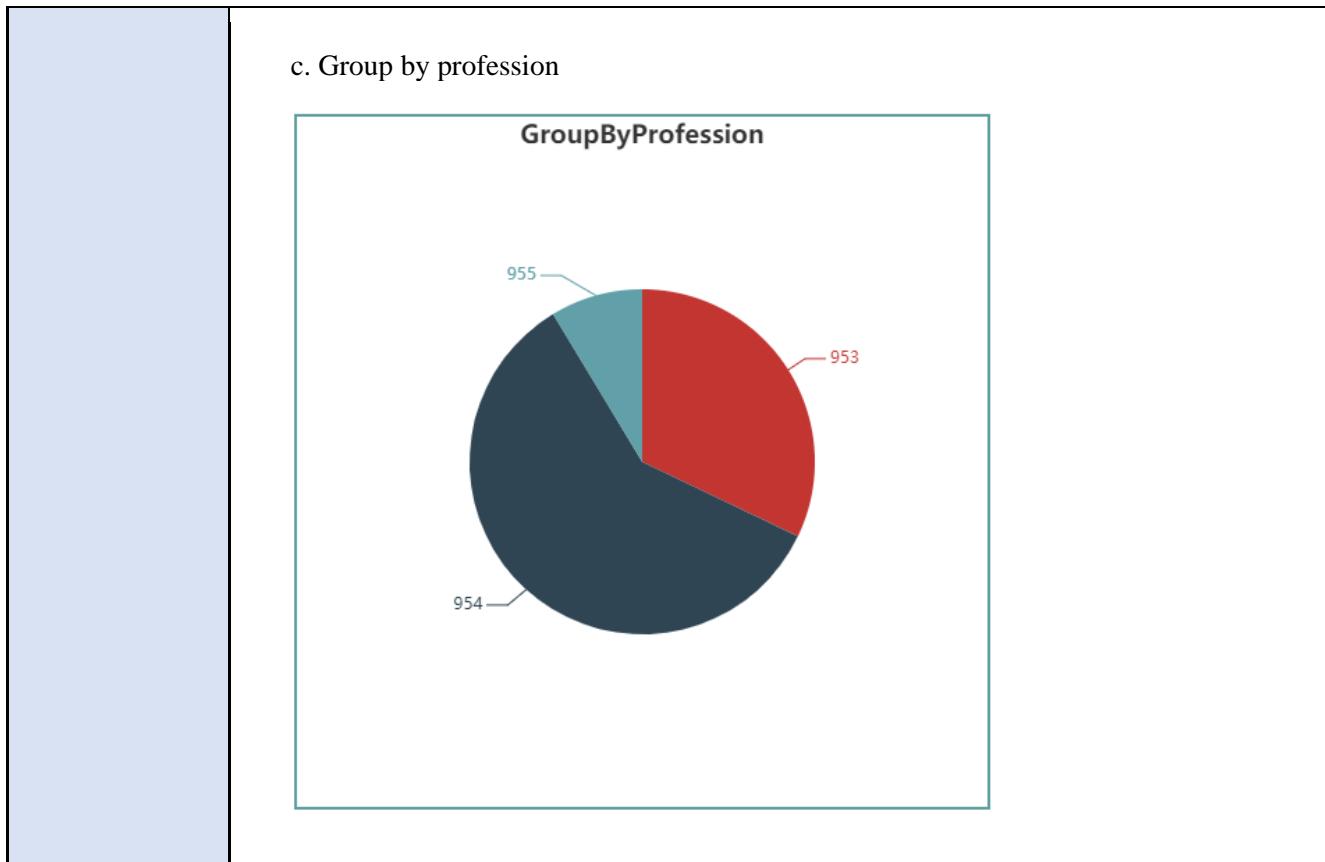
<b>Document Name</b>	CAMT Exam Dashboard with Tesseract _Test _Record_V.8	<b>Owner</b>	Lingyu Kong Jiajun Tao	<b>Page</b>	394/420
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b. Group by course



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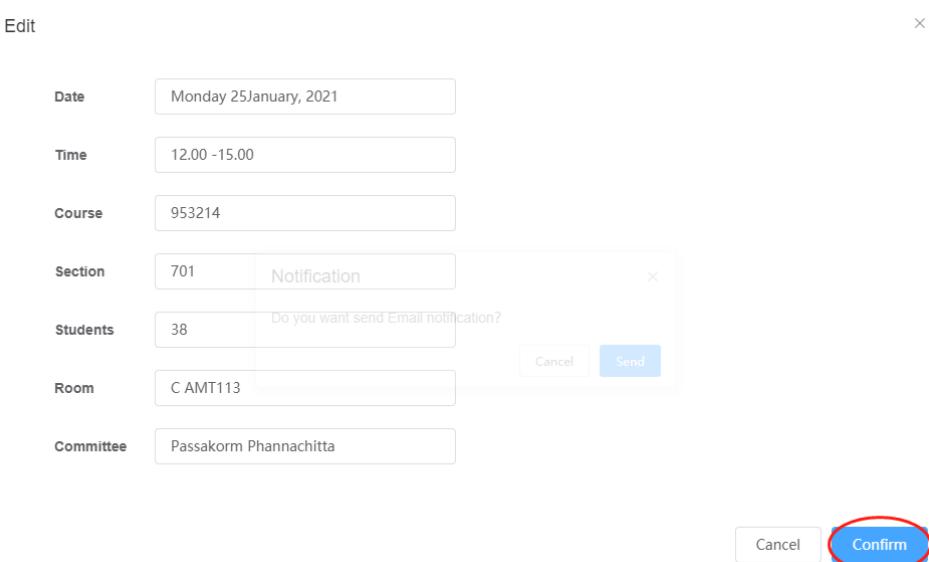
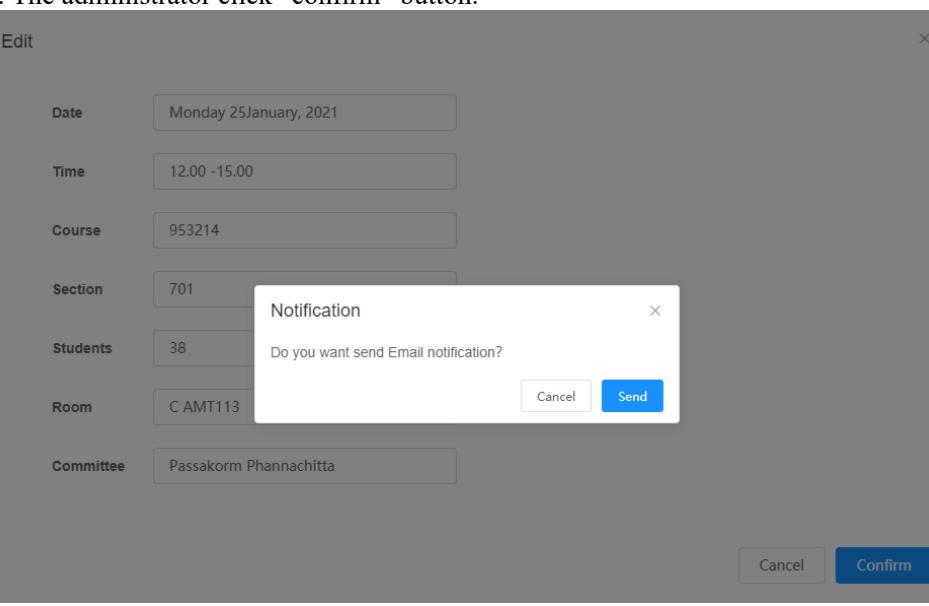


ID	Description	Expected Result	Actual Result	Pass/Fail
STC-09.1	the statistic title count (course, committee, section)	The system will display a count table.	The system will display a count table.	Pass
STC-09.2	the pie chart (Group by date, Group by course and Group by profession).	The system will display some pie chart.	The system will display some pie chart.	Pass

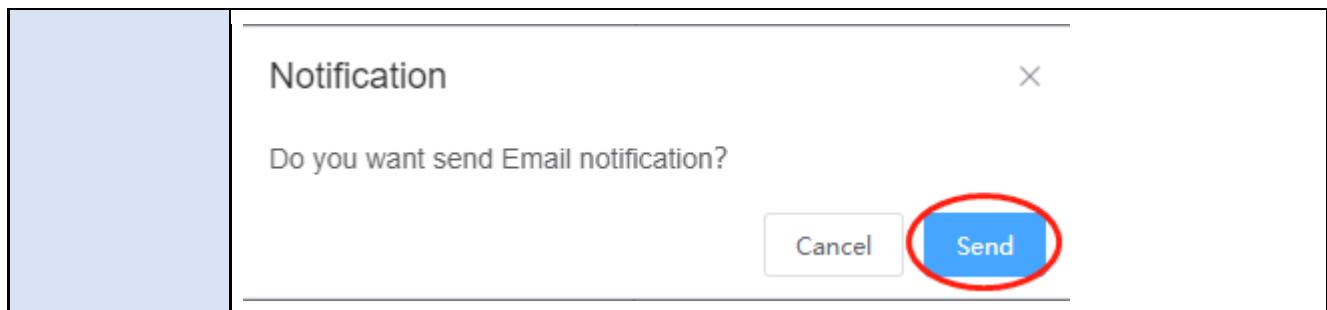
## 4.4 System test for Notification System

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**STC-10: Administrators can edit exam info and send email to lecturer.**

<b>Test Description</b>	The test case is used to test whether the administrators can edit exam info send email to lecturer.
<b>Prerequisite</b>	The administrator or lecturers log in the system and at ExamInfoList page already.
<b>Test Steps</b>	<p>1. The administrator edit exam info.</p>  <p>2. The administrator click “confirm” button.</p>  <p>3.. The administrator click “Send” button, confirm send.</p>

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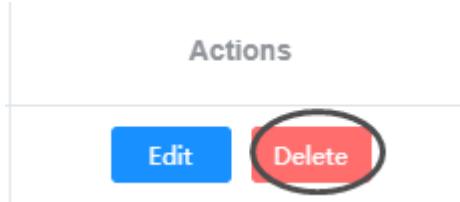
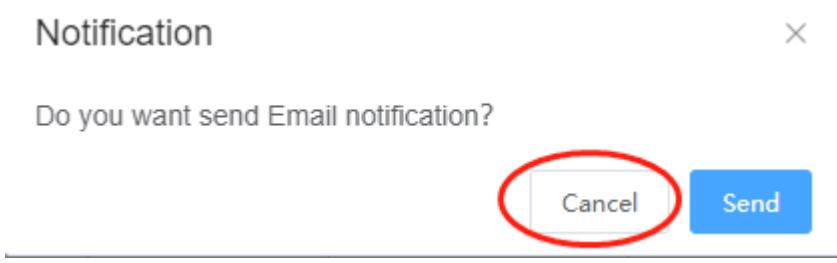
ID	Description	Expected Result	Actual Result	Pass/Fail
STC-10.1	Modify the date, time, course, section, students, room, committee.	Figure 1	Figure 1	Pass
STC-10.2	Modify the date, time, course, section, students, room, committee. And send email.	<span style="color: green;">✓ Success</span> Update Successfully	<span style="color: green;">✓ Success</span> Update Successfully	Pass

ID	FileRecordId	Date	Time	Course	Section	Students	Room	Committee	Actions
1789	6	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Jiajun Tao	<button>Edit</button> <button>Delete</button>

**Figure 1**

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**STC-11: Administrators can delete exam info and send email to lecturer.**

<b>Test Description</b>	The test case is used to test whether the administrators can delete exam info send email to lecturer.
<b>Prerequisite</b>	The administrator or lecturers log in the system and at ExamInfoList page already.
<b>Test Steps</b>	<p>1. The administrator delete exam info.</p>  <p>2. The administrator click “confirm” button.</p> 

ID	Description	Expected Result	Actual Result	Pass/Fail
STC-03.1	Delete Exam info	Success Delete Successfully	Success Delete Successfully	Pass
STC-03.2	Confirm send email.	Success Update Successfully	Success Update Successfully	Pass

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**STC-12: Lecturer can receive email with exam information.**

<b>Test Description</b>	The test case is used to test whether lecturer can receive email with exam information
<b>Prerequisite</b>	The lecturer has email.
<b>Test Steps</b>	<p>1. The lecturer opens email.</p>  <p>2. The lecturer checks own email whether there is an email with exam information.</p> <p>This is your exam info :</p> <p>Translate message to: Chinese Simplified   Never translate from: English</p> <p>4 450333487@qq.com Thu 9/16/2021 6:00 PM To: LINGYU KONG</p> <p>Dear Lingyu Kong :</p> <p>This is your Exam schedule {"Time":"15.30 -\n18.30","Section":"001","Date":"Monday 25\nJanuary, 2021","fileRecordId":54,"Students":"129" Kong","id":4535,"Course":"953111\nCMU-GE","Room":"No booking\nclassroom"} Please arrange your time reasonably.</p> <p>Reply   Forward</p> <p>Your exam schedule has been delete :</p> <p>Translate message to: Chinese Simplified   Never translate from: English</p> <p>4 450333487@qq.com Fri 9/17/2021 1:05 PM To: LINGYU KONG</p> <p>Dear Lingyu Kong :</p> <p>This is your Exam schedule {"Time":"15.30 -\n18.30","Section":"003","Date":"Monday 25\nJanuary, 2021","fileRecordId":54,"Stude Kong","id":4537,"Course":"953111\nCMU-GE","Room":"No booking\nclassroom"} Please arrange your time reasonably.</p>

ID	Description	Expected Result		Actual Result		Pass/Fail
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ST C- 04. 1	The lecturer received edit exam information notification	<p>This is your exam info :</p> <p>Translate message to: Chinese Simplified   Never translate from: English</p> <p><b>4</b> 450333487@qq.com Thu 9/16/2021 6:00 PM To: LINGYU KONG  Dear Lingyu Kong :  This is your Exam schedule {"Time":"15.30 -\n18.30","Section":"001","D Kong","id":4535,"Course":"953111\nCMU-GE","Room":"No booking\nPlease arrange your time reasonably.</p> <p>Reply   Forward</p>	<p>This is your exam info :</p> <p>Translate message to: Chinese Simplified   Never tran</p> <p><b>4</b> 450333487@qq.com Thu 9/16/2021 6:00 PM To: LINGYU KONG  Dear Lingyu Kong :  This is your Exam schedule {"Time":"15.30 -\nKong","id":4535,"Course":"953111\nCMU-G Please arrange your time reasonably.</p> <p>Reply   Forward</p>	Pass
ST C- 04. 2	The lecturer received delete exam information notification	<p>Your exam schedule has been delete :</p> <p>Translate message to: Chinese Simplified   Never translate from: English</p> <p><b>4</b> 450333487@qq.com Fri 9/17/2021 1:05 PM To: LINGYU KONG  Dear Lingyu Kong :  This is your Exam schedule {"Time":"15.30 -\n18.30","Section":"0 Kong","id":4537,"Course":"953111\nCMU-GE","Room":"No book Please arrange your time reasonably.</p>	<p>Your exam schedule has been dele</p> <p>Translate message to: Chinese Simplified   Never</p> <p><b>4</b> 450333487@qq.com Fri 9/17/2021 1:05 PM To: LINGYU KONG  Dear Lingyu Kong :  This is your Exam schedule {"Time":"15.3 Kong","id":4537,"Course":"953111\nCM Please arrange your time reasonably.</p>	Pass

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# **CHAPTER 8**

## **TRACEABILITY RECORD**



# CAMT Exam Dashboard with Tesseract

## Traceability Matrix

By

Lingyu Kong 612115506

Jiajun Tao 612115503

BACHELOR OF SOFTWARE ENGINEERING PROGRAM

COLLEGE OF ARTS, MEDIA AND  
TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

Pree Thiengburanathum, PhD

## CAMT Exam Dashboard with Tesseract

Lingyu Kong 612115506

Jiajun Tao 612115503

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ARTS MEDIA AND TECHNOLOGY

..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

# Document History

Version	History	Status	Date	Viewable	Editable	Responsible
Traceability_Version.1.docx	<b>Add</b> <ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 2</li> </ul>	Draft	1 June , 2021	Advisor LK JT	LK JT	LK JT
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Traceability_Version.6.docx	<b>Update</b> <ul style="list-style-type: none"> <li>• Chapter two</li> </ul>	Release	10 Sep , 2021	Advisor LK JT	LK JT	LK JT
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Traceability_Ve rsion.8.docx	<b>Update</b> <ul style="list-style-type: none"><li>• Correct spelling and grammar mistakes</li><li>• Check if they correspond to each other</li></ul>	Release	10 Oct , 2021	Advisor LK JT	LK JT	LK JT
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# Chapter one | Introduction

## 1.1 Purpose

The traceability record of the Activity Management System is established to show relation between URS, SRS, UC, MD, SD, UI, CDD, MD, UTC. Traceability record will allow traceability and verification of requirements developed in the project.

## 1.2 Acronyms and Definitions

### 1.2.1 Acronyms

SD - Sequence Diagram

SRS - Software Requirement Specification/System Requirement Specification

UTC - Unit Test Case

STC - System Test Case

UC - Use Case

UI - User Interface

URS - User Requirement Specification

CDD- Class Diagram Description

MD – Method Description

AD – Activity Diagram

SD	Sequence Diagram
SRS	Software Requirement Specification/System Requirement Specification
UTC	Unit Test Case
STC	System Test Case
UC	Use Case
UI	User Interface
URS	User Requirement Specification
CDD	Class Diagram Description
MD	Method Description
AD	Activity Diagram

### 1.2.2 Definition

Name	Definition
IEEE	Institute for Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and computer scientists. [IEEE90]
Requirement	(1) A condition or capability needed by the user to solve a problem or achieve an objective.

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	<p>(2) A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document.</p> <p>(3) A documented representation of a condition or capability as in definition (1) or (2). [IEEE90]</p>
Specification	Precise description of an activity or work product that serves as the basic or input for further activities or work product. A specification can comprise requirements for a product and how they will be solved. Different parts of a specification (e.g. what is to be done, how it will be done) must not be mixed. [IEEE90]
Use case	<p>(1) Concept to describe a system based on usage of system resources by its environment. Characterized by an objective-set of interactions within and at the borders of that system.</p> <p>(2) Notation from UML for describing a scenario (Usage approach, operational scenario) from the perspective of this user. [IEEE90]</p>

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## Chapter two | Traceability Record Matrix

### 2.1 UC-URS-SRS-CDD-SD-UI

UC	URS	SRS	AD	CDD	SD	UI
UC-01	URS-01	SRS-001 SRS-002 SRS-003 SRS-004 SRS-005 SRS-006	AD-01	CDD-1 CDD-2 CDD-3 CDD-4 CDD-5	SD-01	UI-01
UC-02	URS-02	SRS-001 SRS-007 SRS-008 SRS-009	AD-02	CDD-1 CDD-2 CDD-3 CDD-4 CDD-5	SD-02	UI-01
UC-03	URS-03	SRS-010	AD-03	CDD-1 CDD-2 CDD-3 CDD-4 CDD-5	SD-03	UI-02
UC-04	URS-04	SRS-011 SRS-012 SRS-013 SRS-014 SRS-015 SRS-016	AD-04	CDD-1 CDD-6 CDD-7 CDD-8 CDD-9 CDD-10 CDD-11 CDD-12 CDD-13 CDD-14 CDD-15 CDD-16	SD-04	UI-03
UC-05	URS-05	SRS-017	AD-05	CDD-1 CDD-6 CDD-10 CDD-11 CDD-12 CDD-13	SD-05	UI-03
UC-06	URS-06	SRS-018	AD-06	CDD-1 CDD-6 CDD-10 CDD-17 CDD-18 CDD-19 CDD-20 CDD-21	SD-06	UI-04
UC-07	URS-07	SRS-019 SRS-020 SRS-021	AD-07	CDD-1 CDD-6 CDD-22 CDD-23 CDD-24	SD-07	UI-05 UI-06 UI-07
UC-08	URS-08	SRS-019	AD-08	CDD-1	SD-08	UI-05

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		SRS-022		CDD-6 CDD-22 CDD-23 CDD-24		UI-07
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## 2.2 UC-MD-UTC-STC

UC	MD	UTC	STC
UC-01	MD-1 MD-2 MD-5 MD-6 MD-8 MD-9	UTC-001 UTC-002 UTC-003 UTC-004	STC-01
UC-02	MD-4 MD-7 MD-10 MD-11	UTC-001 UTC-002 UTC-003 UTC-004	STC-02
UC-03	MD-3	UTC-001 UTC-002 UTC-003 UTC-004	STC-03
UC-04	MD-12 MD-13 MD-14 MD-16 MD-18 MD-19 MD-20 MD-22 MD-23 MD-24 MD-25 MD-26 MD-27 MD-28 MD-29	UTC-005	STC-04 STC-05
UC-05	MD-15 MD-17 MD-21	UTC-006	STC-06 STC-07 STC-08
UC-06	MD-30 MD-31 MD-32 MD-33 MD-34 MD-36 MD-37	UTC-008 UTC-011 UTC-012 UTC-013 UTC-014 UTC-015 UTC-019 UTC-020	STC-09
UC-07	MD-38 MD-39 MD-41 MD-42 MD-44 MD-45 MD-46	UTC-007 UTC-009 UTC-010 UTC-016 UTC-017	STC-10 STC-12
UC-08	MD-38 MD-40	UTC-007 UTC-008	STC-11 STC-12

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	MD-41 MD-43 MD-44 MD-46 MD-46	UTC-010 UTC-016 UTC-018	
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# **CHAPTER 9**

## **EXECUTIVE SUMMARY**

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# CAMT Exam Dashboard with Tesseract

## Executive Summary

By

Lingyu Kong 612115506

Jiajun Tao 612115503

BACHELOR OF SOFTWARE ENGINEERING PROGRAM

COLLEGE OF ARTS, MEDIA AND  
TECHNOLOGY CHIANG MAI UNIVERSITY

Advisor

Pree Thiengburanathum, PhD

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Jiajun Tao 612115503

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..... ADVISOR

Dr. PREE THIENGBURANATHUM

..... MEMBER

Lingyu Kong

..... MEMBER

Jiajun Tao

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# Chapter One | Introduction

## 1.1 Identification

The Executive Summary is the document for summarizing the work that we have done in each progress. It provides completeness of the CAMT Exam Dashboard with Tesseract.

## 1.2 Project Overview

The CAMT exam dashboard with Tesseract is a web-based application designed to help lecturers effectively access exam information and assist staff in managing exam information. The system is built using Vue.js, SpringMVC and Mybatis, and is integrated with CMU API to facilitate lecturers to log in to the system. In addition, use SpirePDF, OPENCV and TencentOCR engines to parse the PDF exam schedule which uploaded by the lecturer or admin into an Excel table for the lecturer or admin to download, and store the data in the database at the same time. We also use the Echarts dashboard framework to generate exam overviews, professional classifications, and exam time distribution for lecturers and admin. Finally, we also use the Java Mail API to send modify and delete the exam schedule notification to the lecturers via CMU mail box.

### 1.2.1 Project Scope

The CAMT exam dashboard with Tesseract has four features, which are including these scopes:

- Feature#1: Authentication System

The administrator uses the administrator account to log in to the system

The lecturer uses the CMU account to log in to the system.

- Feature#2: Table and cell detection and text extraction and parsing system

The system detects and parses the manual input PDF to generates EXCEL and data frame.

- Feature#3: Dashboard System

The system generates a dashboard based on the data frame that generated by the detection and analysis.

- Feature#4: Notification System

The administrator can modify the information in the database and send exam notifications for the protector.

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## Chapter Two | Executive Report

Plan		Progress	Status	%Complete
Progress 1	Feature # 1	Requirement	Done	100%
		Designing	Done	100%
		Development	Done	100%
		Testing	Done	100%
	Feature # 2	Requirement	Done	100%
		Designing	Done	100%
		Development	Done	100%
		Testing	Done	100%
Plan		Progress	Status	%Complete
Progress 2	Feature # 3	Requirement	Done	100%
		Designing	Done	100%
		Development	Done	100%
		Testing	Done	100%
	Feature # 4	Requirement	Done	100%
		Designing	Done	100%
		Development	Done	100%
		Testing	Done	100%

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## Chapter Three | Summary Report

According to the quality of the document, the recognition result will be different, and the recognition result of a very clear document is very good.

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