“DESIGN AND DEVELOPMENT OF AN ONLINE STUDENT SERVICES SYSTEM FOR QUEZON CITY UNIVERSITY”

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CHAPTER 1: CAPSTONE PROJECT BACKGROUND

PROJECT CONTEXT

The globe is turning into a small society completely blended with technology, thus, giving rise to electronic services. Electronic services (or e-service) are services that can be delivered or processed through information and communication technologies. These services are growing in importance as they expand in many aspects such as health, business, education, and government.

Quezon City University is a state-funded public university located in Quezon City. It is directly under the jurisdiction and care of the Quezon City government. First opened for the public in 1994 as a small polytechnic offering technical and vocational courses, it has since then grown to accommodate different fields of studies. It was promoted in 2001 to a university status. In 2021, the university was finally recognized as a full-pledged university of the country. The main campus of QCU is located along Quirino Highway in Barangay San Bartolome, Novaliches. There are two satellite campuses located in San Francisco and Batasan Hills respectively.

The university has utilized Google Forms to handle various digital paperwork and Google Mail to conduct formal messages and notices between and among students and faculty members. In addition, the university also uses Facebook to post instructions and make announcement to a wider student audience. Then, there is also the official website as additional platform to get in touch with QCU.

PROJECT CONTEXT

The use of Facebook has helped a lot in the past years and even more during the pandemic but some drawbacks still remain. The Quezon City University runs multiple offices that have individual Facebook pages. These Facebook pages have been used to post instructions and Google Forms for different student services as well as post events and activities. The problem with this is that keeping up with all these pages is difficult and some posts can be drowned out by more popular and latest posts. Moreover, students must reach out to different offices or departments to complete one or more transactions which could prove tedious and time-consuming. Another challenge that QCU is also facing is the lack of manpower to accommodate volumes of student requests for assistance. As a result, QCU students and staff are struggling to meet the challenges of existing processes.

To that end, the researchers will develop an online student services system for Quezon City University. The proposed online system will cater student services from different offices of Quezon City University, namely, the **Office of Student Affairs and Services (OSAS), University Registrar, Guidance and Counseling, Library, Clinic, and Finance**. The student services are as follows: **borrowing of laptop and pocket Wi-Fi, laptop repair, returning of laptop and pocket Wi-Fi, request for university ID, academic document request, submission of lacking requirements, counseling, request for good moral certificate, library card application, library online reference service, library student appointment request, online consultation, request for an order of payment, and lastly, payment of tuition.**

PURPOSE AND DESCRIPTION

This study will focus on the designing and developing of an Online Student Services System for Quezon City University. The system will allow students to avail different student services from different offices of Quezon City University. The study aims to accelerate and improve the processing of all the existing student services in Quezon City University.

There are three user-level types: **(1) System Admin (2) Admin, and (3) Student**. The **System Admin has full access to the system**. It can view, add, delete, and modify all user accounts as well as view and manage ongoing services. The system will also have an audit trail which can only be viewed by the system admin. **Admin, on the other hand, is the one responsible for processing the transactions made by students**. He or she can access the system by logging in using the credentials given by the System Admin. The access is limited only to the services under the department it is assigned. It can view and update ongoing services as well as manage appointments made by the students.

Students will need to register and log in to avail student services. During registration, students will need to enter their student ID number and email address, along with other student information such as name, course, and current year level. The System Admin will then validate that information, which in turn, may either allow or deny a student to login.

OBJECTIVES OF THE STUDY

General Objective

The main objective of the researchers is to design and develop an Online Student Services System for Quezon City University.

Specific Objectives

1. To design a website that will cater the student services of Quezon City University.

2. To develop an online service system where students can fill out digital forms and submit soft copies of needed documents.

3. To develop an online service system that will allow students to set up appointments for school services requiring physical presence.

4. To design an online service system that will show the status of the ongoing student service.

5. To design a website for managing student services of Quezon City University.

6. To evaluate the proposed online student service system in terms of its functionality, reliability, user-friendliness, accessibility, and security.

SCOPE

1. The proposed web-based system will have three (3) user-access levels:

    a. System Admin can approve or deny a student account during registration, can manage all logs and activities of users as well as enable and disable available student services.

    b. Admin can view and update student services availed by students. It can also view appointments and set available dates for appointments.

    c. Student has access to all student services. It can also set appointments and track all of the student services they availed.

2. The online student services system has an appointment system for some student services that will require the physical presence of the students.

3. The online student services system has an audit trail where the system admin can view and manage logs and activities of users.

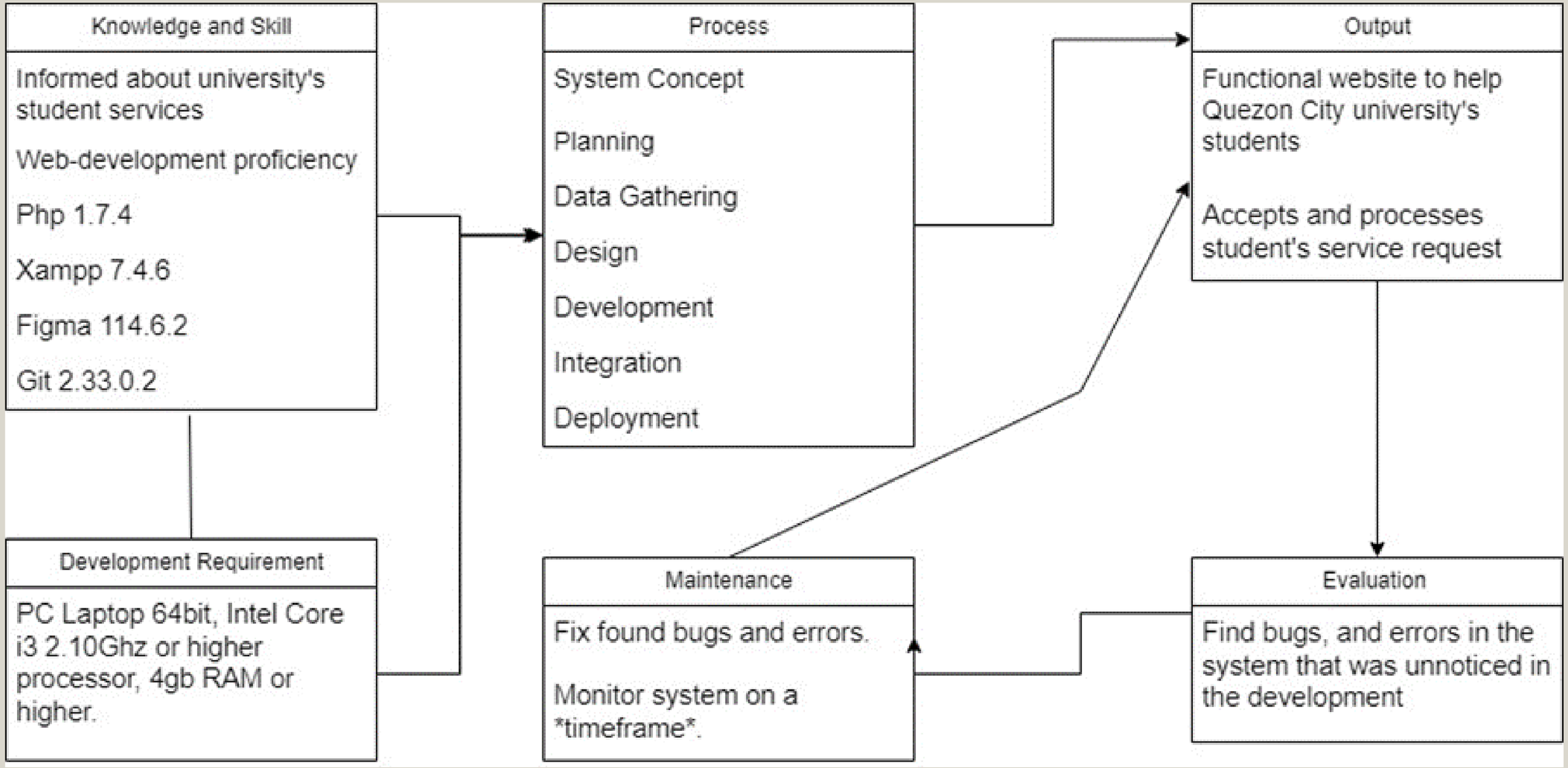
LIMITATIONS

1. The proposed online student services system is only limited to enrolled students of Quezon City University.

2. The proposed online student services system does not extend the service to non-student members of the QCU community like the teaching staff.

3. The proposed online student services system has no function for delivering a requested item.

CONCEPTUAL FRAMEWORK



SIGNIFICANCE OF THE STUDY

QCU Students

The main beneficiaries of the system would be the student since they can begin the processing for the services they need without being subjected to the limits of geography, distance and time as often prescribed by traditional means.

QCU Staff

The system, to some degree, can alleviate the workload of the QCU staff by providing an easy channel to process student-related services.

QCU

Because it is beneficial to both QCU students and staff, it will automatically affect the university as a whole. The ease and convenience that will be provided by the centralized student service system will more likely boost the reputation of Quezon City University.

Researchers

Future researchers can benefit from the study should they plan to implement similar characteristics for their own organization or campus' e-services; they can also use this study as a case digest or model for an e-service system that they intend to furnish.

CHAPTER 2: REVIEW OF RELATED LITERATURE

LOCAL LITERATURE

- Balcita & Palaoag (2020) delves into the state of school centralized databases as well as the use of technologies to enhance the quality of school services in various educational institutions. The level of positive responses measured based on user feedback proves that the system has, indeed, improved the service quality. Also, the result has provided insights for school managers, students, and guardians to better handle or deal with the school management systems.
- Olipas' (2019) main goal is to resolve the problems involving the office of student affairs in a Philippine-based highschool. The paper examines the handling and ordering of student records, along with the effective delivery of SMS notifications to involved parties (students, parents, guardians). Through the help of the Software Development Life Cycle, a series of data gathering and analyses were done to meet the needs of the study. Moreover, the research team utilized Microsoft Visual Studio, MS VB.NET, MySQLyog, and SQL to construct the intended system. In the end, the system was successfully developed and proved helpful to the school's purposes.

FOREIGN LITERATURE

- Three universities in Erbil, Iraq were sampled for a study that measured the impact of e-service on student satisfaction. The study was done by utilizing convenience sampling to determine the sample population and data was gathered through questionnaires. Three important factors stood out when concluding the study: responsiveness, privacy, and security. The researchers suggested focusing on these key elements when updating the e-services provided by educational institutions (Jameel et al., 2021).
- Tianxiang et al. (2018) explored how student services have integrated into higher education. The collegiate system ushers a reforming trend in student services. Despite giving the administration more vitality and innovation, it also creates issues. To address this, an innovative student services administration system was created as a solution. The end result is a work built on a modular architecture, which aims to enhance student service management against the backdrop of the current collegiate structure. So far, it has been well received by the community.

CHAPTER 3: OPERATIONAL FRAMEWORK

SYSTEM DEVELOPMENT LIFE CYCLE

Planning

This is the initial step of the development. The proponents first discussed the project with the group to start and plan the development of the system. Part of the discussion is the drafting of concept paper as well as the feasibility of the project in terms of cost, time, and manpower. The scope, goals, and boundaries of the system was also defined during this phase. Then, the project team was organized into work groups by assigning them into different roles.

Analysis

The second phase is all about determining and analyzing the requirements of the project. In this stage, great volumes of data are mined and examined thoroughly from all FB pages associated with QCU offices as well as the QCU official website. The purpose of the exercise is to take note of and confirm the many ongoing student services in the university. To further supplement the study, the research proponents have also conducted personal and phone interviews with the stakeholders, including the people behind the offices of Quezon City University, namely, the Office of Student Affairs and Services (OSAS), University Registrar, Guidance and Counseling, Library, Clinic, and Finance. The gathered data were then analyzed, summarized, and transcribed.

SYSTEM DEVELOPMENT LIFE CYCLE

Design

After determining and analyzing the requirements of the project, the designing phase starts. This phase includes the designing of both the front and back end of the system. The front-end developers used Figma to create an overall design or typography of the user interface. During this phase, the proponents also discussed how users will interact with the software and how the software will respond to user inputs as well as specified the hardware and software requirements. The languages that is being used for the front-end are HTML, CSS, and JavaScript while for the back-end are PHPand MySQL.

Development

This phase is the writing or coding of the program. The designs and decisions that were made during the last phase will find their practical applications here. To cover more ground in meeting the objectives, the programmers were divided between front-end and back-end sub-teams. The lead programmer created a GitHub repository for version control to optimize collaboration and corroborate progress with team tasks. So, that each member is aware with the overall state of the project.

SYSTEM DEVELOPMENT LIFE CYCLE

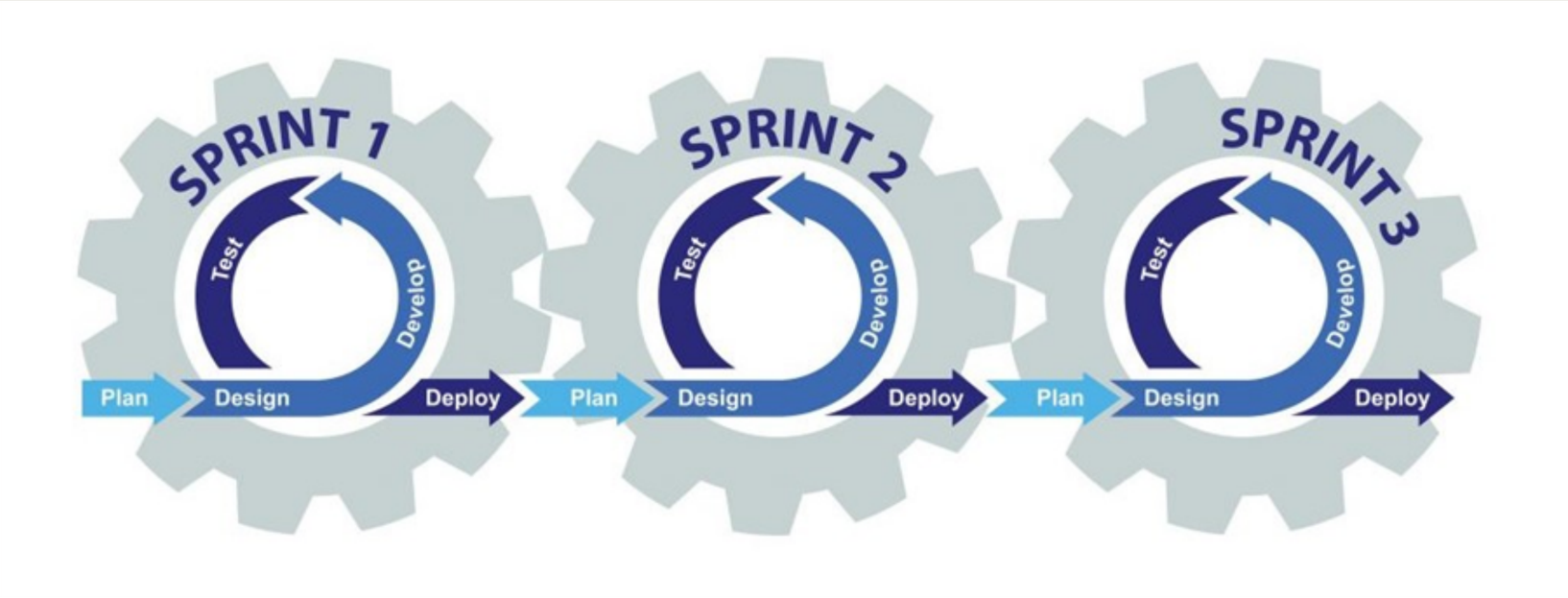
Testing

Following the development phase is the testing and evaluation phase. This is the phase where the developers test each module and features of the system. The system will be launched online using the chosen web hosting provider, which in this case is Heroku. The system will undergo Black Box Testing. The proponents will make a list of test cases to examine the system in terms of functionality, reliability, user-friendliness, accessibility, and security.

Implementation

This phase is still subject to discussion but if the system were to be implemented the proponents will prepare a couple of things such as an Implementation Plan and Letter of Agreement. The proponents will hand-over the system together with the documentation.

SYSTEM DEVELOPMENT METHOD



AGILE METHODOLOGY

The Agile Methodology is the methodology that is being used to develop the Online Student Services System. It uses iterative and incremental software development approaches. Each iteration is treated as a mini software project with all the processes required to deliver a functionality. Each iteration process includes the planning, designing, developing, and testing. The developer's chose the agile method because of its flexibility.

TECHNICALITY OF THE PROJECT

Software Development Requirements

The proponents used Microsoft Windows 10 as the Operating System to enable running software applications to build the system. The languages that was used to develop the system are CSS, JavaScript, HTML, and PHP. The programmers used Sublime Text to type and edit the code for the design and function of the system. XAMPP was used to interpret scripts written in the PHP programming language and to be able to open the developed web application in Google Chrome. The proponents used Microsoft Word to document the development of the project.

Software Implementation Requirements

The proponents will use Microsoft Windows 10 Operating System enable the system to run Google Chrome Web Browser and to view and use the system by accessing the internet, Android Operating System or iOS (or any smartphones with web browsers) to access the system within mobile using web browser.

TECHNICALITY OF THE PROJECT

Hardware Development Requirements

The computer, laptop, mouse, keyboard are the main devices needed when developing a software. The mobile phone is used mostly for communication. The Wi-Fi is needed to connect to the internet.

Hardware Implementation Requirements

Three things are needed to run the system: (1) any computer device, (2) a smartphone, and (3) Wi-Fi. Computer devices and smartphone is needed to be able to check and use the system online. The Wi-Fi is needed to connect to the internet.

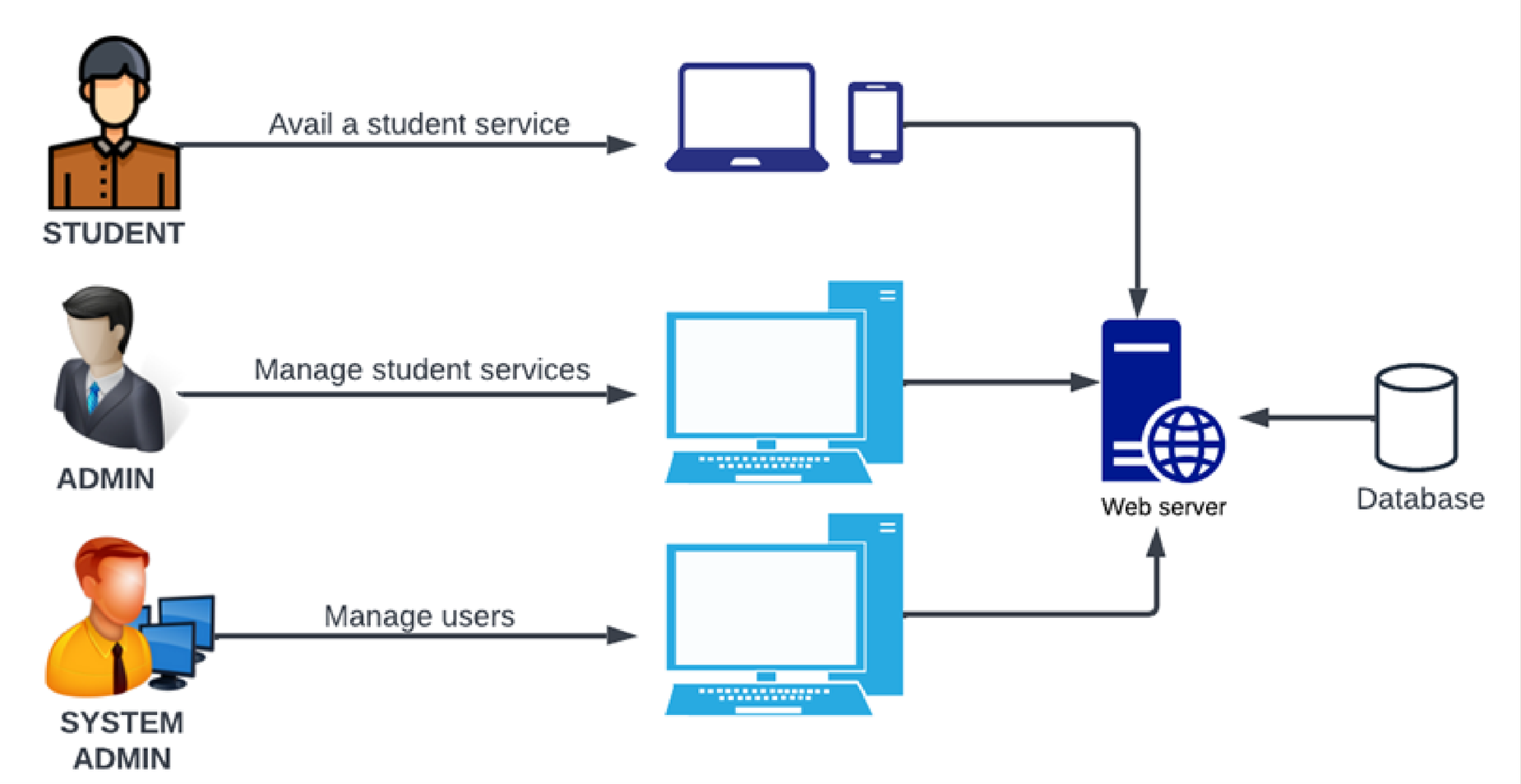
DETAILS OF THE TECHNOLOGIES TO BE USED

The technologies needed to develop, implement, and access the system are Desktop Computer or Laptop and smartphones. The system admin and admin will more likely use laptops and computers in managing the student services. They can only use the laptop or computer that is declared or allowed by the university. As for the students, computer, laptop, or smartphone can be used to access the system and avail different student services. To be able to access the website of the online student services system, it is essential that the user is connected to the internet.

HOW THE PROJECT WILL WORK

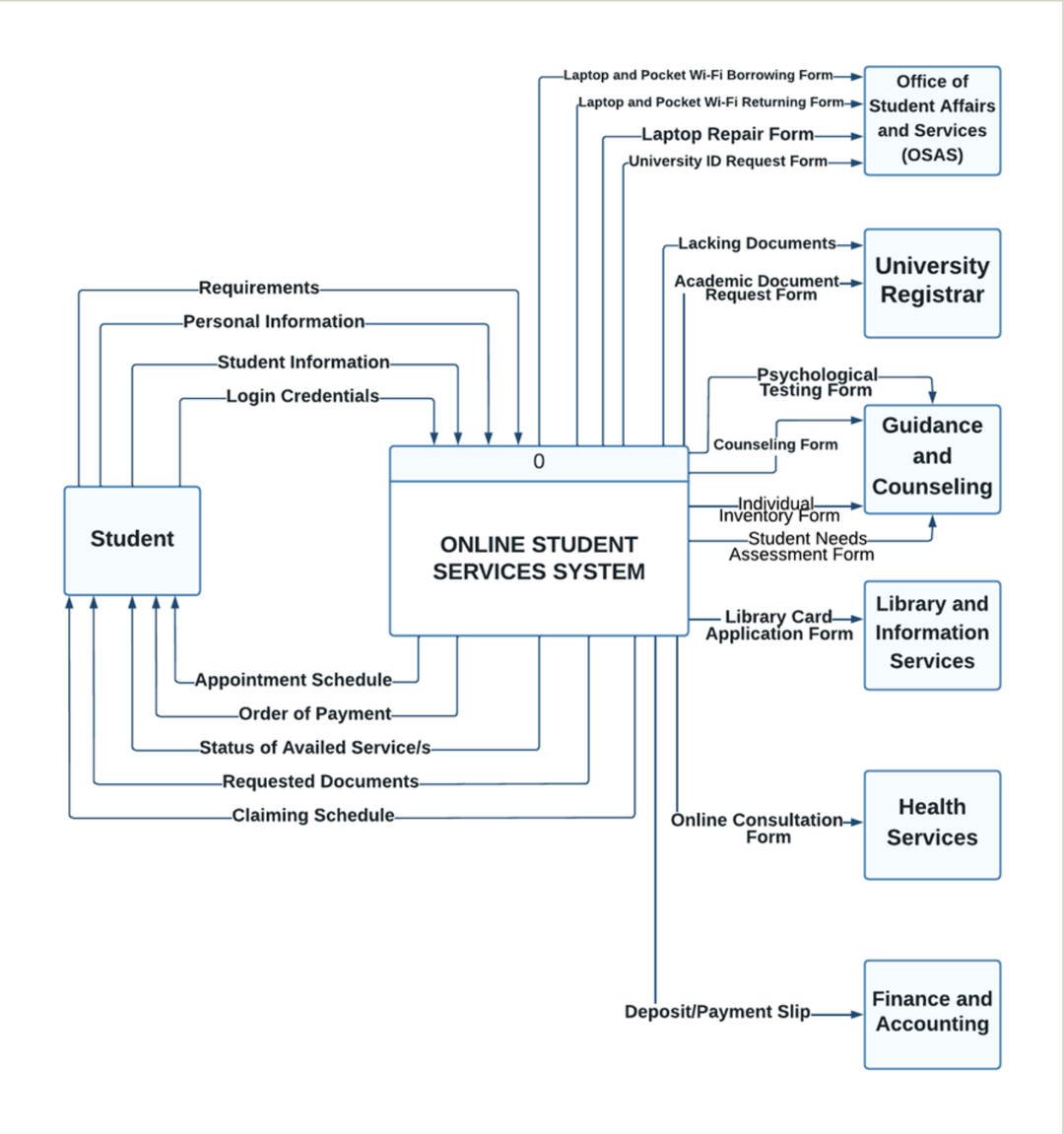
The system will work once all of the necessary requirements, such as hardware and software, were met, as well as the proper setup. There should be an available computer or any device in order to access the system. Once the users accessed the system, they will need to provide their verified email address, student number, and password. The students can use the system to request academic documents, have school-related appointment schedules. and track availed student services.

SYSTEM ARCHITECTURE

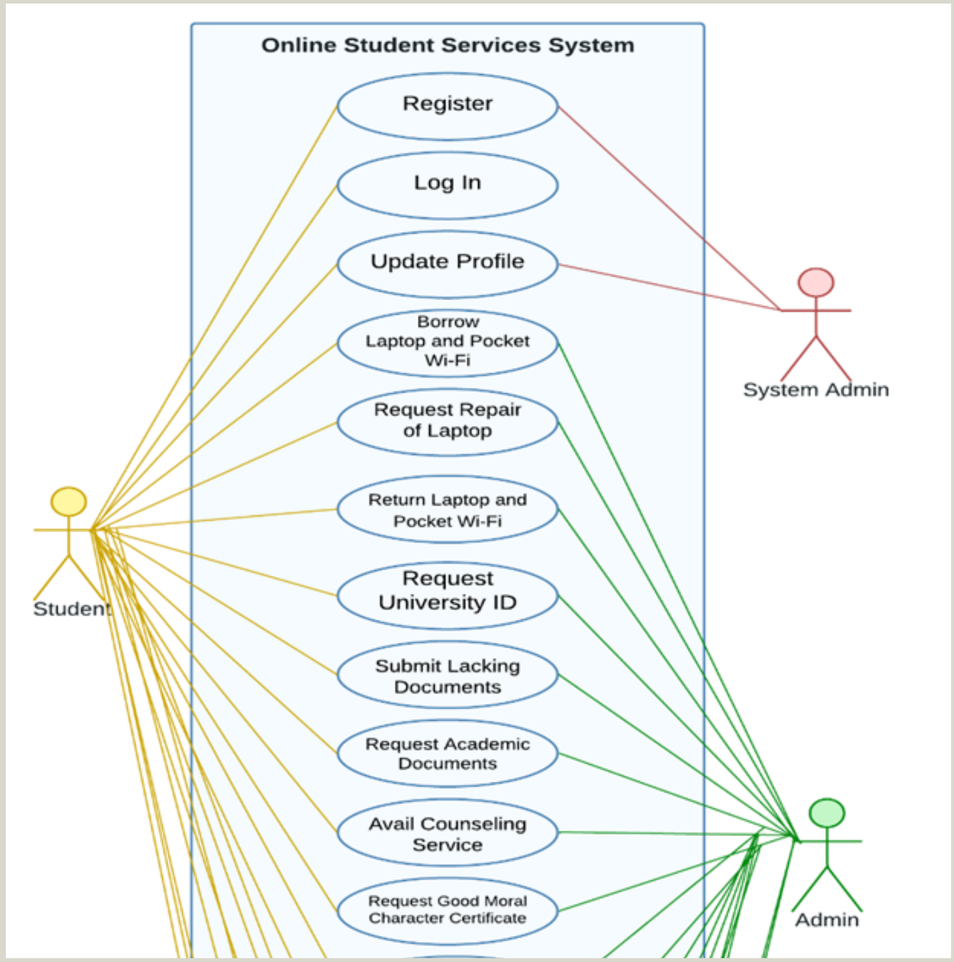


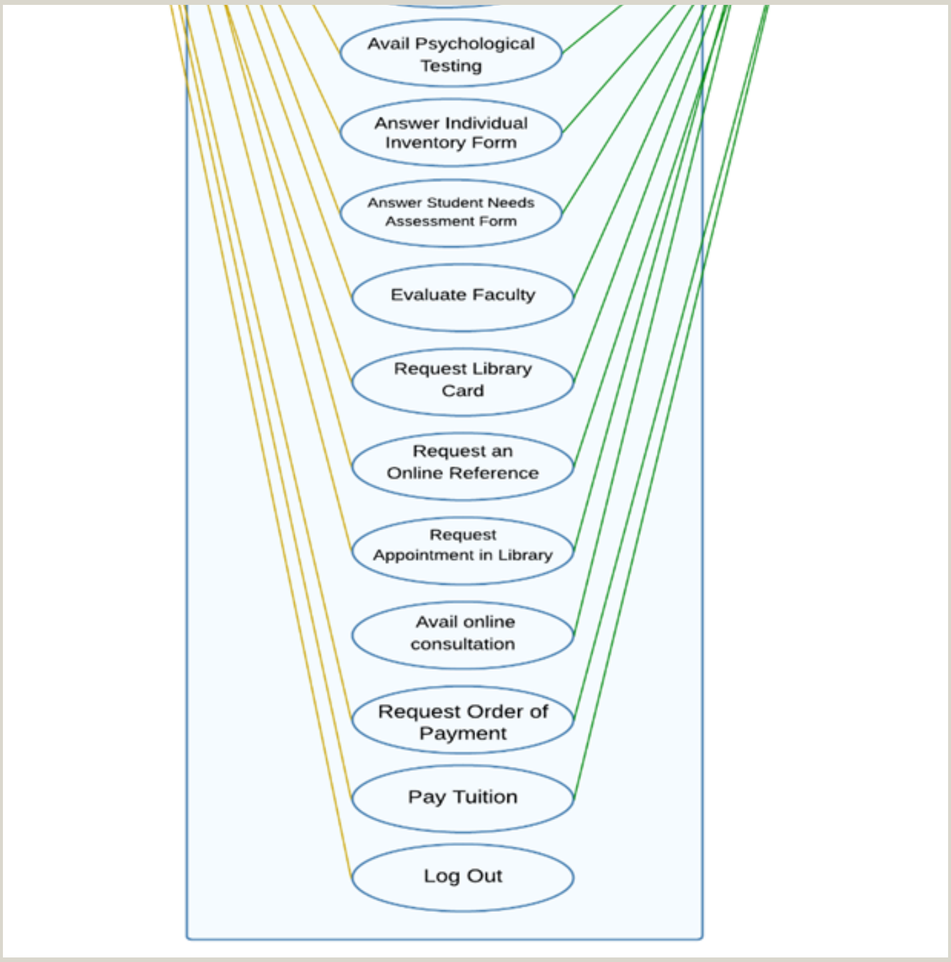
DIAGRAMS

CONTEXT DIAGRAM

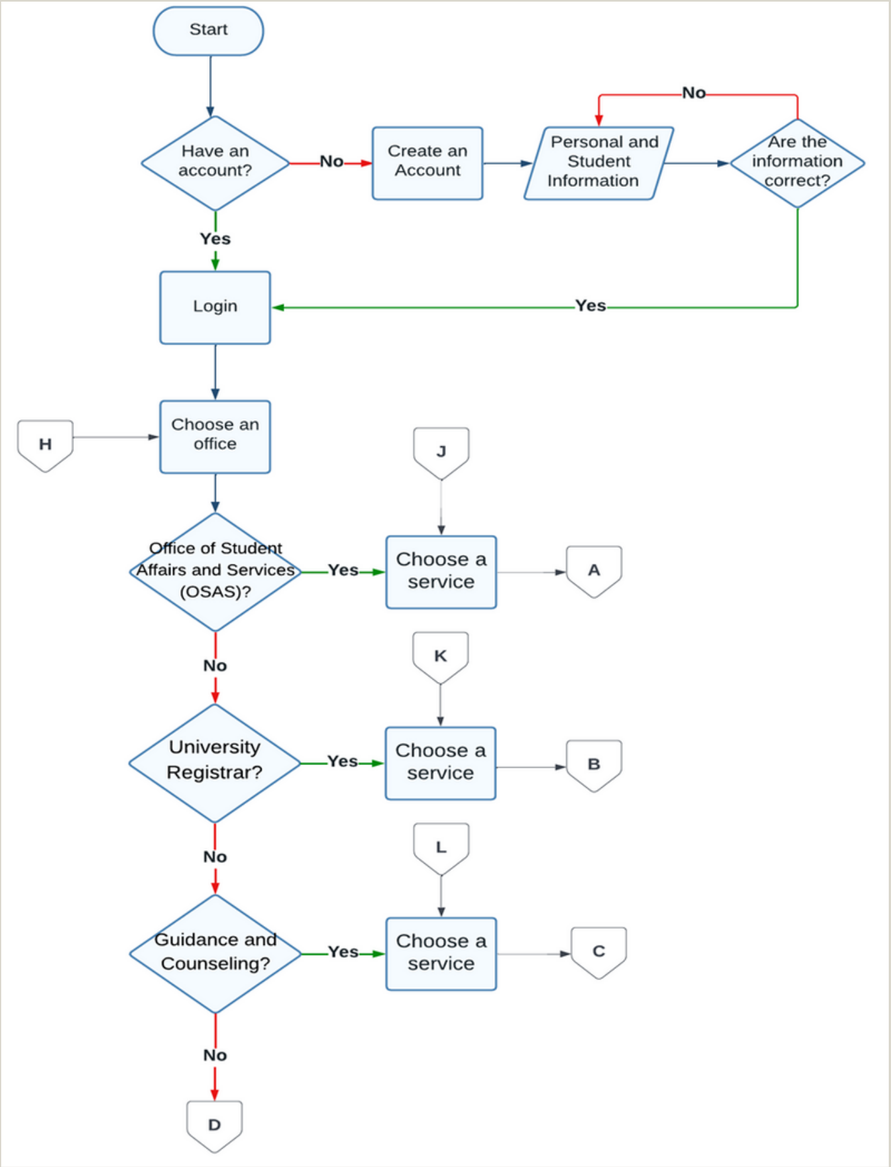


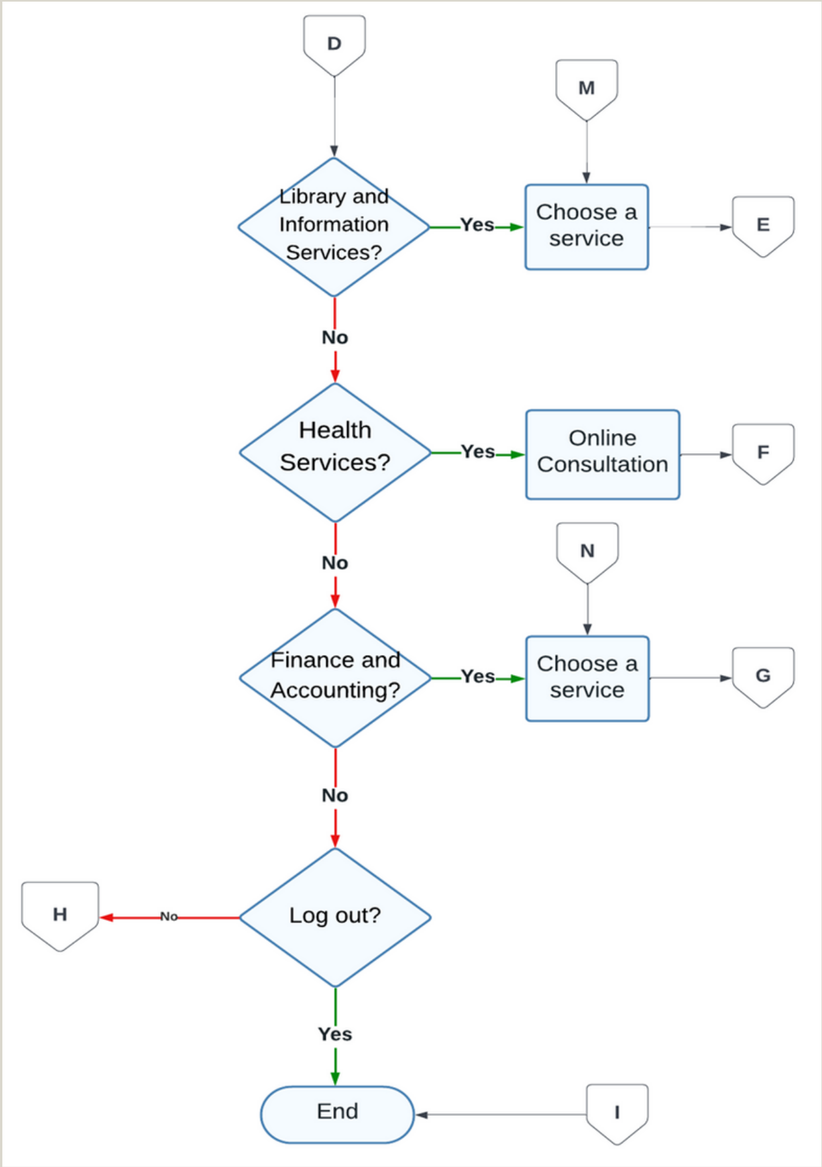
USE CASE


Online Student Services System
Register
Log In
Update Profile
Borrow Laptop and Pocket Wi-Fi
Request Repair of Laptop
Return Laptop and Pocket Wi-Fi
Request University ID
Submit Lacking Documents
Request Academic Documents
Avail Counseling Service
Request Good Moral Character Certificate
System Admin
Student
Admin


Avail Psychological Testing
Answer Individual Inventory Form
Answer Student Needs Assessment Form
Evaluate Faculty
Request Library Card
Request an Online Reference
Request Appointment in Library
Avail online consultation
Request Order of Payment
Pay Tuition
Log Out

SYSTEM FLOWCHART





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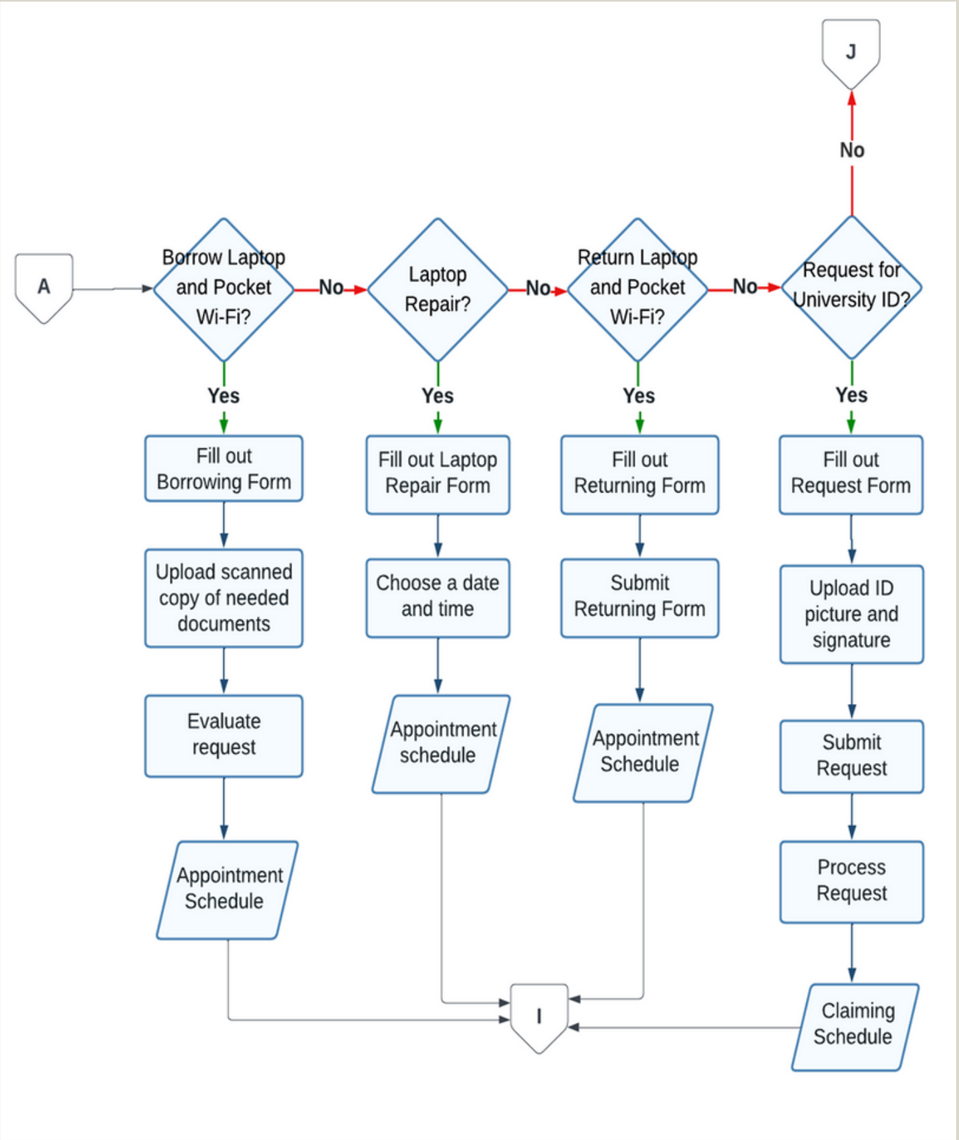

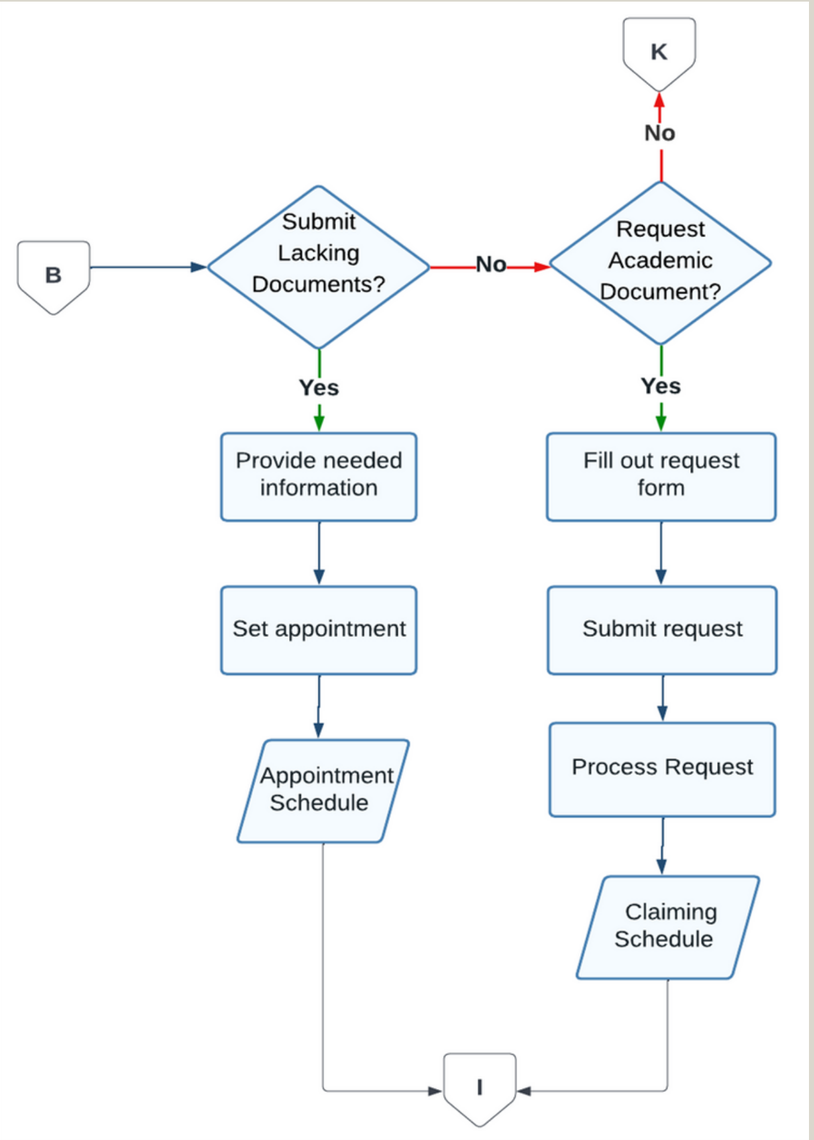

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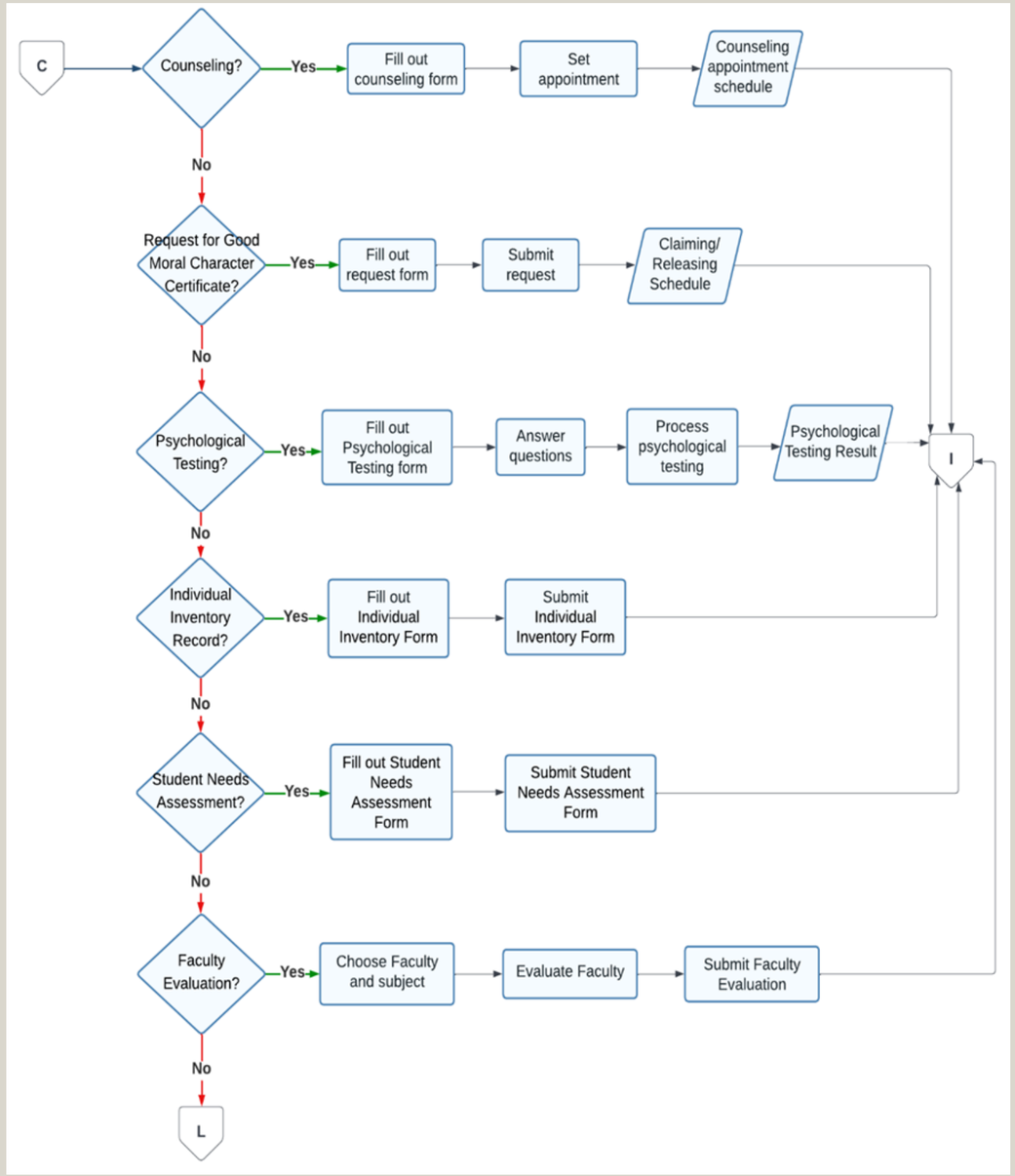

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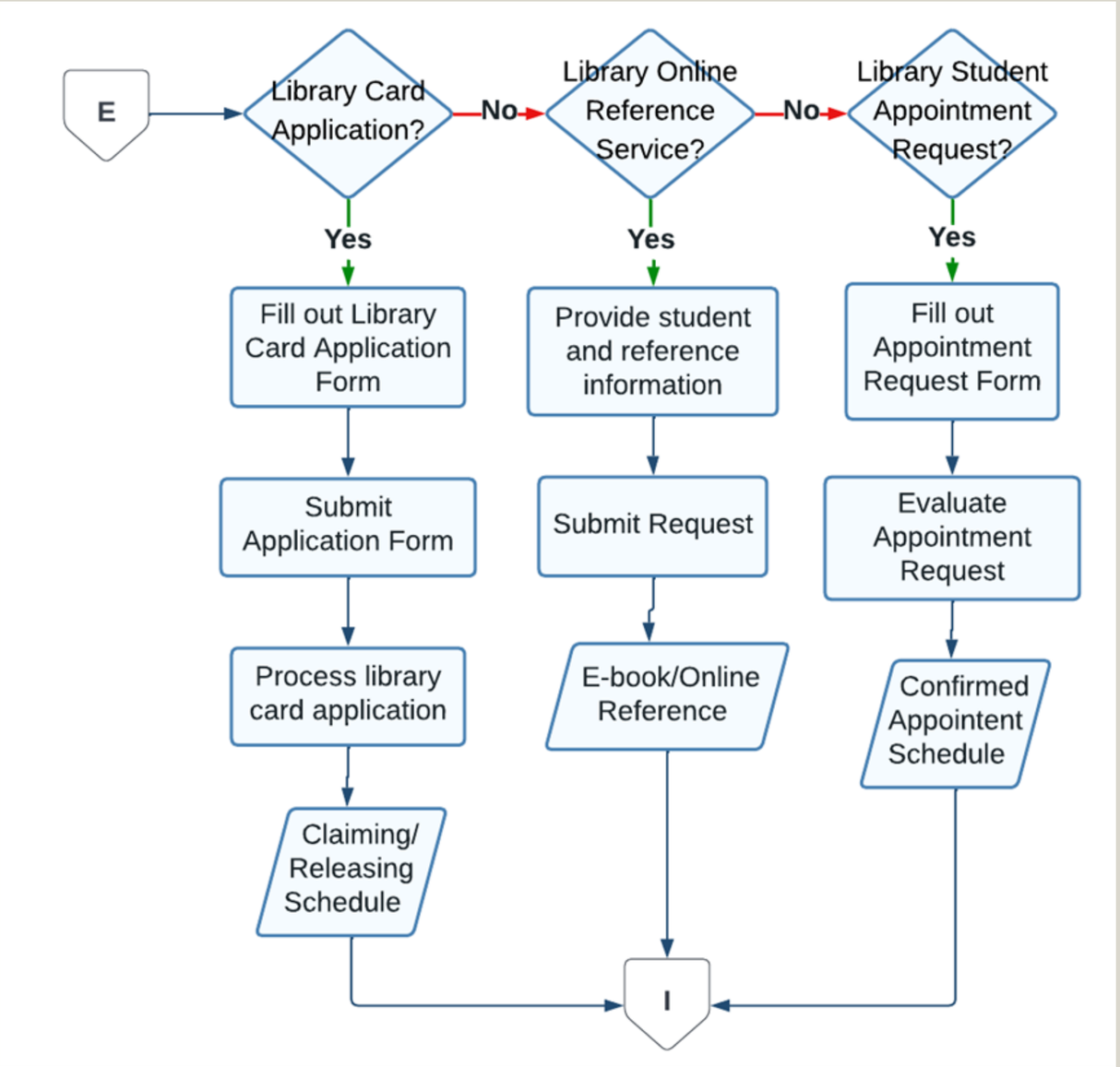

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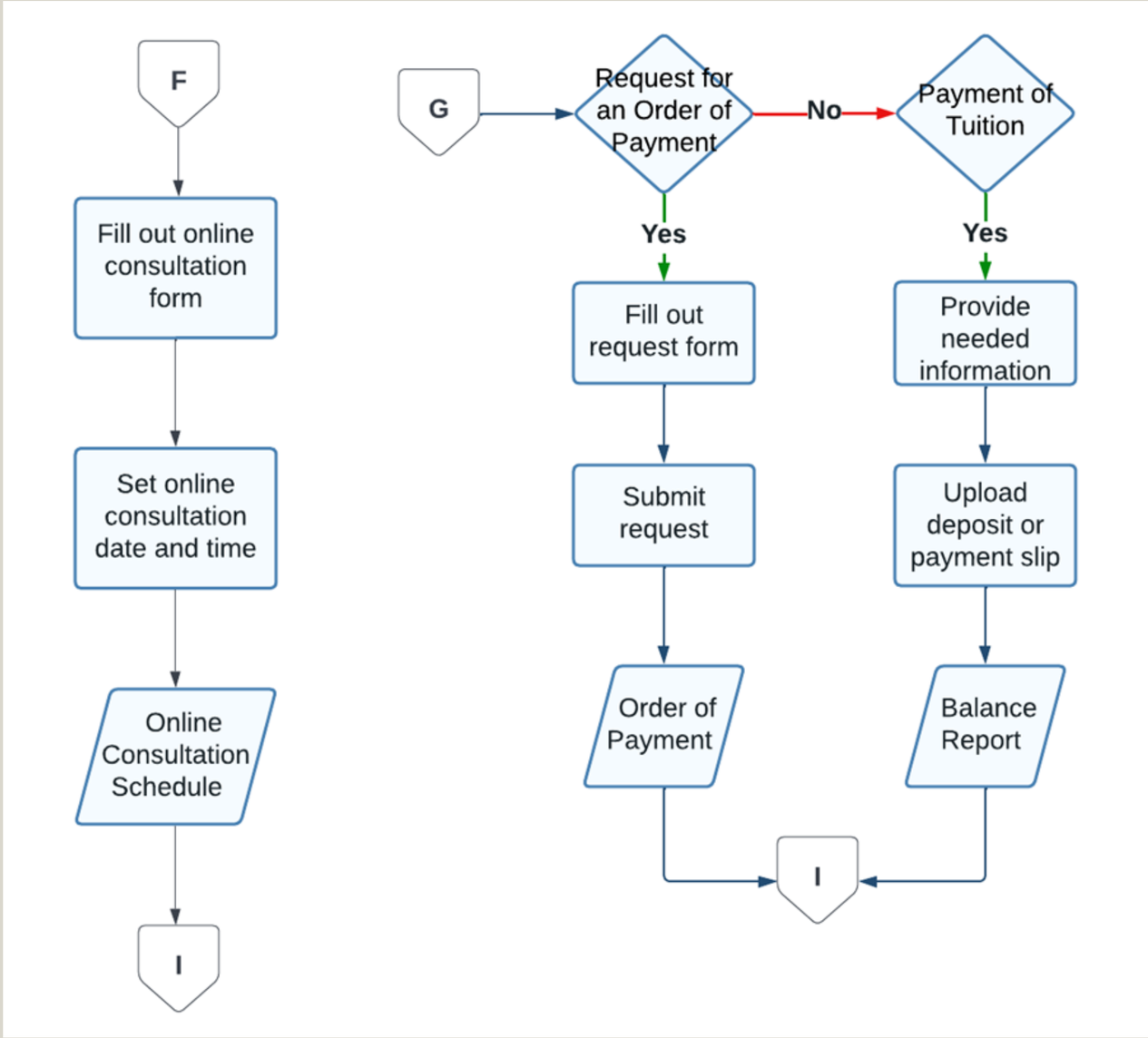

SYSTEM PRESENTATION

THANK YOU FOR LISTENING!