



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

**SECD2613 ANALISIS DAN REKABENTUK SISTEM
(SYSTEM ANALYSIS AND DESIGN)**

Semester II 2023/2024

Phase 3 : Analysis and Design

Campus Resource Management System

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SECTION : 3

GROUP : 4

PROTOTYPE VIDEO LINK : <https://youtu.be/c-UCtWR59cA>

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1.0 OVERVIEW OF THE PROJECT

In the ever-changing educational environment, universities and colleges are struggling with the task of managing resources effectively in the face of changing demands. Traditional methods often prove inadequate, lacking the transparency and efficiency needed to meet modern expectations. To address these challenges, we propose the development of a Campus Resource Management System (CRMS) specifically tailored to the needs of educational institutions. The CRMS serves as a centralized platform that integrates a variety of administrative and operational processes, such as facility booking, event management, and student and faculty management. By integrating these functions, CRMS improves efficiency and communication while optimizing resource utilization. The system empowers stakeholders with an user-friendly interface that promotes productivity and collaboration across the campus community. As educational institutions embrace innovation and technology, CRMS serves as a catalyst for positive change, opening up new possibilities for growth and student success.

2.0 PROBLEM STATEMENT

Poor communication

Communication between faculty, staff and students is disjointed. Consequently, it can lead to misunderstandings and delays in information dissemination. At the same time, it may also result in lack of transparency in decision-making processes.

High possibility of human error in administrative tasks

Human error will increase when using a manual system that highly relies on human resources. Many administrative tasks such as equipment requests and faculty maintenance requests are performed manually. Hence, it can result in a time consuming and error-prone process.

Take attendance manually

Sometimes, the staff need to take students' attendance manually. It is because the system is down and unable to proceed to the next step. Hence, the attendance also will be recorded and stored manually

Inefficient Announcement Delivery and Management

When the system experiences downtime, the staff's announcements will be made through social media platforms such as WhatsApp, which is the primary medium to make announcements to send to the students.

Payment

The primary payment method in the current system is online transfer. However, the system occasionally experiences downtime, leading to temporary closures. Consequently, students are unable to make payments during these periods.

Registration

Currently, all the registration procedures undergo a manual process such as filling out forms manually. During registration, most of the personal information, including private and sensitive information of students and parents will be collected. However, this manual process is prone to errors and delays. Therefore, there is a pressing need to enhance security, and improve the overall registration experience

3.0 PROPOSED SOLUTION

The Campus Resource Management System (CRMS) will act as the central hub for coordinating and optimizing various campus resources. It will streamline various administrative and operational processes within a university. At the same time, this system will serve as a centralized platform for overseeing a multitude of campus resources, encompassing facilities, events, students, faculty and staff. Additionally, the CRMS aims to improve overall campus efficiency, communication and resource utilization too. Ultimately, it will not only be enhancing the efficiency of resource management but also improve overall campus operations. As the saying goes, kill two birds with one stone. Not to forget that the primary purpose of CRMS is to provide a centralized platform for managing various campus resources, including facilities, events, students, faculty and staff.

Since the system has poor communication problems, we decided to add some communication features in order to avoid misunderstandings. For instance, Introducing communication tools such as announcements, notifications and collaborative spaces within the system. It will not only improve communication between staff, students and stakeholders, but also foster collaboration between each other. Hence, effective communication will occur. Besides, we need to modify the manual settings into automation. For example, automation of administrative tasks. By implementing this automation of administrative tasks into our system, it is able to reduce manual effort and minimize errors. Furthermore, the processes such as student registration, faculty scheduling and decision-making processes can be streamlined and executed with precision. So, effectiveness in managing campus resources will be increased.

To solve the problem of inefficient announcement delivery, we need to develop a dedicated mobile application for the system that allows users to receive notifications directly on their smartphones. At the same time, ensuring that the system will be accessible via mobile devices is a must for us to develop so that everyone can use it at any time, anywhere. The system will allow us to access resource information, perform tasks on-the-go and enhance convenience

and productivity. This is not only saving time and effort but also ensures consistency and accuracy.

To ensure continuous availability of the payment processing system , we are able to build backup servers to avoid the unexpected downtime. For example, when the main system triggers a downtime period of the payment, it will automatically switch to the backup system. Consequently, it can minimize disruption of the payment processing. In addition, constructing an online registration portal can simplify data collection without wasting time. This portal should be user-friendly and accessible from various devices to fit in with different users' needs. Moreover, we should develop continuous improvement and feedback mechanisms from users. It is because the functionality and usability of the CRMS can be improved based on user needs from time to time.

Last but not least, we will develop a user-friendly interface within the CRMS system that provides students, staff and stakeholders with easy access to all information. We hope that this system can enhance the working experience of everyone.

4.0 CURRENT BUSINESS PROCESS

Here are the scenarios and workflow of current business process for stakeholder:

1. Login to the system:
 - 1.1 Users (students, faculty and staff) enter their id and password to access the Campus Resource Management System (CRMS).
2. Customizing according to preference:
 - 2.1 Users can set preferences for notifications, display settings and booking options.
3. Main Menu Options:
 - 3.1 The system displays various options such as Facility Booking and Management, Student Management, Communication and Notification.
4. Facility Booking and Management:
 - 4.1 Facility Booking
 - 4.1.1 Users select the option to book a facility .
 - 4.1.2 Users can filter the facility based on the type, location, equipment and date.
 - 4.1.3 The system displays a list of available facilities.
 - 4.1.4 Users can search and view the availability of facilities like classrooms, auditoriums, labs and sports fields.
 - 4.2 View Facility Details
 - 4.2.1 Users select a facility to view its details.
 - 4.2.2 The system displays information such as capacity, available time slots, and amenities.
 - 4.2.3 Users can also see images about the facility and read reviews that are written by other users.
 - 4.3 Book Facility
 - 4.3.1 Users choose a timeslot and date.
 - 4.3.2 Users enter the booking details and information then confirm the booking.
 - 4.3.3 The system processes the booking and updates the facility's availability.
 - 4.3.4 The system will send a booking confirmation to the users after the booking is processed.

4.4 Manage Bookings

- 4.4.1 Facility managers can define booking policies and rules.
- 4.4.2 They manage reservations, approve or deny booking requests and track resource utilization.
- 4.4.3 They make sure that users are aware of the policies and rules by sending notifications.

4.5 Check Booking And Payment Status

- 4.5.1 Users can view their booking history and status of their current bookings.
- 4.5.2 Check payment status for the booking and pay.
- 4.5.3 The system provides multiple payment options that includes cash, online banking, TNG and credit card.
- 4.5.4 Receipt will be send to the users via email or SMS if the payment is successful.

5. Student Management:

5.1 Manage Student Enrolment

- 5.1.1 Administrators select the enrollment management option.
- 5.1.2 The system displays a list of enrolled students.
- 5.1.3 Administrators can add new students, update student information and maintain academic records.

5.2 Course Registration

- 5.2.1 Students can select the course registration option.
- 5.2.2 The system displays available courses for the semester.
- 5.2.3 Students choose courses and register.
- 5.2.4 The system confirms registration and updates the student's schedule.
- 5.2.5 Check payment status after registration is done.

5.3 View Academic Profiles

- 5.3.1 Students can access their academic profiles.
- 5.3.2 The system displays academic records, grades and progress.

5.4 Manage Student Activities

- 5.4.1 Administrators oversee students activities and events.
- 5.4.2 The system logs activities and tracks student participation.

5.5 Track Academic Progress

5.5.1 Students view their academic progress and performance reports.

6. Communication and Notification:

6.1 Send Announcements

6.1.1 Administrators select the option to send announcements.

6.1.2 The system displays an announcement creation form.

6.1.3 Administrators enter the announcement details and select recipients.

6.1.4 The system sends the announcement via email, messaging and notifications.

6.2 Receive Notifications

6.2.1 Users receive notifications about important updates, upcoming events, booking confirmations and deadlines.

6.2.2 The system displays notifications on the user's dashboard and sends alerts via email or messaging.

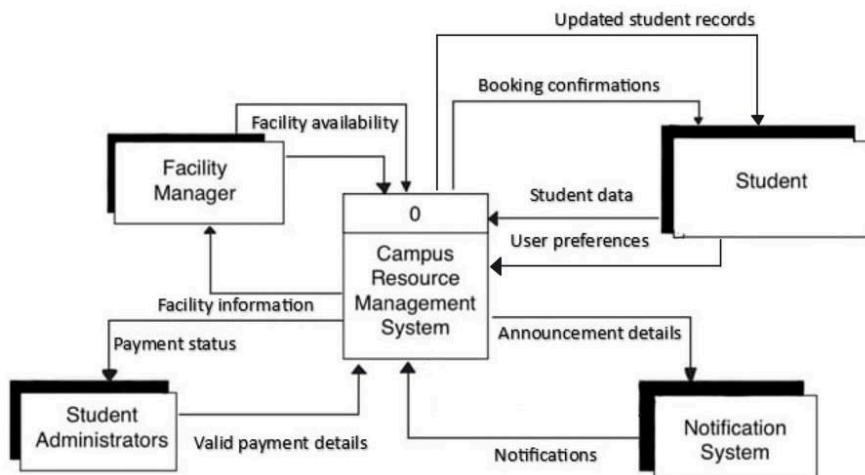
6.3 Check Notification History

6.3.1 Users can view the history of received notifications.

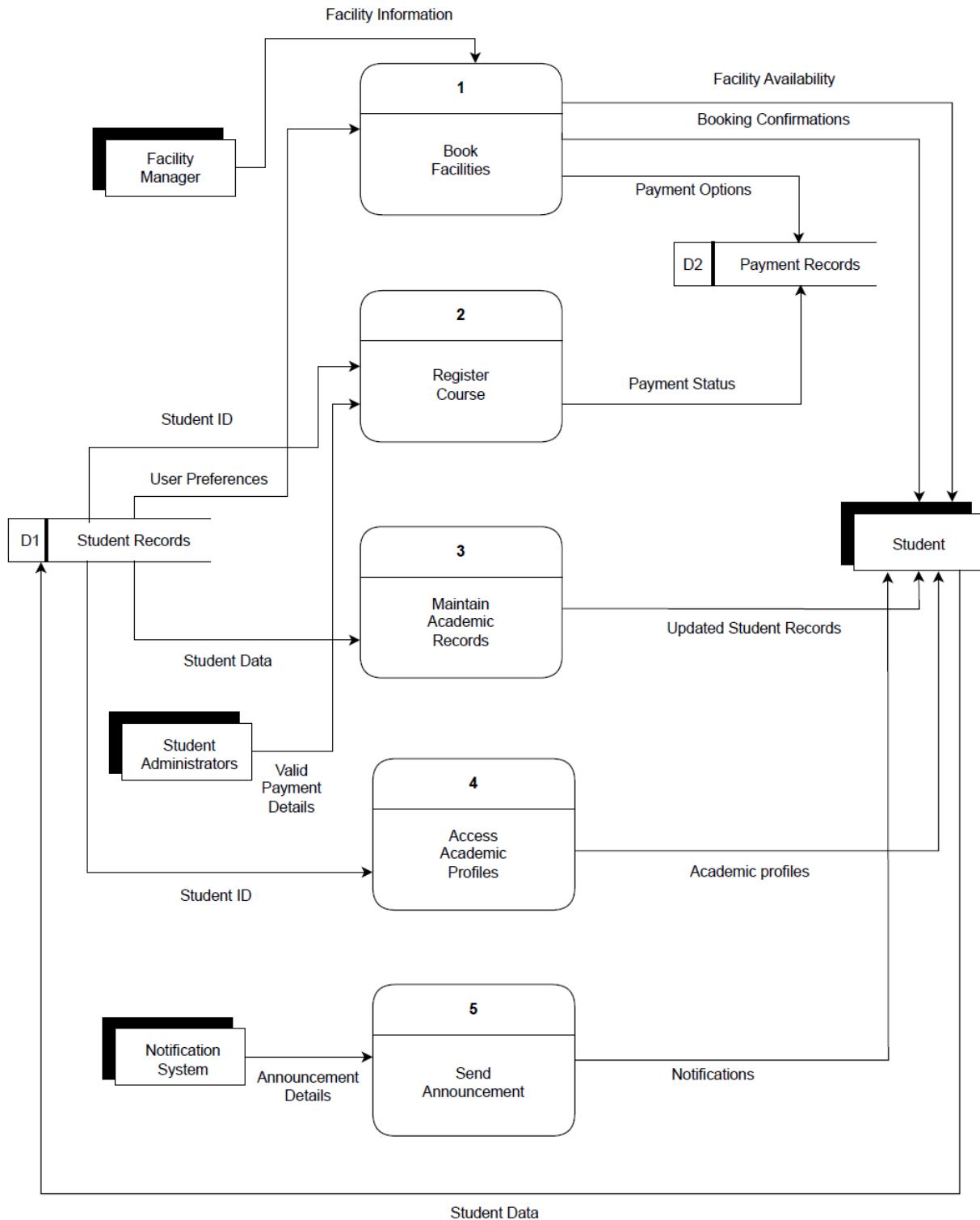
6.3.2 The system displays past announcements and alerts.

5.0 LOGICAL DFD AS-IS SYSTEM

5.1 Context Diagram

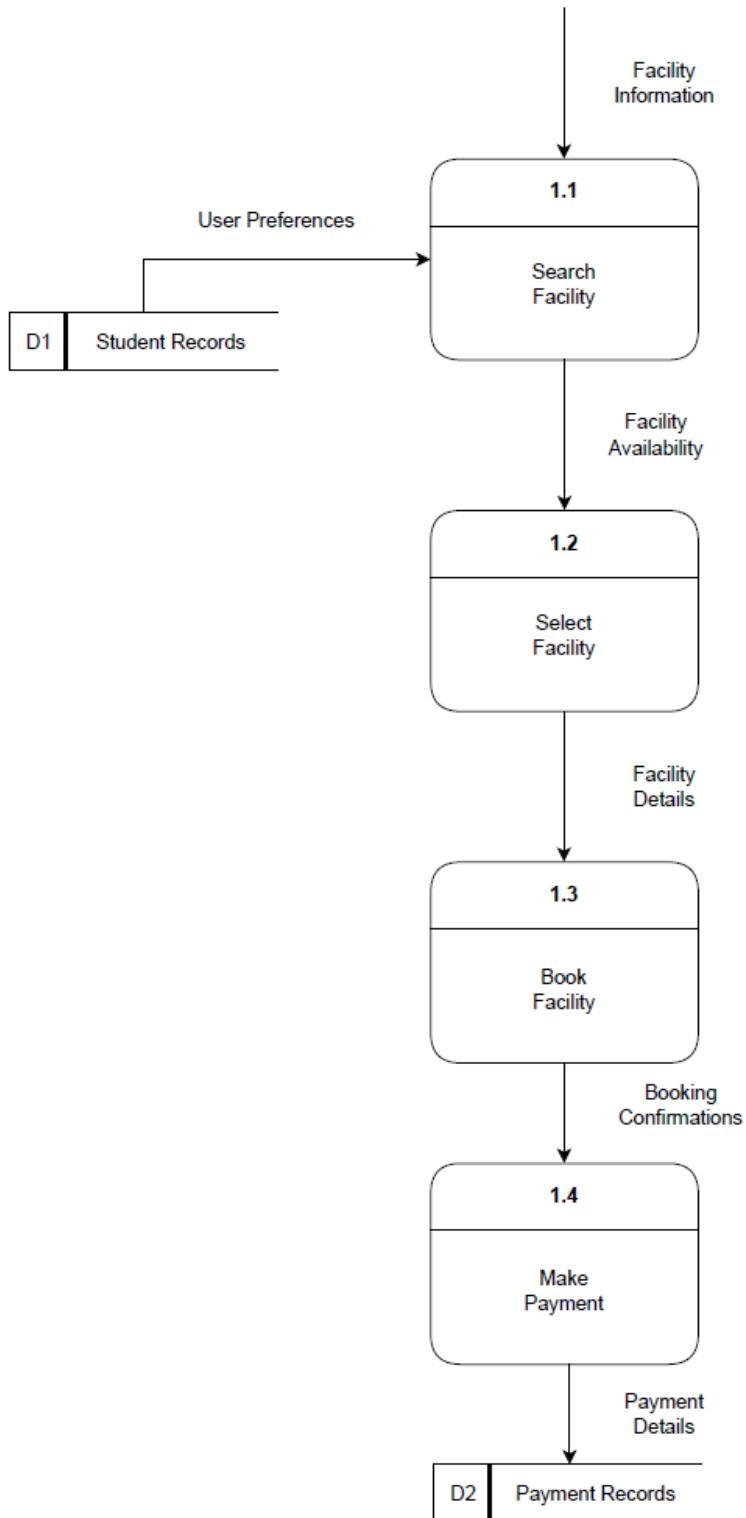


5.2 Diagram 0

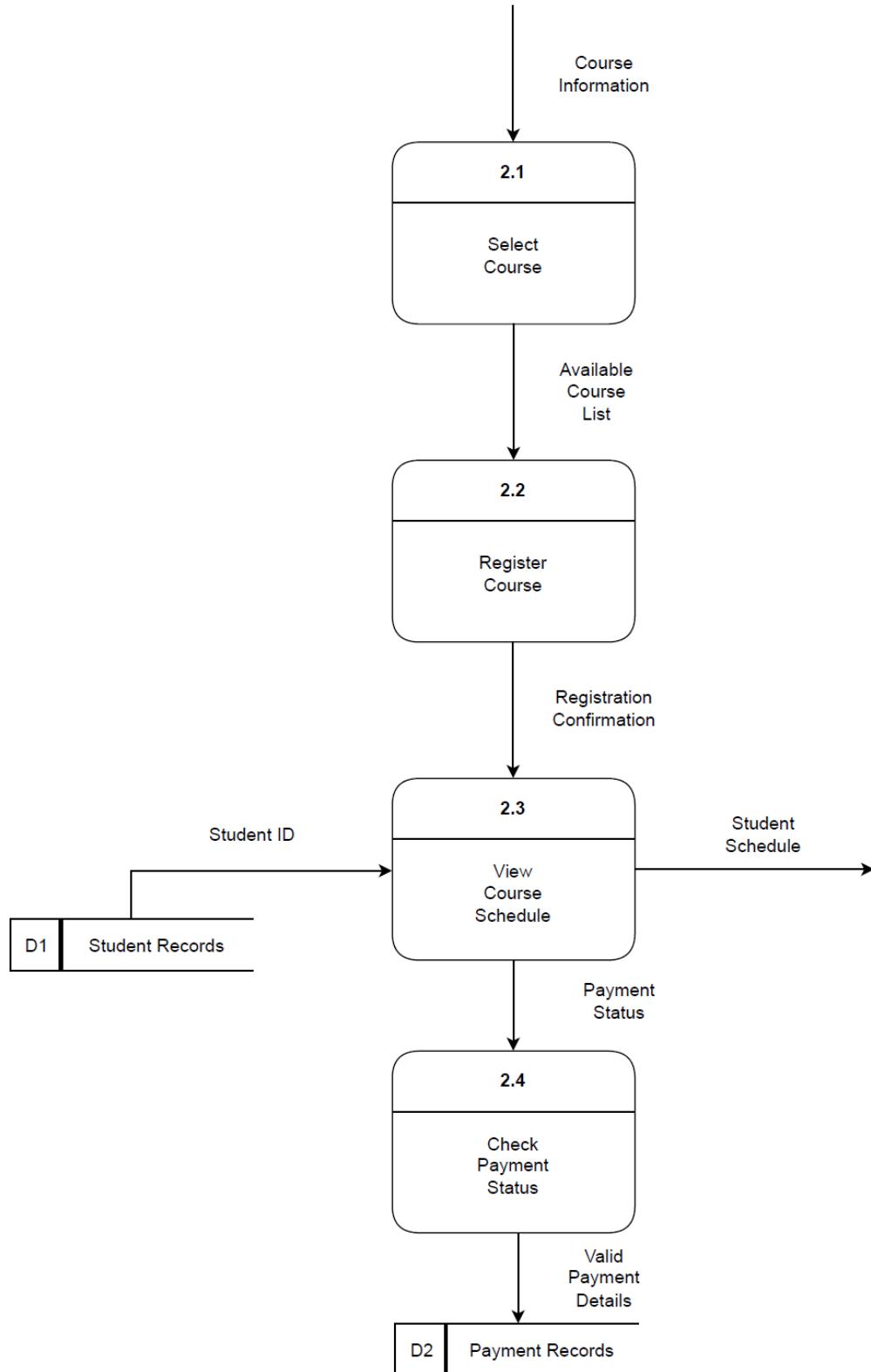


5.3 Child Diagram

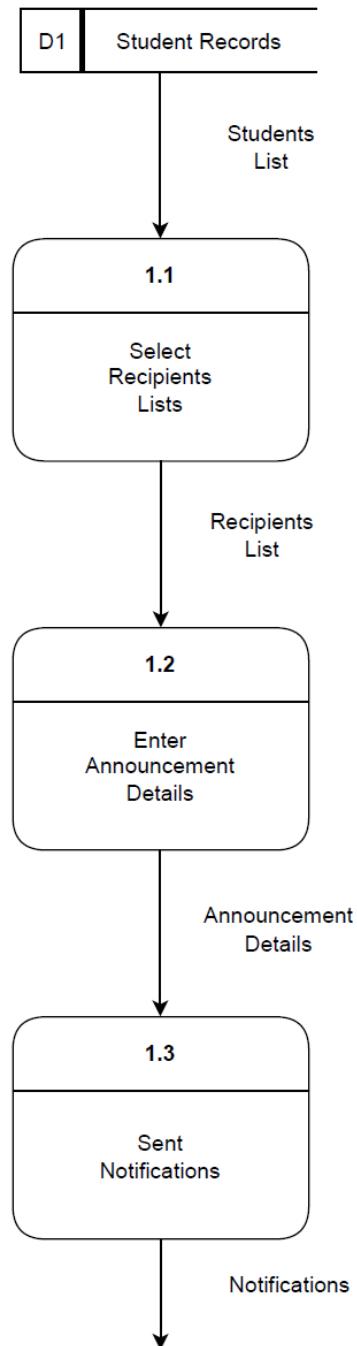
- Process 1 - Book Facilities



- Process 2 - Register Course

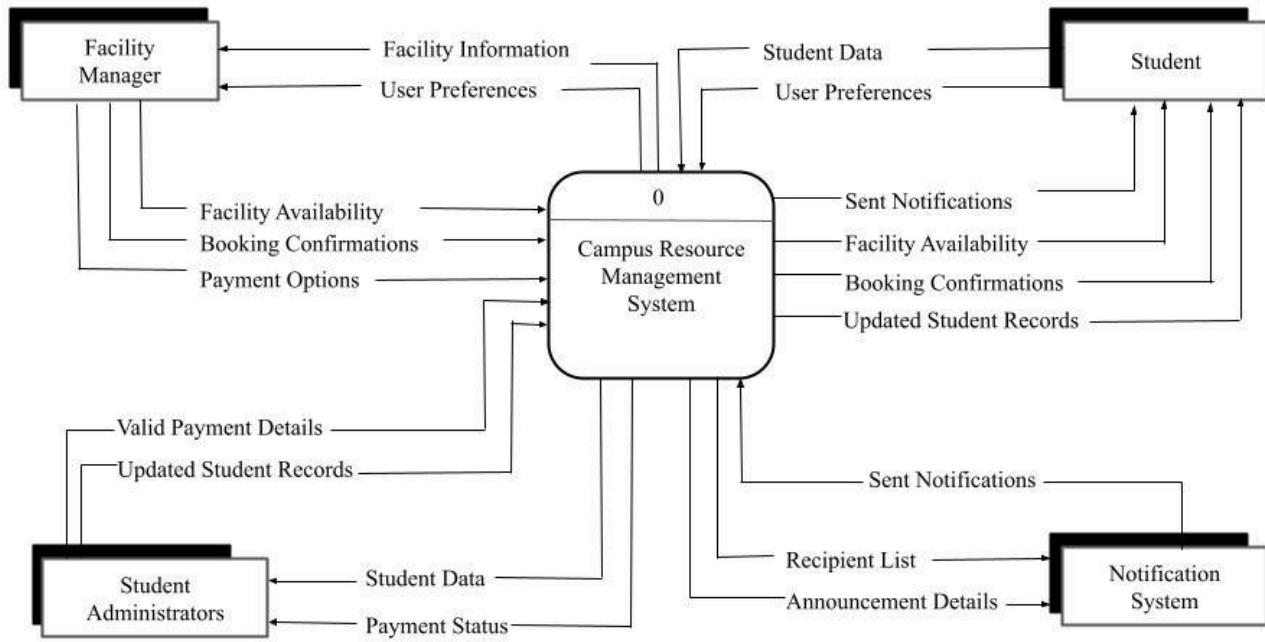


- **Process 5 - Send Announcement**

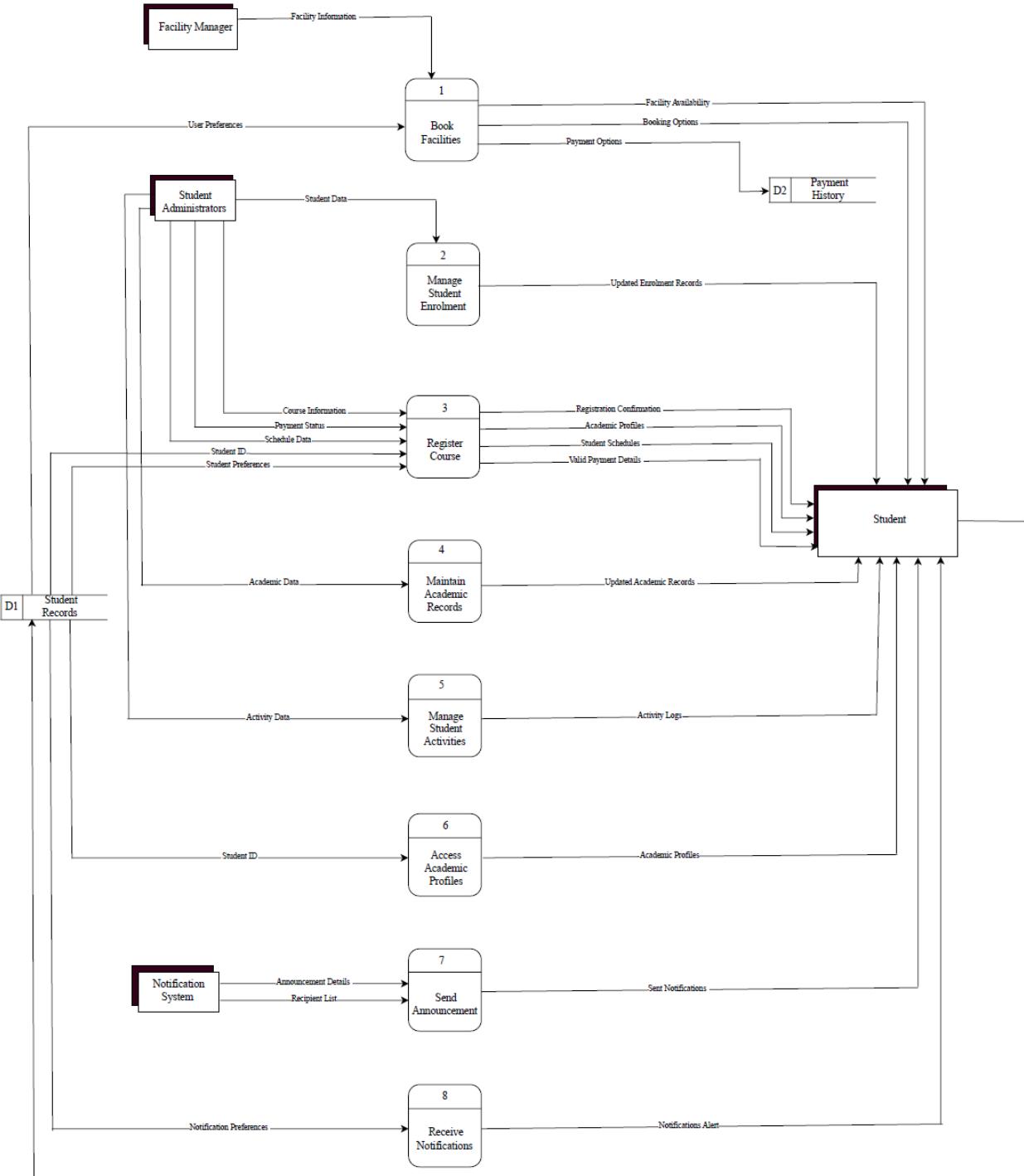


6.0 LOGICAL DFD (TO-BE) SYSTEM

6.1 Context Diagram

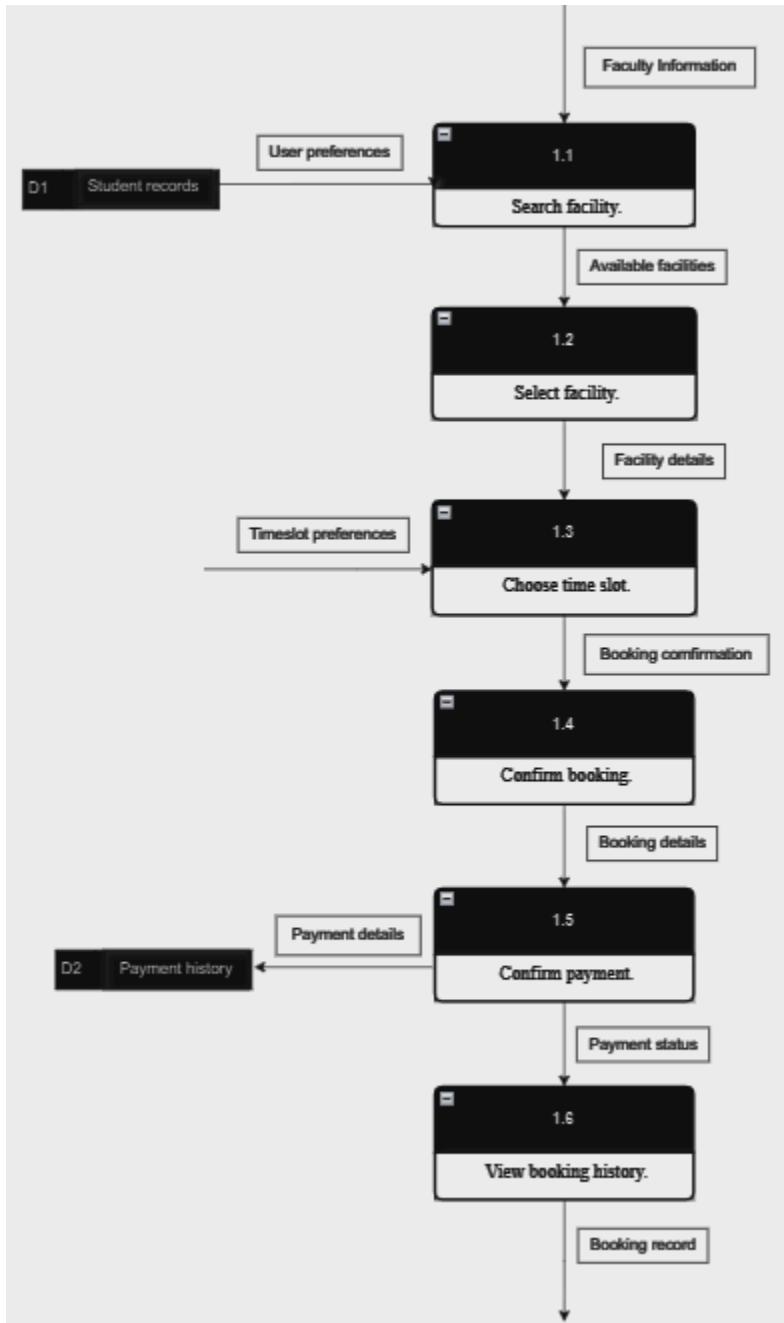


6.2 Diagram 0

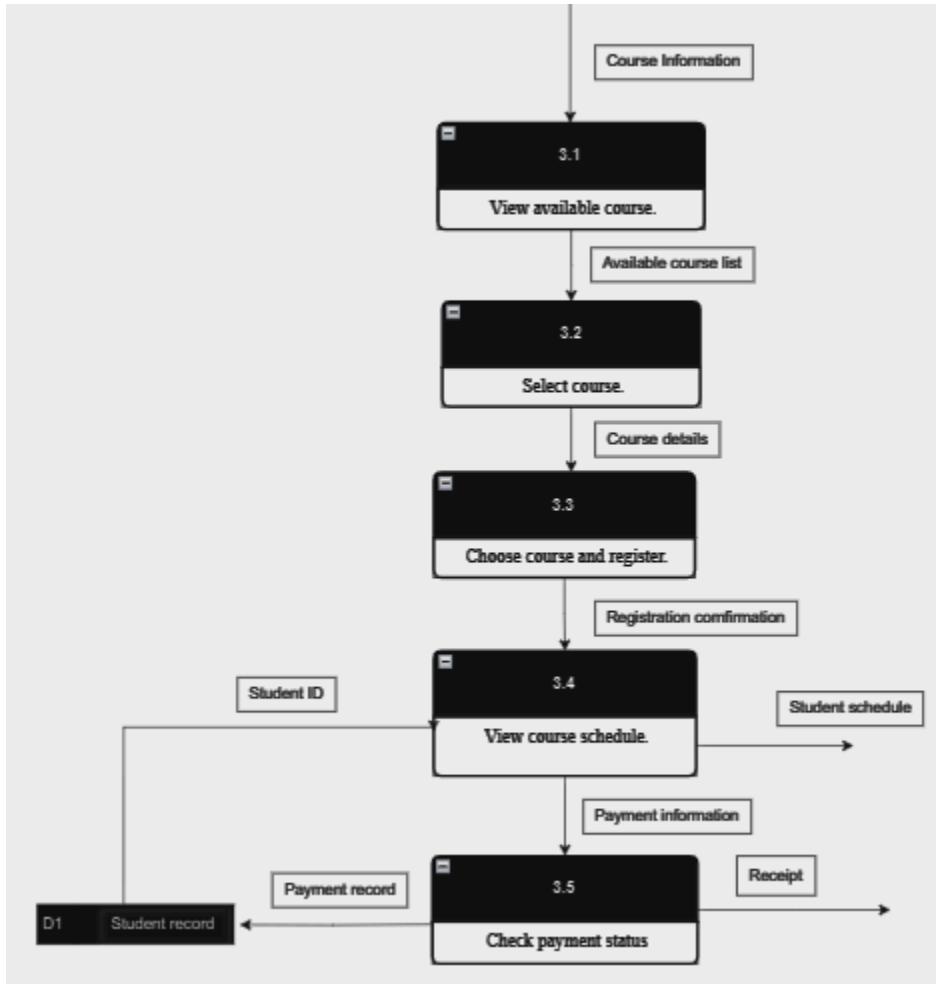


6.3 Child Diagram

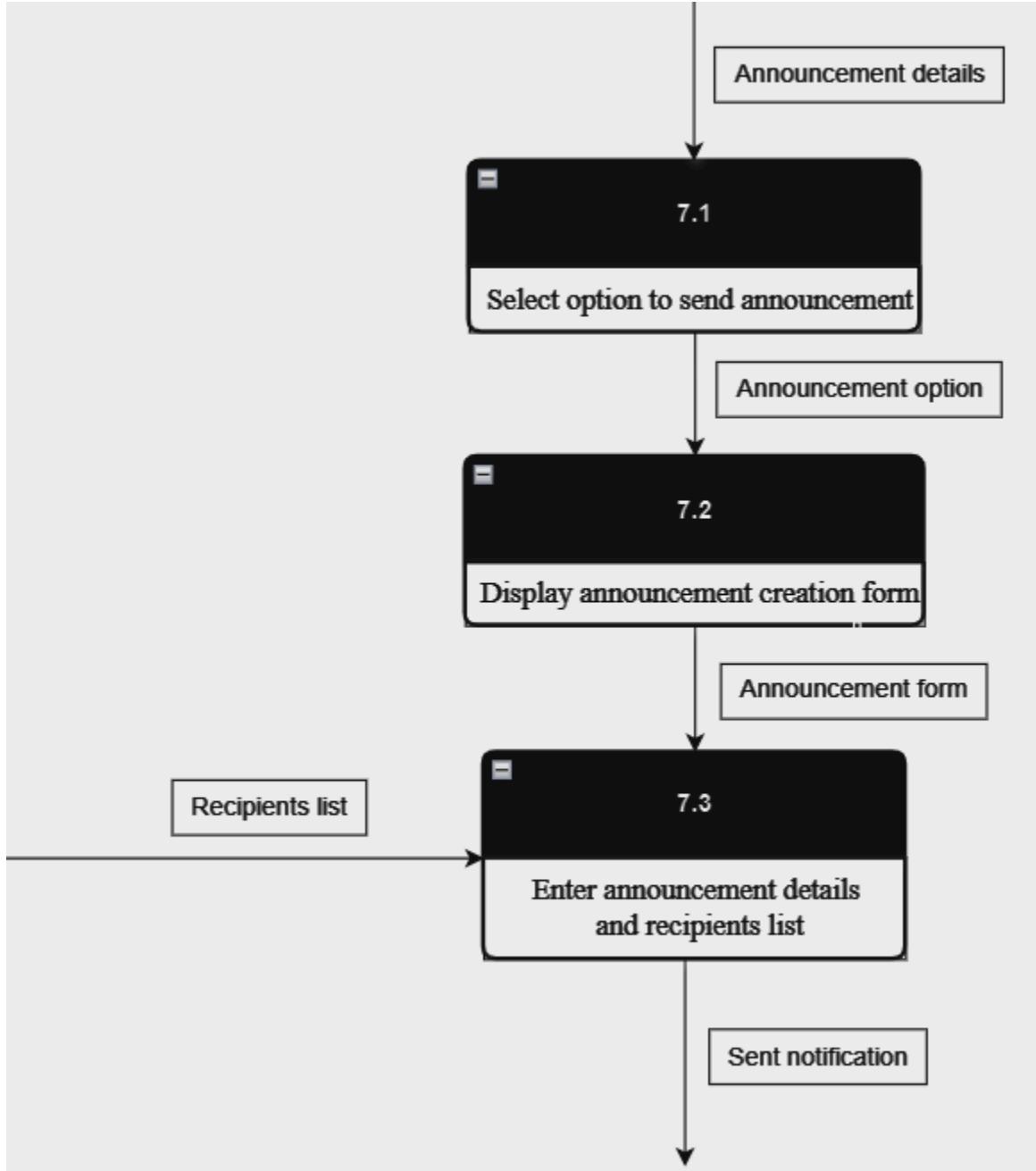
- Process 1 - Book Facilities



- Process 3 - Register Course



- Process 7 - Send Announcement



6.4 Process Specification

1. Facility Booking and Management

Process Number: 1

Process Name: Manage Facility Booking

Description: Allows users to search, view availability, and book campus facilities such as classrooms, auditoriums, labs, and sports fields. Facility managers can define booking policies, manage reservations, and track resource utilization.

Input Data Flow:

- User booking requests
- Facility availability data
- Booking policies

Output Data Flow:

- Booking confirmations
- Updated facility schedules
- Resource utilization reports

Type of Process: Online

Uses Prewritten Code: Yes

Process Logic:

1. IF user searches for facility availability THEN display available facilities.
2. IF user selects facility and submits booking request THEN check facility availability.
3. IF facility is available THEN create booking record and send confirmation.
4. ELSE displays an error message indicating unavailability.
5. Facility managers can define and update booking policies.
6. Generate and display resource utilization reports for facility managers.

Refer to: Decision Table

Unresolved Issues: Handling of double bookings and cancellation policies.

2. Student Management

Process Number: 2

Process Name: Manage Student Enrollment and Activities

Description: Administrators can manage student enrollment, course registration, academic records, and student activities. Students can access their academic profiles, register for courses, view schedules, and track progress.

Input Data Flow:

- Enrollment data
- Course information
- Academic records
- Activity details

Output Data Flow:

- Enrollment confirmations
- Updated academic records
- Course registration details
- Activity participation records

Type of Process: Online

Uses Prewritten Code: Yes

Process Logic:

1. IF administrator updates student enrollment THEN update student records.
2. IF student registers for courses THEN check course availability and update registration.
3. IF academic records are updated THEN notify students and update records.
4. IF a student participates in activities THEN record participation and update activity logs.
5. Students can view and track their academic profiles and schedules.

Refer to: Structured English

Unresolved Issues: Handling of course over-enrollment and academic record corrections.

3. Communication and Notification

Process Number: 3

Process Name: Manage Communication and Notification

Description: Facilitates communication among stakeholders through email, messaging, and notifications. Users receive announcements, reminders, and alerts regarding upcoming events, bookings, and deadlines.

Input Data Flow:

- Announcement details
- Reminder settings
- User preferences

Output Data Flow:

- Emails
- Messages
- Notifications

Type of Process: Online

Uses Prewritten Code: Yes

Process Logic:

1. IF administrator sends an announcement THEN distribute to all users.
2. IF reminder is set THEN schedule notification for specified time.
3. IF user preferences are updated THEN customize notifications accordingly.
4. Users receive and can view messages and alerts regarding relevant updates.

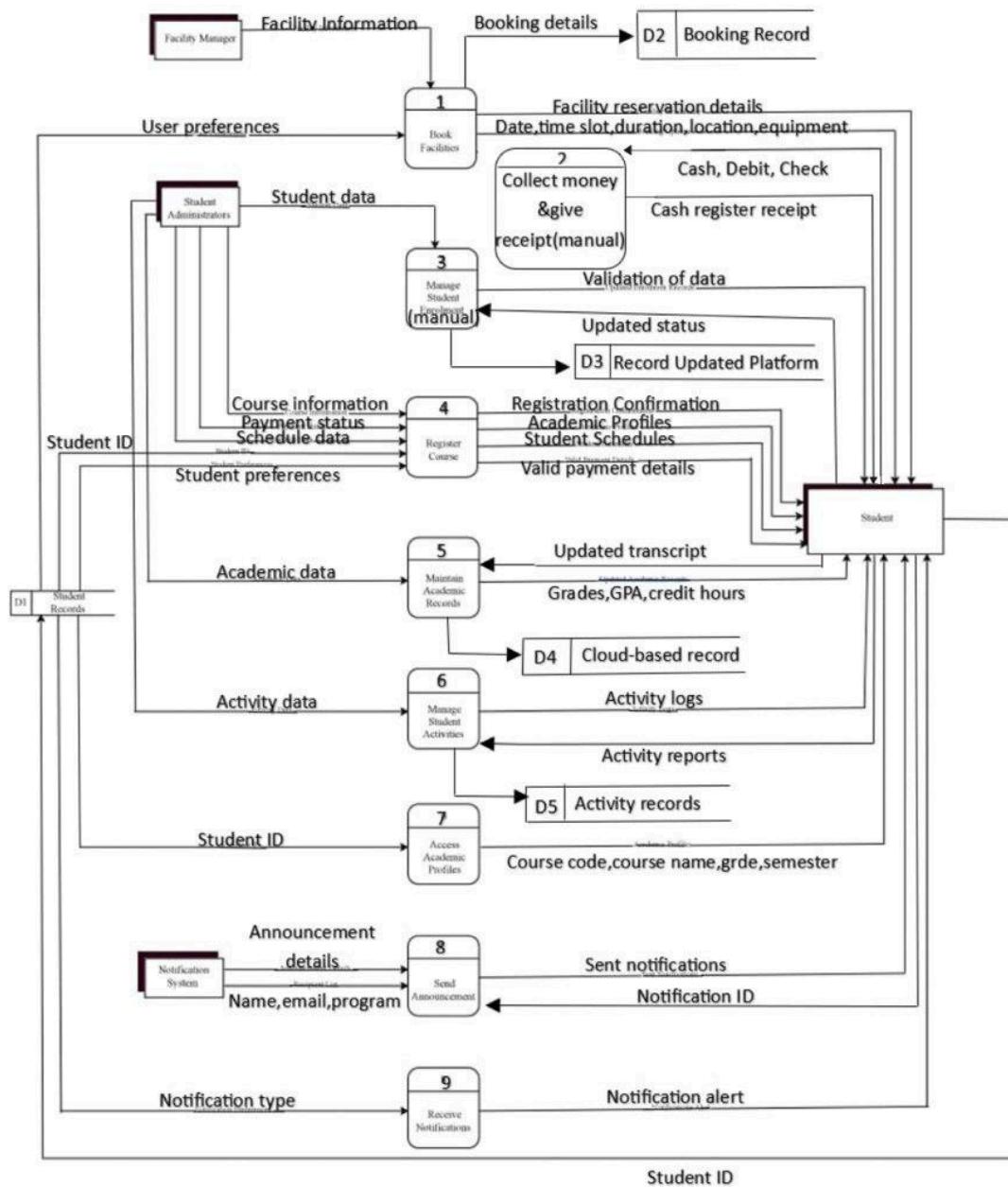
Refer to: Decision Tree

Unresolved Issues: Ensuring delivery of notifications and managing user preferences efficiently.

These process specifications outline the key aspects of each module, including the logic, input, and output data flows, ensuring the CRMS functions effectively and meets the needs of its users.

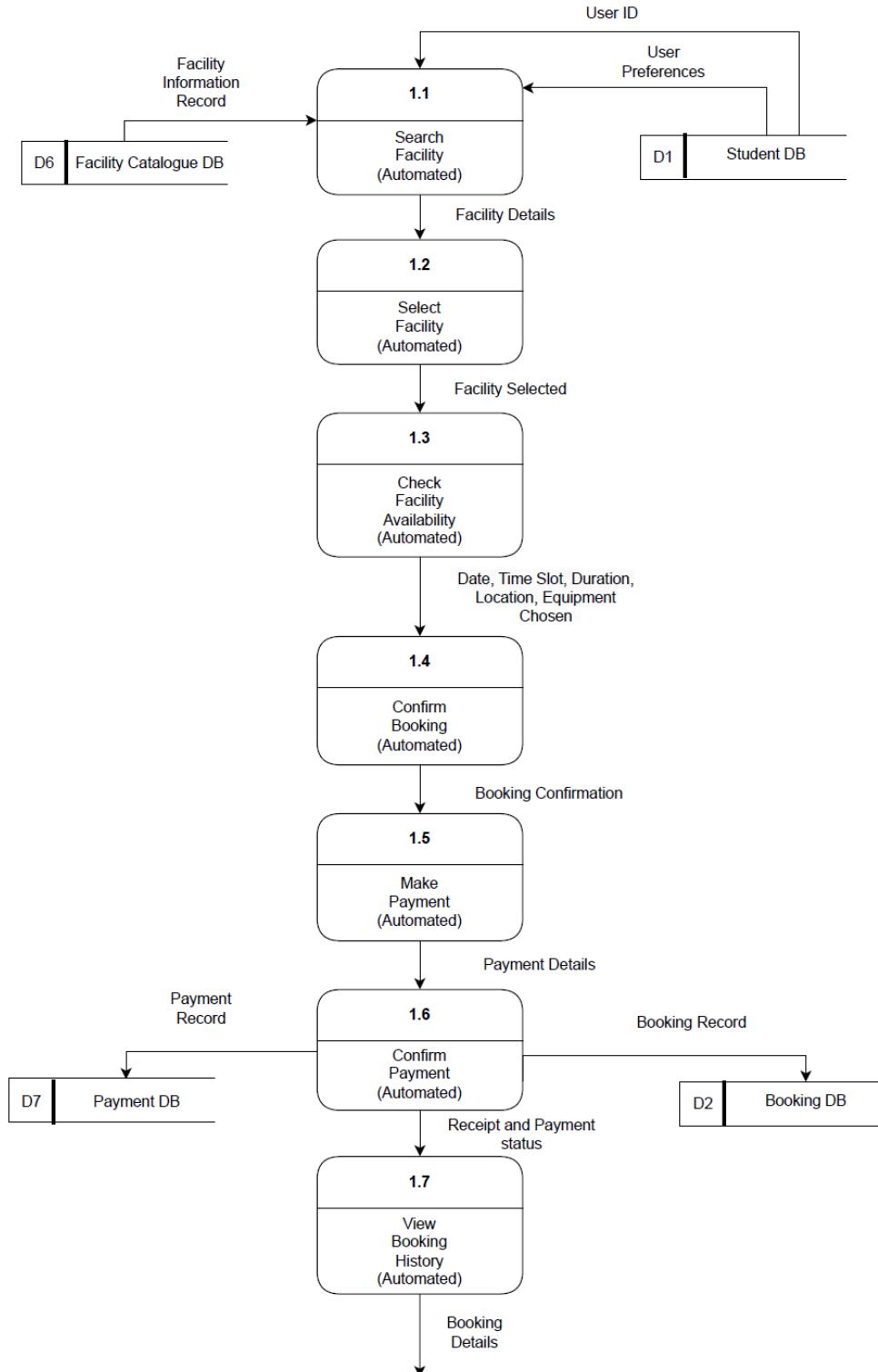
7.0 PHYSICAL SYSTEM DESIGN

7.1 Diagram 0

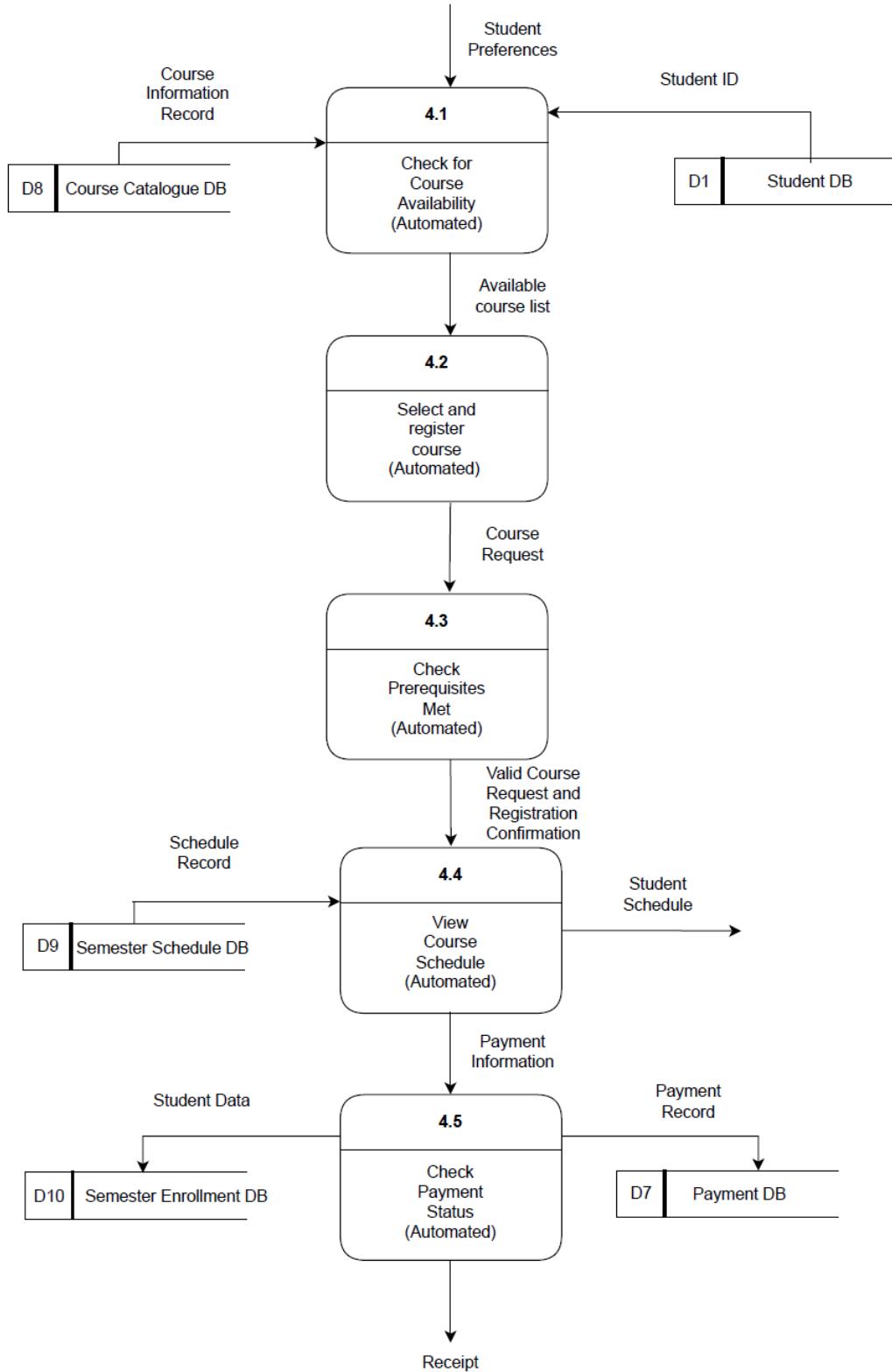


7.2 Child Diagram

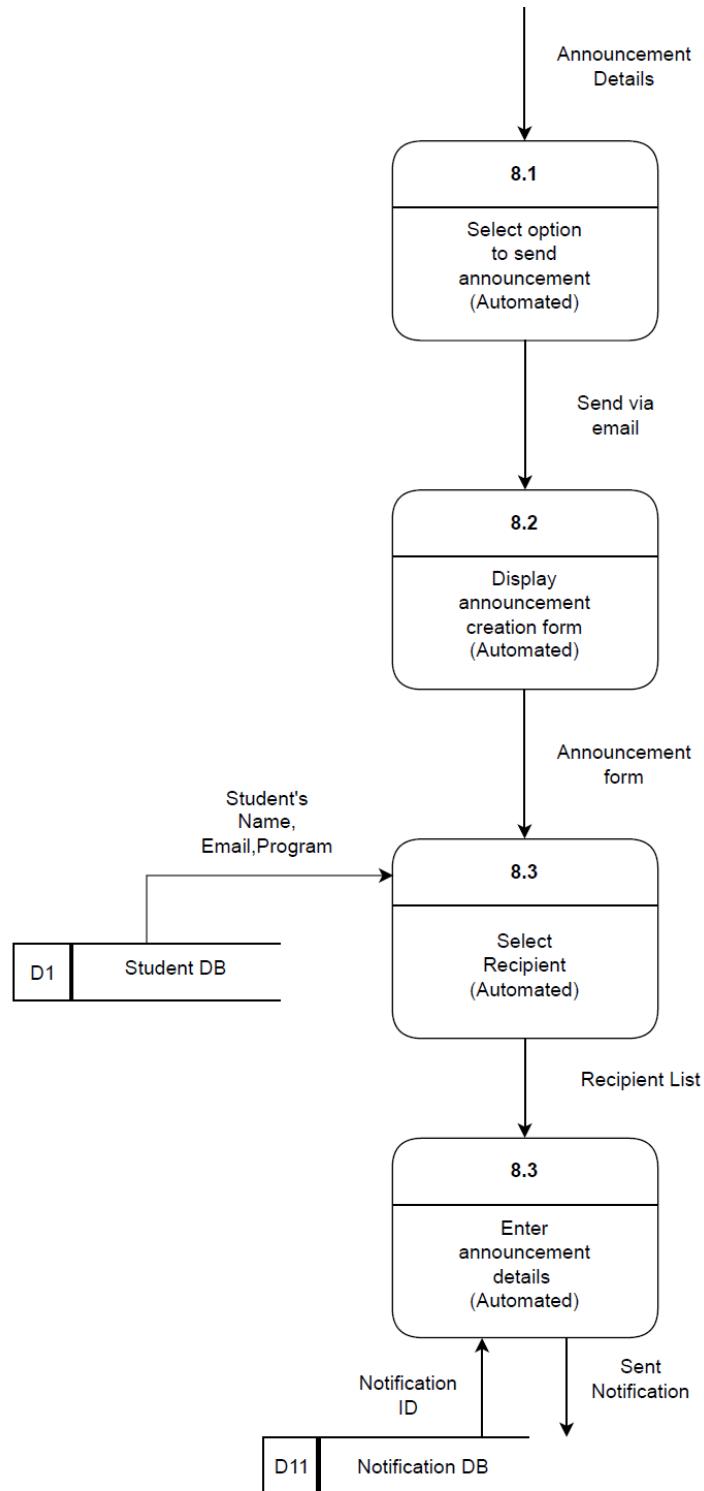
- Process 1 - Book Facilities



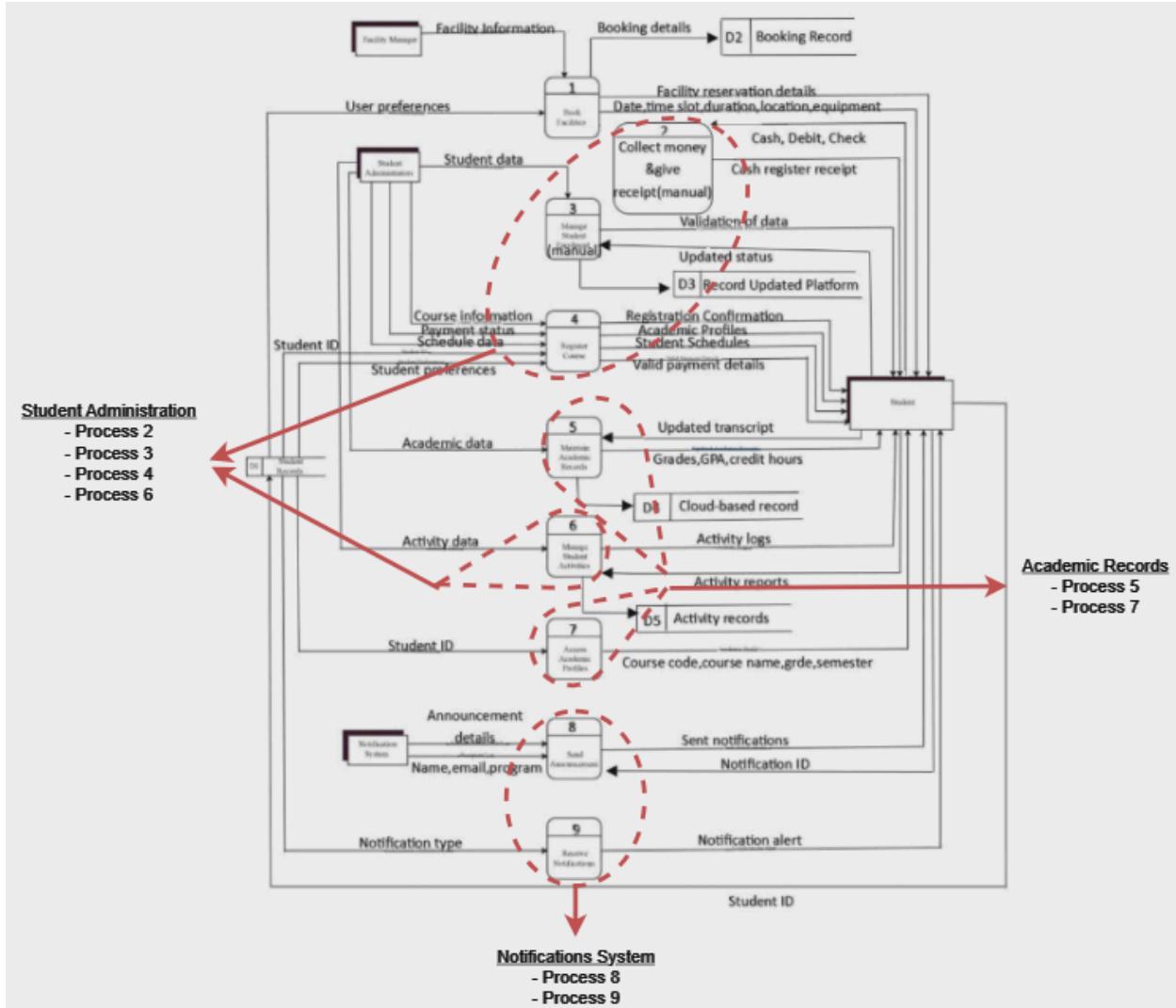
- Process 4 - Register Course



- **Process 8 - Send Announcement**



7.3 Partitioning



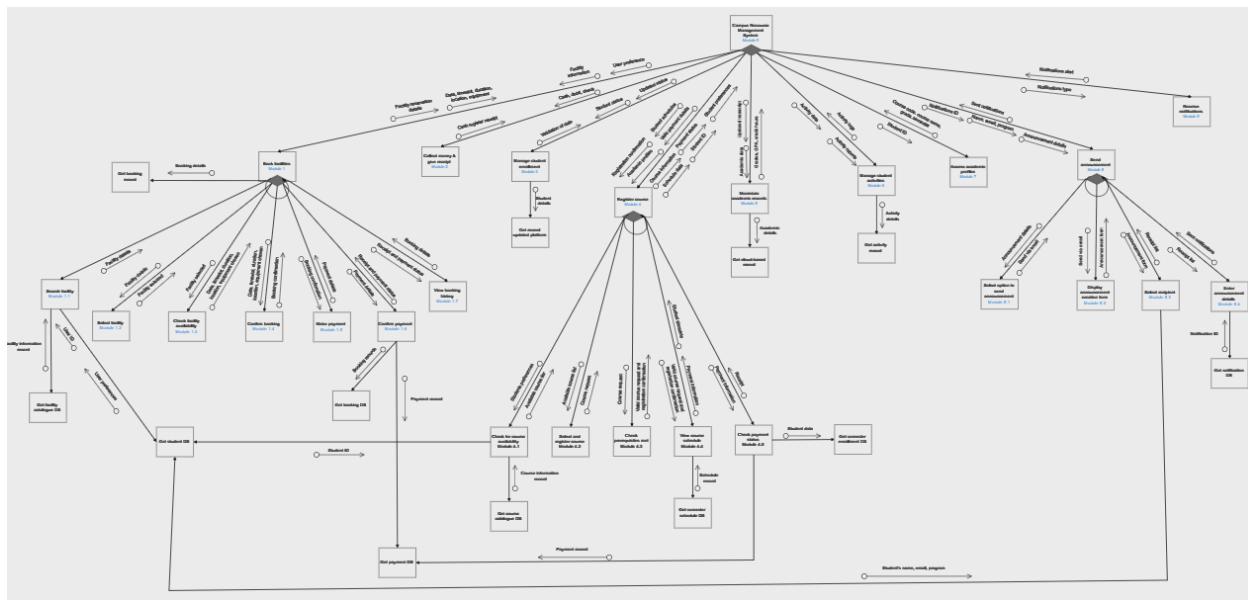
7.4 CRUD Matrix

Activity	Student Record	Payment Record	Booking Record	Course Record	Academic record	Activity Record	Notifications
Book Facilities	RU	RU	CRU				
Manage student Enrolment	CRU			CRU			
Register Course	RU	RU		CRU			
Maintain Academic Records					CRU		
Manage Student Activities						CRU	
Access Academic Profile	R			R	R	R	
Send Announcement	R						CR
Receive Notifications							R

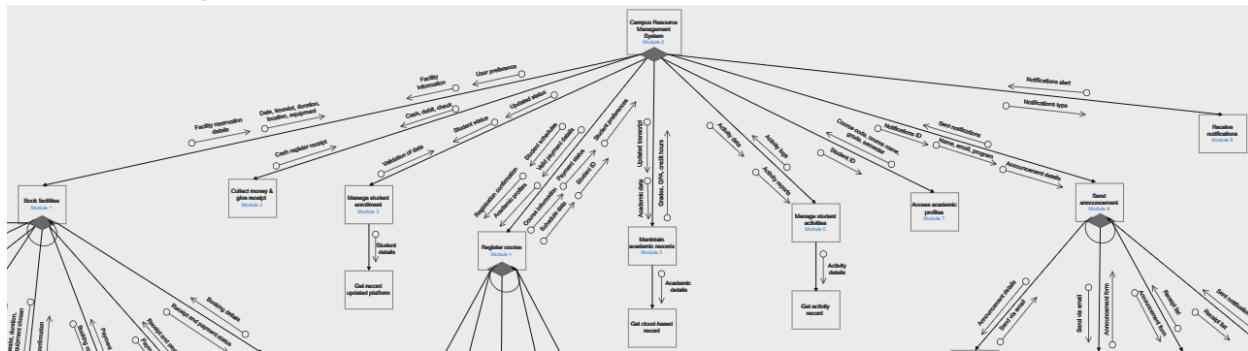
7.5 Event Response Table

EVENT	SOURCE	TRIGGER	ACTIVITY	RESPONSE	DESTINATION
Book Facilities	Student	Request to book facility	Update Booking Record	Confirmation of booking	Student
Manage Enrollment	Administrator	Enroll student	Create/Update Student Record, Create/Update Course Record	Enrollment Confirmation	Administrator
Register Course	Student	Register for a course	Update Booking Record, Update Course Record	Registration Confirmation	Student
Maintain Academic Records	Administrator	Update academic records	Update academic records	Updated record confirmation	Administrator
Manage Student Activities	Administrator	Organize student activities	Update Activity Record	Activity update confirmation	Administrator
Access Academic Profile	Student	View academic profile	Read Student Record, Read Payment Record, Read Booking Record, Read Course Record	Display profile details	Student
Send Announcement	Administrator	Post an announcement	Create/Read Notifications	Announcement sent	Administrator
Receive Notifications	Student	Notification received	Read Notifications	Display notification	Student

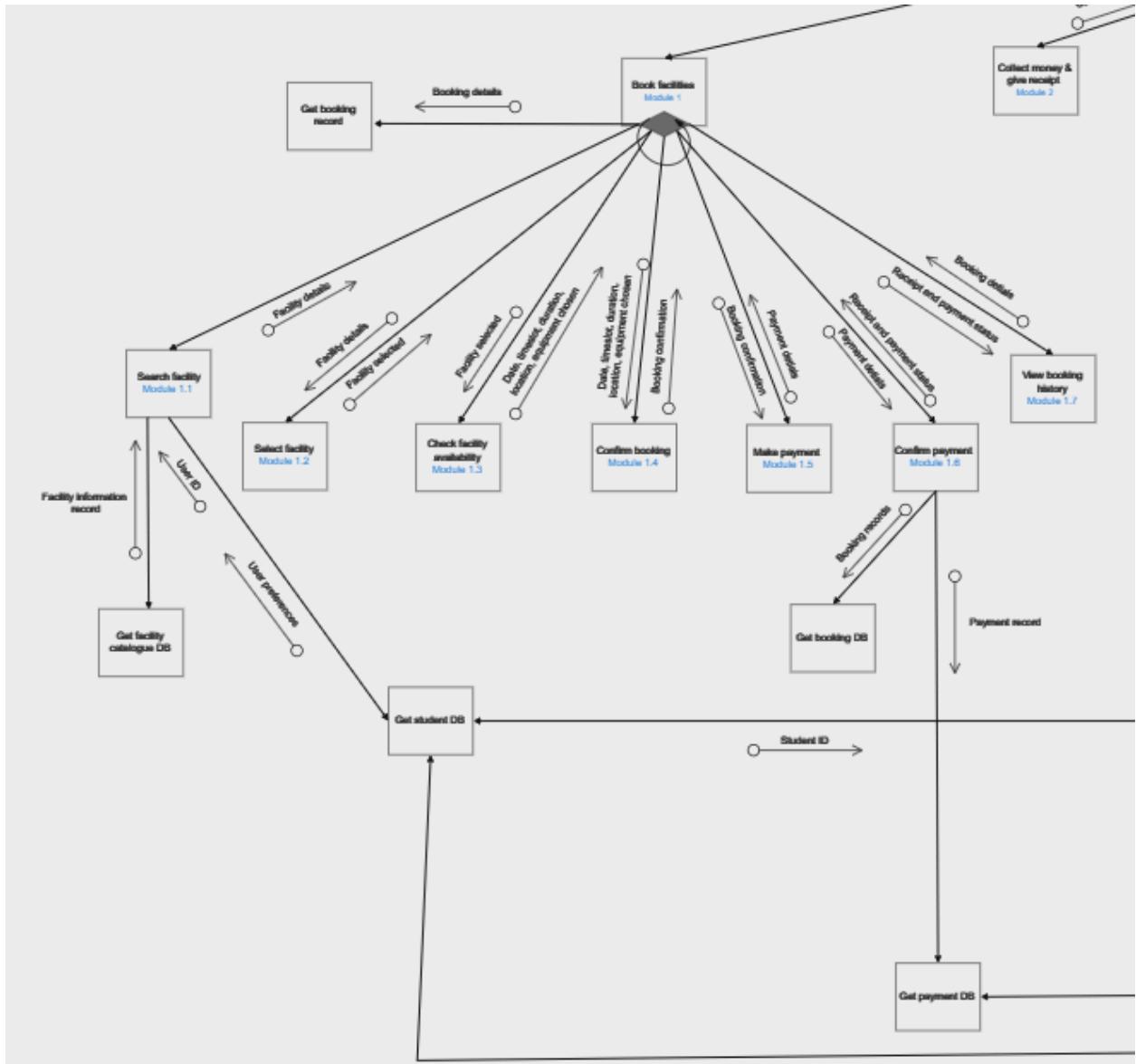
7.6 Structure Chart



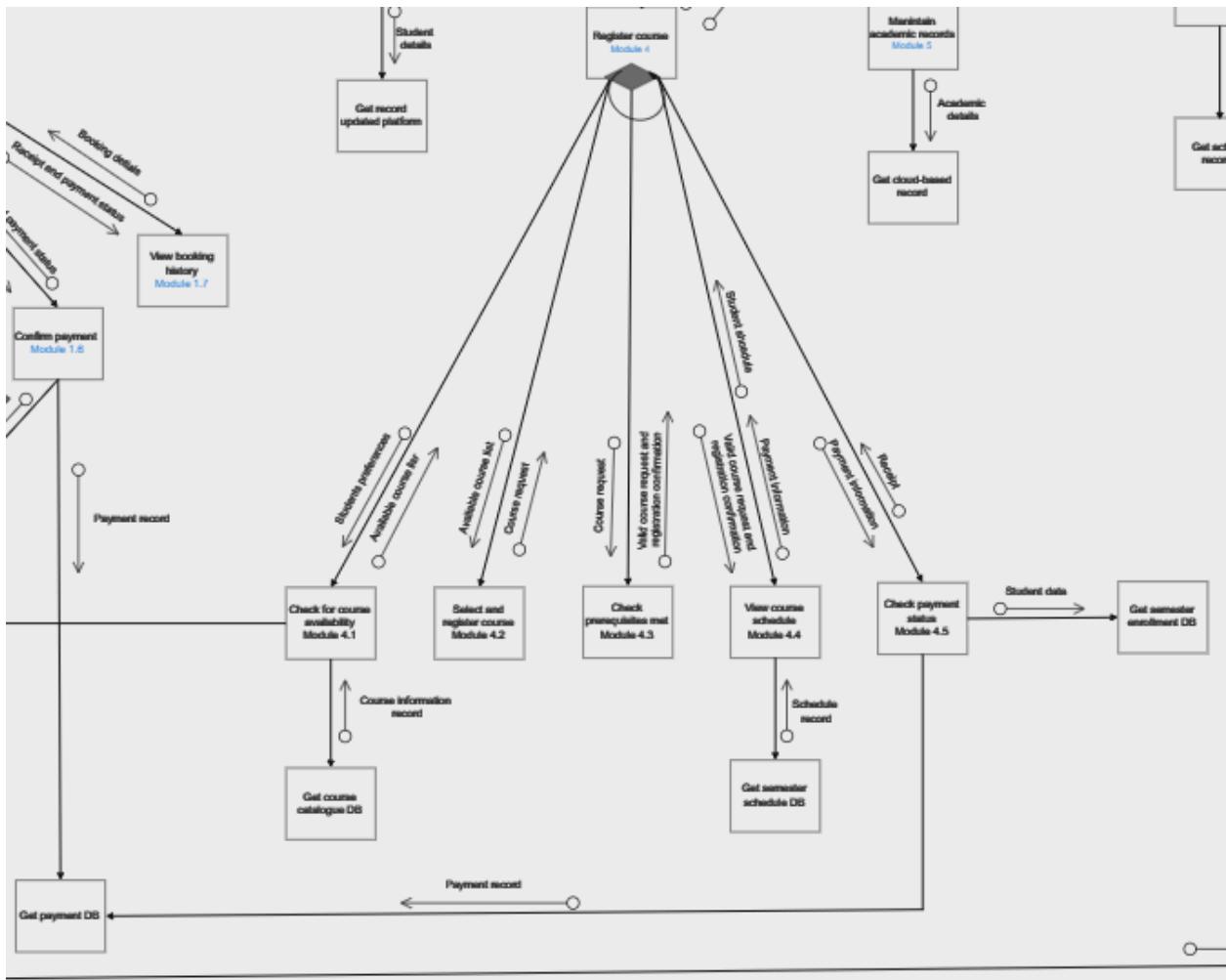
Context Diagram



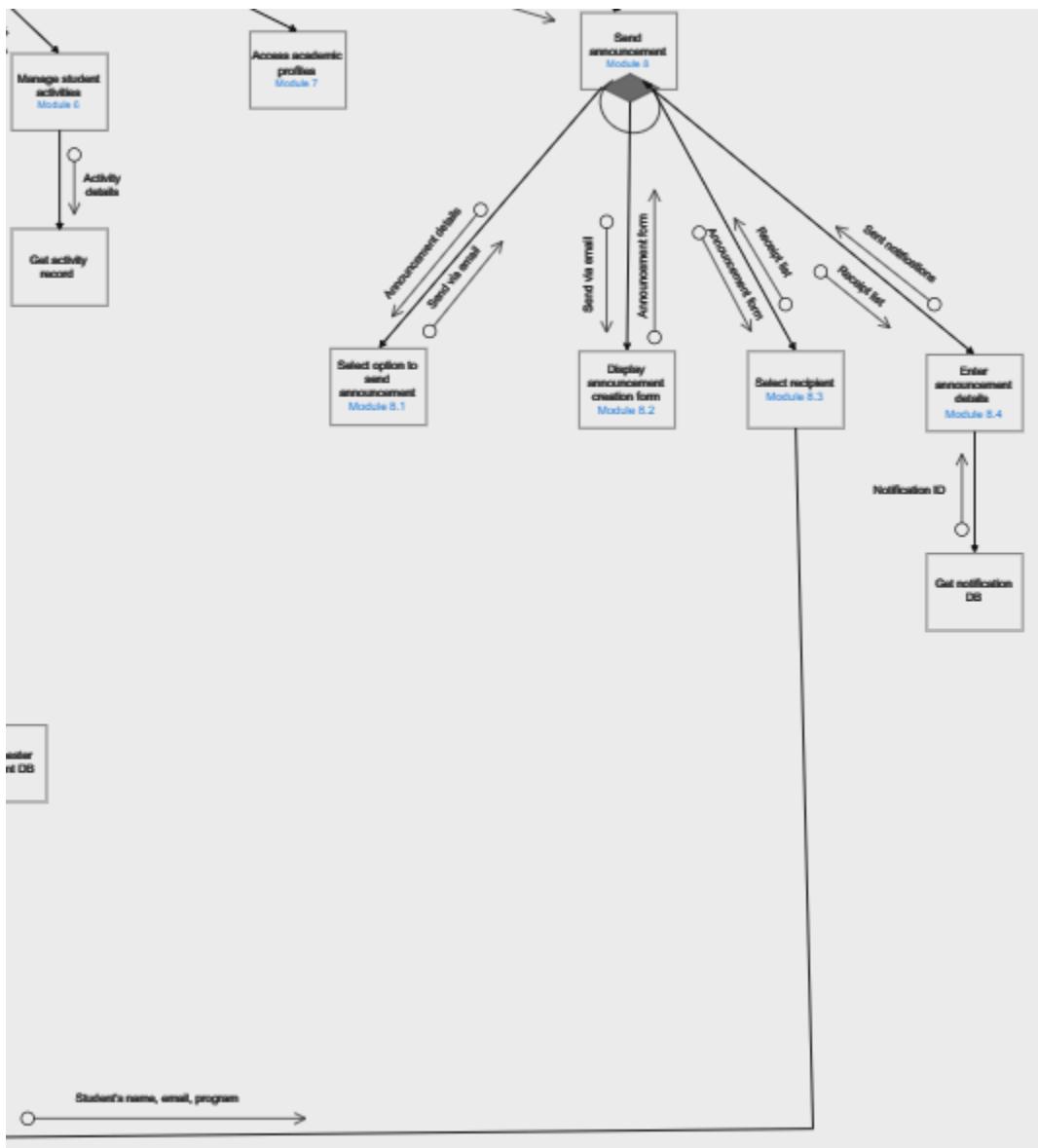
Process 2



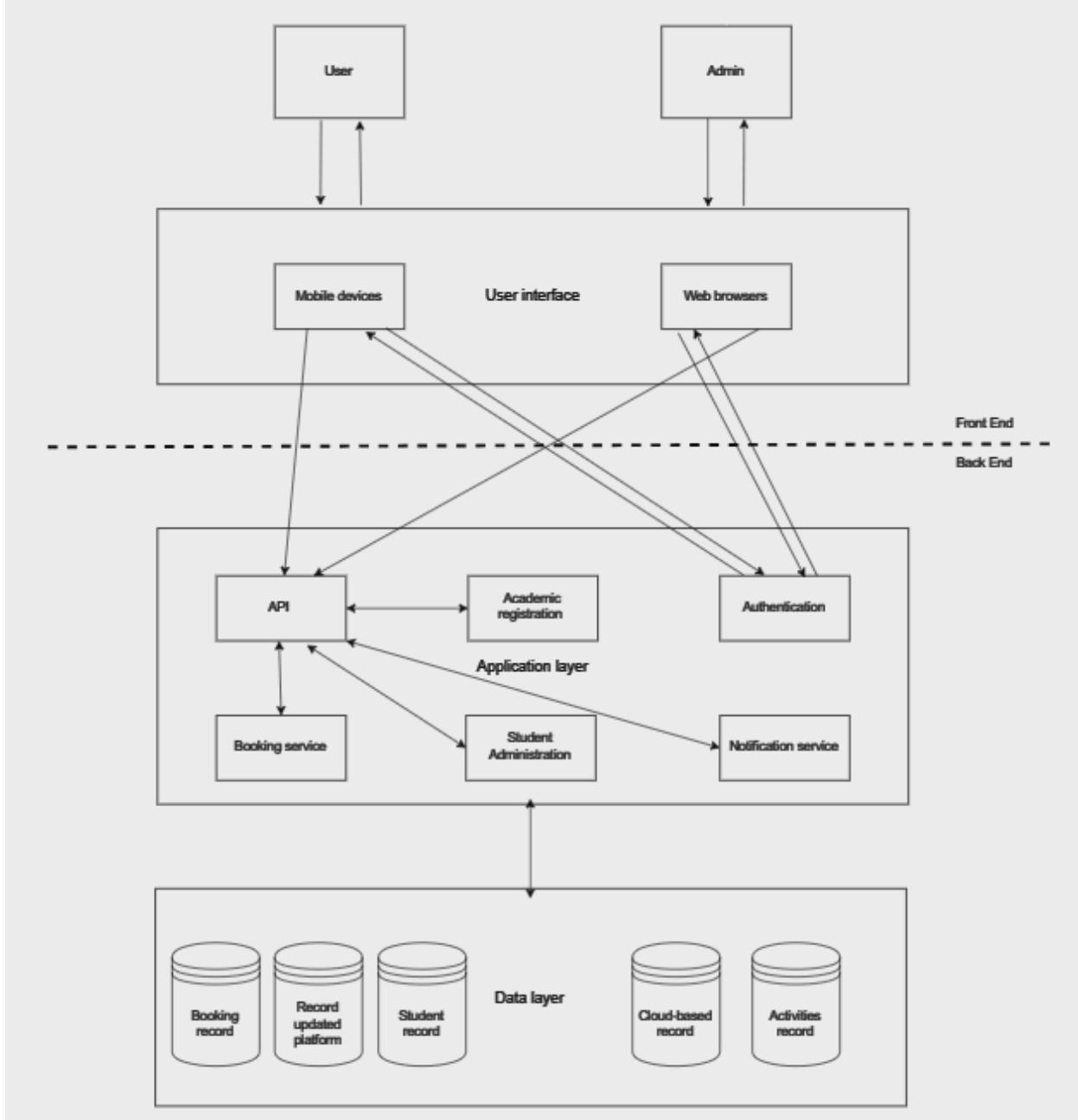
Process 4



Process 8



7.7 System Architecture



8.0 SYSTEM WIREFRAME

The wireframe illustrates the user interface for the CRMS.UTM system, featuring five distinct screens:

- Login Screen:** Displays the CRMS.UTM logo and a "Login" button. Below it, a placeholder text "Sign in to continue" is followed by input fields for "Name" and "Password", and a "Log In" button.
- Welcome Screen:** Shows a "WELCOME TO CRMS!" message above a "NEWS" section with a megaphone icon. It includes three main buttons: "FACILITY BOOKING" (with a calendar icon), "STUDENT MANAGEMENT" (with a person icon), and "COMMUNICATION & NOTIFICATION" (with a bell icon).
- Facility Booking Screen:** A two-step process. Step 1 shows "AVAILABLE FACILITIES" (Recreational Facilities: Gymnasium, Swimming Pool, Sports Fields; Technology and Innovation Centers; Student Services; Event Spaces; Transportation). Step 2 shows "AVAILABLE TIME SLOT" (Duration: 05:00 PM ->>> 06:00 PM) and "SELECT PAYMENT METHOD" (Cash, Online Banking, TNG). Both steps include "CONFIRM BOOKING" buttons.
- Facility Booking Confirmation Screen:** Displays booking details: Booking ID FB008300, Facility Swimming Pool, Date 31 August 2024, Time Slot 5:00 PM -- 6:00 PM, and Payment Method Cash RM 10.00. A "Successful" message and a "Thank You! Have a nice day" note are also present.
- Student Dashboard Screen:** A central hub with tabs: "ACADEMIC PROFILE" (Student Name: PETER ONG, Matrice Number: A23CS0123, Contact Number: 012-3456789, Email: petero201@gmail.com), "COURSE REGISTRATION", "VIEW SCHEDULE", and "TRACK PROGRESS". It also features a "Student dashboard" summary card with grades A, B, L, C, D and a CRMS.UTM logo.
- Academic Profile Screen:** Shows student details: STUDENT NAME : PETER ONG, MATRICE NUMBER : A23CS0123, CONTACT NUMBER : 012-3456789, EMAIL: petero201@gmail.com. It includes tabs for PROFILE and STATUS, and displays academic information like FC (First Class), Bachelor of Computer Science(Cybersecurity), 1/SECRH, and a GPA of 3.33.
- Course Registration Screen:** Allows users to "Register for New Courses". It lists courses with their IDs, names, and credits (e.g., CS101, Intro to CS, 3; MATH201, Calculus I, 4; HIST105, Ethics, 2). A table for course registration is shown with columns: course ID, Course Name, Credits. A search bar for "Enter Course ID to Register:" and buttons for "[REGISTER]" and "[BACK]" are included.

Drop Courses

Enter Course ID to Drop:

Course ID	Course Name	Credits
CS101	Intro to CS	3
MATH201	Calculus I	2
HIST105	Ethics	4

[DROP] [BACK]

View Registered Courses

Course ID	Course Name	Credits
CS101	Intro to CS	3
MATH201	Calculus I	4
HIST105	Ethics	2

View Schedule

Day	Time	Course ID
Monday	9:10:30	CS101
Tuesday	11:00-12:30	MATH201
Wednesday	10:00-2:30	HIST105

[Back] [Next]

Track Progress

Total Credits Earned: [Redacted]

Courses Completed:

Course ID	Course Name	Grade
CS101	Intro to CS	A
ATH201	Calculus I	A+
HIST105	Ethics	A-

GPA: [Redacted]

[Back] [Next]

Create Announcement

Announcement's Title: PROMOTION OF EBOOK PROPOSAL

Announcement's Details:

Now is your chance to shape the library's collection! For the first time, UTM Library is inviting all students to suggest e-book titles. Seize the opportunity - we'll make it yours!

Visit [bit.ly/sugget-e-purchase-manual](http://utl.sugget-e-purchase-manual) for details. Your e-book suggestions will enhance our precious electronic collections for the entire UTM community.

Suggestion submissions are open from February 1st to October 31st, 2024. Don't miss out on this golden opportunity!

Attachment: Choose File

Notification Type: Email [checked] Pop-up [checked]

[Back] [Next]

Select Recipients

Search: [Search Bar]

Program: [Program Selection]

Year: [Year Selection]

Aminah
 aminah@graduate.utm.my (SECRH)

Abu Bakar
 abubakar@graduate.utm.my (SECJH)

Vishnu
 vishnu@graduate.utm.my (SECVH)

....

[Select all] [Deselect all] [Confirm]

[Back] [Next]

Review Announcements

Title: PROMOTION OF EBOOK PROPOSAL

Message:

Now is your chance to shape the library's collection! For the first time, UTM Library is inviting all students to suggest e-book titles. Seize the opportunity - we'll make it yours!

Visit [bit.ly/sugget-e-purchase-manual](http://utl.sugget-e-purchase-manual) for details. Your e-book suggestions will enhance our precious electronic collections for the entire UTM community.

Suggestion submissions are open from February 1st to October 31st, 2024. Don't miss out on this golden opportunity!

Attachment: Promotion.pdf

Recipients: [Recipient Selection]

Notification Type: Email [checked] Pop-up [checked]

Edit Send

Settings

Notifications & Sounds

Do Not Disturb: [Switch]

Notification preference

Text tone: Pop ding >

Email: [Switch]

Pop-up: [Switch]

Play sounds and vibrations while using the app and show message previews in alerts.

New Announcement

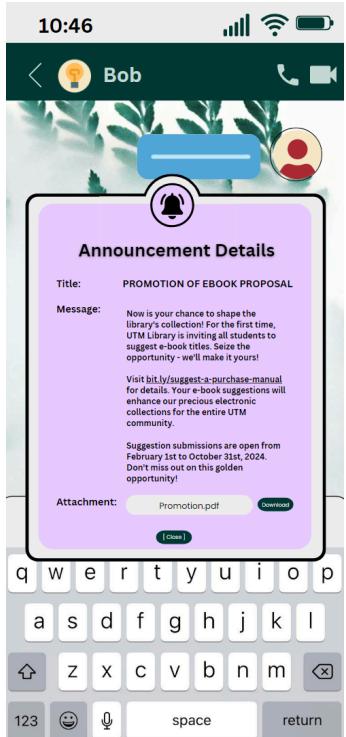
10:46

Title: PROMOTION OF EBOOK PROPOSAL

Message: Now is your chance to shape the ...

[View Details] [Dismiss]

Notification preview: Lightbulb icon, three horizontal lines, blue bar, person icon, lightbulb icon, speech bubbles, thumbs up, heart, smiley face, keyboard.



9.0 SUMMARY of PROPOSED SYSTEM

In summary, the proposed Campus Resource Management System (CRMS) provided a more efficient and user friendly platform in order to enhance the user experience in the campus. The CRMS system revolutionized and modernized the management and the operation processes of the campus resources. This system promotes eco-friendly practices as most of the processes are digitized and automated, which helps a lot in saving paper as bookings facilities, retrieve data and all the communication within the departments in the campus can be done through the system. Furthermore, it indeed helps to save time and also manpower as all the processes are modernized. CRMS is a system that tracks the real time availability of the campus resources and facilities through which users are able to check the availability of the facilities instantly using the system. Hence, the system indirectly speeds up the reservation process. Users are able to make a reservation easily by using the system without even going to the department. In addition, it also allows users to access all the information easily within seconds as all the information and data are stored in the system database.

MEETING LOG FOR SADM PROJECT

Date : 18 April 2024

Log No.: 1

TEAM NAME: 3 Little Ducks

TEAM MOTTO: Collaborate, Innovate, Achieve

TEAM GROUND RULE: Maintain clear communication, respect diverse perspectives, adhere to deadlines, and ensure accountability to achieve our common goals.

Attendance:

Group Member Name	Signatures
Cornelia Lim Zhi Xuan (A23CS5044)	<i>Cornelia</i>
Melody Lui Ruo Ning (A23CS0244)	<i>lui</i>
Leo Min Xue (A23CS0237)	<i>Michelle</i>

Discussion Results/Findings:

We have discussed the project proposal and conducted a thorough background study on the current systems within university campuses. From this study, we identified several issues faced by administrators and stakeholders, including inefficient announcement delivery and management, poor communication and high possibility of human error in administrative tasks. We also identified our objectives, system requirements and constraints. We proposed the Campus Resource Management System (CRMS) to address these inefficiencies. We discussed our project

timeline, using the Gantt chart and PERT diagram as planning tools. This timeline was crucial for ensuring that events stayed on track, helping us assess the project's duration, determine necessary resources, and plan the task order. Clear objectives and scope were defined, supported by a detailed Work Breakdown Structure (WBS).

Members Contributions/Ideas:

Group Member Name	Contributions/Ideas
Cornelia Lim Zhi Xuan	<ul style="list-style-type: none"> ● Introduction ● Background study ● Pert chart
Melody Lui Ruo Ning	<ul style="list-style-type: none"> ● Problem statement ● Proposed solution ● Gantt chart
Leo Min Xue	<ul style="list-style-type: none"> ● Objective ● Scope of the project ● Human resource ● WBS ● Benefit and overall summary

MEETING LOG FOR SADM PROJECT

Date : 18 May 2024

Log No.: 2

TEAM NAME: 3 Little Ducks

TEAM MOTTO: Collaborate, Innovate, Achieve

TEAM GROUND RULE: Maintain clear communication, respect diverse perspectives, adhere to deadlines, and ensure accountability to achieve our common goals.

Attendance:

Group Member Name	Signatures
Cornelia Lim Zhi Xuan (A23CS5044)	<i>Cornelia</i>
Melody Lui Ruo Ning (A23CS0244)	<i>lui</i>
Leo Min Xue (A23CS0237)	<i>Michelle</i>

Discussion Results/Findings:

Extracting and updating information from Phase 1, we begin with an overview of the project, detailing the problem statement and proposed solutions. Using interactive methods, such as interviews and surveys, we gather information about current systems (AS-IS), identifying inefficiencies and defining clear objectives. This process informs our requirement analysis to understand existing business processes comprehensively and identify between functional and non-functional requirements. Moving forward, we gathers information about what the users want

in the new systems (TO-BE) based on the current system (AS-IS), we create Logical DFD (AS-IS) system based on current business process that include context diagram, Diagram 0, and relevant child diagrams.

Members Contributions/Ideas:

Group Member Name	Contributions/Ideas
Cornelia Lim Zhi Xuan	<ul style="list-style-type: none"> • Current business process • Functional requirement • Non-functional requirement • Context diagram • Diagram 0
Melody Lui Ruo Ning	<ul style="list-style-type: none"> • Method used • Summary from method used • Requirement analysis • Current business process • Functional requirement • Non-functional requirement
Leo Min Xue	<ul style="list-style-type: none"> • Current business process • Functional requirement • Non-functional requirement • Child diagram • Summary

MEETING LOG FOR SADM PROJECT

Date : 10 June 2024

Log No.: 3

TEAM NAME: 3 Little Ducks

TEAM MOTTO: Collaborate, Innovate, Achieve

TEAM GROUND RULE: Maintain clear communication, respect diverse perspectives, adhere to deadlines, and ensure accountability to achieve our common goals.

Attendance:

Group Member Name	Signatures
Cornelia Lim Zhi Xuan (A23CS5044)	<i>Cornelia</i>
Melody Lui Ruo Ning (A23CS0244)	<i>lui</i>
Leo Min Xue (A23CS0237)	<i>Michelle</i>

Discussion Results/Findings:

We thoroughly analyzed and designed the Campus Resource Management System (CRMS) by extracting and updating information from Phase 1 and Phase 2. We then documented user requirements for the new system (TO-BE) and created context diagrams, logical and physical Data Flow Diagrams (DFDs). Our process included developing logical and physical child diagrams, a CRUD matrix, event response table, partitioning and structure chart. We also detailed the system's architecture and created a system wireframe to visualize the design. We

have developed a system prototype based on system design (Phase 3) for the input and output design of the developed system. Lastly, we have made a non-working prototype video for a more detailed explanation.

Members Contributions/Ideas:

Group Member Name	Contributions/Ideas
Cornelia Lim Zhi Xuan	<ul style="list-style-type: none"> • Logical Child Diagram • Physical Child Diagram • CRUD • Prototype • Meeting log
Melody Lui Ruo Ning	<ul style="list-style-type: none"> • Logical Context Diagram • Physical Diagram 0 • Process Specification • Event Response Table • Prototype • Meeting log

Leo Min Xue

- Partitioning
- Structure chart
- System architecture
- Summary
- Prototype
- Meeting log