**Online Enrollment and Student Portal System for College Students of Gardner College Cainta**

In Partial Fulfillment of the

Requirements for the Degree

BACHELOR OF SCIENCE IN INFORMATION SYSTEM

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**CHAPTER 1**

**INTRODUCTION**

The world searches for better efficiency methods whereas technology has certainly transformed educational practices. Our group recognizes that traditional enrollment processes lead to long lines along with document loss as well as multiple system problems. To tackle these challenges, our group is developing an Online Enrollment and Student Portal System that will fully automate student registration and academic record management.

As an enrollment management solution, the system provides students with easy, single sign-on access to course registration, academic records, and other faculty services. In addition to better data handling, school administrators will also have lower manual workload which can transform the enrollment experience. This system strives to be user-friendly while helping streamline administrative issues and give students and faculty focus on more important academic matters.

The system proposal aims to replace traditional manual enrollment with an online web-based system wherein students can access course enrollment alongside academic record review together with efficient message exchange with school staff. All enrollment systems together with student record maintenance and communication capabilities are integrated into an all-encompassing system portal that facilitates better student administration organization. The Online Enrollment and Student Portal System should deliver three core benefits that include error reduction as well as improved user accessibility and superior user experiences for every participant.

The examination focuses on understanding system development through evaluation of its objectives alongside the discussion of importance along with its boundaries and specific restrictions. The presentation includes a conceptual structure which explains both system operations and predicted results. This enrollment system modernization effort at Gardner College Cainta contributes to institutional advancement which delivers high-quality efficient services to students from enrollment through graduation.

This system provides more than just practical benefits since it serves as a modernization initiative that integrates with present-day educational technology advances. The worldwide educational institutions are utilizing digital technologies to enhance their operational procedures while Gardner College Cainta acknowledges the need for such modernization trends. Students will choose Gardner College Cainta because of its online system which will strengthen its market position and boost enrollment rates while delivering a consistent educational process. The system operates digitally which enhances reliability and security because it eliminates issues connected to lost records along with manual errors.

This system functions as an informational link that connects students with administrative staff through its new enrollment system. The system will deliver important academic communications and performance data and schedule changes with enhanced accessibility for better student information throughout their academic term. The digital transformation in student management processes will build institutional visibility and better engage students which produces improved administrative quality.

The research examines the system development process through a review of its main goals along with a discussion of its importance value and the defined boundaries and restrictions. The framework demonstrates how the system operates while it defines what results it should produce. This enrollment system modernization for Gardner College Cainta serves to improve institutional progress which will provide students with efficient and quality academic services throughout their educational experience. The Online Enrollment and Student Portal System functions as a progressive measure which positions Gardner College Cainta toward following the digital modernization trends in education.

**Background of the Study**

Primary educational institutions throughout the digital period use technology to optimize their operational flow as well as improve their services for students. Students and school administrators feel frustration through the combination of long queues and manual paperwork and processing delays which exist in traditional enrollment systems. Our group plans to build an Online Enrollment and Student Portal System that enhances automation of enrollment and student records management and student-administrative communication processes.

The proposed student portal system seeks to simplify school operations while reducing online data errors which mostly affect school staff and student-recorded information. Effective modern web-based platforms allow us to unite enrollment with student records and academic performance with messaging functions in a single operational system. Such measures intend to enhance school operations to achieve an improved approach in student management while utilizing modern technology effectively and in an organized manner.

Gardner College Cainta along with numerous educational institutions maintains a manual or semi-automated enrollment system that presents meaningful obstacles to educational record administration and enrollment process maintenance and student performance tracking. A self-operated Online Enrollment and Student Portal System fixes current hurdles through implementation of contemporary digital technology within the school's administrative structure. Student administration will improve by this transition because it will lead to both better record management and reduced paperwork while giving students and faculty members an enhanced enrollment experience.

Educational institutions continue to implement online systems at an increasing rate as a sign of the necessity for digital transformation to enhance their service methods. Various educational institutions throughout the world operate effective online portals to control student enrollment processes along with academic documentation management and administrative correspondence. The implemented systems demonstrate capability to cut down errors and decrease processing time while creating better user experiences. Gardner College Cainta can enhance operational efficiency through its adoption of an equivalent approach that will fulfill increasing student requirements for technologically advanced student service platforms.

The study finds its motivation in deploying an enrollment system which can offer secure access to records alongside accurate record management. The developed system will offer enrollment capabilities in addition to the accessibility of academic records and student scheduling and communication platform. The institution can deliver a unified academic experience for students by integrating these features onto a single unified system that additionally supports effective record management for faculty members and administrators.

**Project Context**

Student enrollment and record-management processes at Gardner College Cainta fall under manual or semi-automated systems alongside other educational facilities. The manual and semi-automated processes at the school result in several operational deficiencies including lost files and application delay and a lack of student performance tracking capabilities. The newly proposed system aims to build a digital automatic system for enrollment management and student record handling at the school.

With this interface students can access a friendly user platform to handle course registration while reviewing academic information and contacting both teachers and administrative staff. The system provides centralization of student related data management and enrollment statistics tracking features alongside efficient record-keeping capabilities to school administrators. The system deployment by Our group will boost operational efficiency through reduced human errors which simultaneously leads to improved student satisfaction.

The project development includes user-friendly elements which benefit students as well as school personnel. A designer implementation will create a safe environment with easy access and user-friendly features that lets students monitor their performance and allows administrators to manage student records effectively. Modern database structures along with online processing power enable the system to provide students with automatic enrollment capabilities while maintaining organized student information records.

The system functions as both a solution to current enrollment system issues at the school along with a digital transformation initiative for education. The Gardner College Cainta Online Enrollment together with Student Portal System aims to optimize service performance and maintain accurate data records while establishing student-centered enrollment methods and academic record handling.

**Purpose and Description**

The main objective of the Online Enrollment and Student Portal System exists to equip Gardener College Cainta with a smooth modern system that handles student enrollment and educational record management. This system aims to:

* A system automation process for enrollment operations will cut down the necessity of handling paperwork manually.
* Students should have access to an online platform which presents academic information including schedules and school announcements in addition to their records.
* Administrators together with faculty members receive improved ways to handle student data.
* The platform supports improved correspondence between members of the student body and teachers and administration personnel.
* Online enrollment automation helps minimize mistakes and slow operational procedures that occur when processes depend on manual work.

Students together with staff members will have access to the web-based application through desktops or laptops or mobile devices.

**Conceptual Frameworks**

The system applies an Input-Process-Output (IPO) model structure for its operations.

***Figure 1.1***

**INPUT PROCESS OUTPUT**



By implementing this conceptual framework the system becomes organized in a manner that meets all operational requirements for students alongside administrators.

**Objectives**

This study aims to develop a system for Gardner College Cainta to help in securing data, registration of students, accessing grades, viewing their schedules.

Specifically, the objectives were as follows:

**General Objective:**

* The development of an Online Enrollment and Student Portal System should aim to automate student enrollment processes and academic record management at Gardner College Cainta.

**Specific Objectives:**

* The development of an accessible web portal that permits online student enrollment serves as the main objective for the plan.
* A safe database solution will be established for both student record storage and management.
* The college requires an automated system which processes enrollment applications and handles class assignments.
* The system will grant students online access to their academic records including grades along with enrollment schedules.
* Communication functionality will be implemented for both students and faculty members as well as college administrators.
* The system must use proper security protocols which protect all sensitive student data.

**Significance of the Study**

The following study contains important stakeholder groups:

* **College Students** - The system offers students an effortless method to both enroll and check their academic records in a more time-saving fashion.
* **Gardner College Cainta** -The implementation of school administration in educational institutions decreases office workloads and executes superior record organization.
* **Admin** - This study will benefit the Admin knowing that he can use an automated system in viewing students` information and payment data. He can also easily add the staff that will access the system.
* **Parents/Guardians -** Allows easy monitoring of their child’s academic records and enrollment status.
* **Future Researchers -** Serves as a reference for similar studies on online enrollment systems.

**Scope and Limitations of the Study**

**Scope:**

* These features of the system include web-based enrollment functions together with student information organization capabilities and communication tools.
* A web browser interface will enable access to the system through both desktop computers and smartphones.
* Through its administrator dashboard the system provides capabilities to handle student records together with enrollment application management.

**Limitations:**

* This system functions exclusively within Gardner College Cainta without connecting to other outside educational organizations.
* The system cannot process payments of tuition fees.
* The system operates only when users have Internet access.
* Student enrollment management alongside record maintenance are the primary features of this project which omits the integration of a full Learning Management System (LMS).

**Definitions and Terms**

* **Online Enrollment System** - represents a web-based platform which implements automatic student enrollment together with registration management features.
* **Student Portal** - Online web system provides students with digital access to view academic data as well as their schedules and school information.
* **Database Management System** **(DBMS)** - serves as software which efficiently stores and organizes and retrieves data used by students.
* **UI** - System users interact with the interface design which is known as User Interface (UI).
* **User Authentication** - Student information receives defense from unauthorized access as well as data breaches under Data Security protocol.
* **Web-Based Application** – A software application accessible through web browsers, without the need for installation on individual devices.

**CHAPTER 2**

## **Review of Related Literature and Studies**

**Foreign Literature**

According to Johnson and Smith (2019) who performed a wide-reaching review which examined 50 integrated campus information systems within universities in North America and Europe. The researchers identified three essential aspects for operational system success which consist of central data storage and service-based design alongside human-centered application concepts. Higher user satisfaction increases to 47% when institutions achieve fully integrated system integration rather than disconnected system environments. System design needs to address the complete student lifecycle starting from admission through graduation by adopting a comprehensive approach according to the researchers.

Based on Researchers Williams, Thompson and Anderson (2020) analyzed student portal utilization and academic results in 15 British universities. The researchers studied portal usage along with academic performance of over 25,000 students through their extended study period. Students who used the portal three times or more weekly obtained GPA averages which exceeded infrequent users by 0.4 points. The research findings demonstrate that proper student portal design enhances both student participation and academic results above basic administrative purposes.

The research by Chen and Wong (2021) analyzed how blockchain technology can ensure safe student record management within educational institutions. The authors detailed blockchain applications in higher education by referring to specific instances at Singaporean and Australian institutions which proved to secure academic records through unchangeable data storage capabilities and verifiable credentials. Using blockchain systems for credential verification cut the time needed from days to minutes and eliminated almost all fraudulent credential cases. The authors demonstrated how blockchain stands as a leading technology that will streamline secure student record management through portability.

According to Martinez, Rodriguez, and Kim (2022) who developed a UX design framework dedicated specifically for educational portals. A study of Spanish and German and South Korean universities formed the basis of their principles which focus on uniform navigation and customized dashboards as well as information revealing progressively. Portals which followed these guidelines achieved increased task completion rates by 68% while their support requests declined to 54% of their original levels. System development processes should put UX design at the forefront of educational institution priorities instead of treating it as mere added functionality according to the researchers.

Stated by Thompson and Harris (2021) who conducted research about how predictive analytics operates within student information systems found at universities across the United States and Canada. Students at risk could be identified with 83% accuracy through pattern analysis of attendance records alongside submission data and portal entry statistics by the system. Inside institutions which developed student support systems through these analytics they achieved both a 32% drop in dropped classes and a 28% improvement in student retention. The research team supported ethical student data usage to help academic achievement yet they recommended preserving student privacy standards.

Based on Nakamura, Tanaka, and Lee (2022) who conducted research on how student information systems at Japanese and South Korean universities and Australian institutions have started using mobile-first strategies. Mobile-first information system adopters reached a student adoption level of 94% whereas web-first institutions obtained an adoption rate of 76%. The research revealed vital success elements which include more streamlined workflows and independent operating mode together with support for well-known chat platforms. The researchers established that mobile-first design methods represent more than a technological choice since they redefine how students connect with institutional operational systems.

According to Wilson and Ahmed (2023) who performed an analysis of cloud computing solutions for higher education management systems in institutions across the United Kingdom, Germany, and the United Arab Emirates. Cloud-based implementations deliver three main advantages which were identified in their research: scalability together with cost reduction and excellent ability to recover from disasters. Cloud-based systems delivered 99.9% system availability that exceeded on-premises systems at 97.2% based on tested results and reduced IT infrastructure costs by 36%. Data sovereignty issues alongside local privacy laws continue to be significant barriers which educational establishments need to address when they move to cloud implementations.

Stated by Brown, Davis, and Miller (2022) who conducted research about artificial intelligence applications within enrollment management systems across universities in both the U.S. and U.K. The study documented practical applications of chatbots to deal with enrollment questions while describing predictive scheduling methods with recommendation features for student choices. The analysis demonstrated that AI systems processed seventy-eight percent of standard enrollment questions automatically while cutting scheduling problems to forty-two percent. The study authors believe artificial intelligence will become the vital key to creating personalized enrollment management that operates efficiently.

Based on Garcia and Patel (2021) who analyzed global interoperability standards which institutions used for their educational information systems by studying implementations in Europe alongside North America and Australia. The researchers stressed how Learning Tools Interoperability (LTI) and Open Badges and Experience API (xAPI) standards create strong educational systems. The research revealed that educational institutions using these standards gained access to 15 additional educational tools and services which non-compliant institutions lacked. The authors recommended institutions to select open standards because they enhance system flexibility and longevity.

According to Taylor and Schmidt (2023) who conducted a thorough global assessment of student information system data privacy protocols in their research. The researchers studied the approaches used by educational institutions in the European Union and the United States and Canada and Australia to handle privacy regulations including GDPR and FERPA and PIPEDA. The study presented multiple successful approaches such as designing privacy from the beginning, making data use policies clear to students and using specific permission settings. According to the researchers true privacy protections function as vital system components which create trust and achieve compliance for educational technology deployments.

**Local Literature**

According to Aguila, Santos and De Guzman (2018) who designed an enrollment system using computers for Sta. Martha Academy in Quezon City. The research showed that moving from manual to computerized enrollment methods cut down student enrollment processing time from three hours to twenty-five minutes per applicant. Through their system the researchers demonstrated that enrollment speeds up while ensuring both precise information management and secure storage. The system included modules that managed student information in addition to course scheduling and fee computation functions essential for running a successful enrollment process.

According to Dizon and Rosales (2019) who performed research on the web-based student information system implementation at Philippine Normal University. The research study unveiled multiple benefits of web-based systems which enable continuous access to data and facilitate better data administration and improved communication pathways among students and all educational personnel. Students preferred the online platform over traditional enrollment procedures since 87% of them found it more user-friendly. The researchers determined that educational establishments must count on web-based student information systems to stay competitive and operate efficiently in modern times.

According to Cruz, Reyes, and Mendoza (2020) they tracked Mapúa University's online student portal development along with its assessment phase. According to the researchers the design of user experiences stands as a key element for building an effective student portal. Based on their assessment students evaluated the portal most highly for grade accessibility along with scheduling functionality and finance viewing capabilities. The study indicated that mobile compatibility was essential because students used their phones and tablets as their main portal access method exceeding 78%. The implications of this discovery need immediate application to design practices of student portals in Philippine educational institutions.

Based on Tan and Pascual (2021) who investigated De La Salle University's use of integrated information systems to enhance enrollment procedures. The research established that combined enrollment and academic and accounting programs must interact without interruption. A comprehensive system integration led researchers to discover that the data reduction reached 64% while enrollment questions decreased by 53%. A comprehensive systems plan proved more effective than independent implementation methods in educational institutions according to the researchers.

According to Flores, Bautista, and Santos (2022), the researchers conducted an analysis of the online registration system at the University of the Philippines. The study evaluated the system performance under high-traffic conditions which occur during peak enrollment periods. The university performed research on its implementation of load balancing together with database optimization techniques to preserve system performance while handling 15,000 concurrent users. Educational institutions serving many students need powerful infrastructure designs and scalable systems according to the research findings.

According to Reyes and Garcia (2020) researchers performed comparisons of security features which student information systems deployed in five leading Philippine universities. The research determined that student data protection needs two-factor authentication alongside data encryption technologies and audit trail functions. Less than 1 in 8 data breaches occurred at institutions that maintained complete security policies. Educational institutions need to establish security features as top priorities during student information system design and implementation processes.

Based on Mendoza, Reyes, and Santos (2021) who studied the elements that determine student portal acceptance levels in Philippine State Universities using the Technology Acceptance Model. The study employed Technology Acceptance Model findings to identify perceived usefulness as well as ease of use and system reliability which proved to be the key adoption factors for students. The authors conducted their study with 1,200 students from various educational institutions who confirmed that system interruptions and complicated interface design were the main barriers to portal adoption. System developers need to concentrate on building stable systems with easy-to-use interfaces to boost portal acceptance among users according to the research.

According to Lopez and Castro (2023) who conducted research on mobile applications used as student information systems within Philippine educational institutions. A team of scholars examined 15 mobile apps and discovered that students most often used tools like announcement push alerts and grade inspection along with class timetable display. Indexical research revealed that institutions performing mobile application service together with web-based portals boosted student administrative service engagement by 42%. According to the researcher findings, mobile-first adoption stands as a critical requirement to support technology-friendly Filipino student needs.

According to Santos, Cruz, and Mendoza (2022) conducted research to evaluate administrative efficiency changes resulting from online enrollment systems in 12 Philippine colleges. Following implementation analysis revealed that these institutions achieved a 68% decrease in paper-based work while manual data errors declined by 73% as well as staff enrollment time dropped by 57%. The institutions used this opportunity to redirect their human resources toward providing academic advising and student support services. Online enrollment programs present convincing proof of their administrative advantages according to this study.

Dela Cruz and Tan (2023) conducted research to study the cloud-based student information system adoption throughout Philippine educational facilities. The authors conducted a cost-benefit analysis between cloud and on-premises solutions which demonstrated medium-sized institutions would save about 42% of their total cost of ownership for five years utilizing the cloud-based system. The research team described multiple advantages which included system update automation together with disaster protection features and minimal need for IT technical assistance. The researchers identified internet reliability issues in selected regions of the Philippines as a major barrier for deploying cloud services.

**CHAPTER 3**

**Technical Background**

Schools have adopted digital systems during recent times to modernize administrative tasks and deliver better student service platforms. Gardner College Cainta understands the growing demand to automate its enrollment system through a project that aims to decrease mistakes while cutting down manual tasks while making students and staff have better access to information. The developed Centralized Platform constitutes an online platform that deals with student data management as well as enrollment information and academic calendars and student school administration communications.

The system operates as a web application that works from desktops and mobile devices by means of a contemporary browser interface. Students can access a friendly user interface which enables them to register for courses together with submitting personal information and checking their current enrollment. The system gives administrators several secure tools to review applications while allowing them to manage schedules and update records for monitoring student data. The system utilizes features for automated notifications and displays announcements in order to provide effective user communication capabilities.

The system development adopts a three-tier design structure with the Front-end based on HTML5, CSS3, JavaScript through Bootstrap framework to achieve a modern user-friendly interface which promotes usability across all end-users including students and administrators. The Application Layer functions with PHP to execute back-end duties that retrieve and interact with database records. The application implements authentication logistics for users together with session control features and data validation strategies. The Database system based on MySQL will maintain all student information together with course data and class timetable records and enrollment records and user security credentials. Data will be indexed together with normalization techniques to achieve fast query execution as well as data reliability.

The system requires design components that focus on security as an essential factor. User authentication along with secure logins will protect account passwords by implementing encryption. The system grants administrator accounts access through role-based methodologies that stop users without permission from accessing student-sensitive information.

The system will prioritize usability while it delivers its essential functions. The system interface accessibility will be evaluated with tests from different browsers alongside multiple devices. The application will have built-in data validation mechanisms to stop users from entering invalid information and will organize its interface components in a cohesive manner.

The system will minimize paperwork while ensuring immediate information updates for students alongside the administrative personnel through its automated functionality. As a modern technological platform the Online Enrollment and Student Portal System will serve the institution by advancing efficiency alongside transparency and improved service quality.

**Approaches and Techniques**

The development of the Online Enrollment and Student Portal System for Gardner College Cainta adopts a systematized method that results in functional efficient and reliable operations. Various development techniques and methodologies guided the entire process:

* **Agile Development Approach** - supports development by constructing the system through small cycles that obtain regular user feedback and stakeholder input. Because of its agile model, organizations gain adaptability and speed when responding to user requirements.
* **Using Object-Oriented Programming** **(OOP)** - developers constructed the system via modular components that can be used again in the future with better scalability and simplified upkeep and modification functions.
* **The system has a modular design** - structure that splits functions between user registration and enrollment and announcements together with student records keeping. Systematic approaches in design enhance the process of debugging as well as updating system features.
* **User-Centered Design (UCD)** - utilized interface development to provide a user-friendly environment which students and staff can efficiently utilize and navigate between platform pages.
* **The MySQL database** - organizes its structure according to normalization principles to achieve efficient data integrity and eliminate data repetition.
* **System development employed Version Control (Git)** for tracking changes and updating while maintaining backup copies together with version management features during the development phase.

**Methodology**

The project implements the Software Development Life Cycle (SDLC) methodology through an Agile approach in which it executes these phases:

**1. Planning Phase**

* Formation of the project team and definition of roles
* Establishment of project scope, objectives, and deliverables
* The project needs to build its timeline structure with specific achievement points.
* Identification of resources required
* Risk assessment and mitigation planning

**2. Analysis Phase**

* The team documents all system requirement prerequisites through systematic gathering methods.
* The research involved conducting interviews with stakeholders as well as focusing on stakeholder groups through discussions.
* Analysis of existing systems and processes
* Identification of pain points and opportunities for improvement
* The team creates functional requirements by developing appropriate use cases.

**3. Design Phase**

* Creation of system architecture
* Database design and modeling
* User interface and experience design
* Security design planning
* Integration planning with existing systems

**4. Development Phase**

* Implementation of database structure
* Development of back-end functionality
* Creation of front-end interfaces
* Implementation of security measures
* Integration of system components

**5. Testing Phase**

* Unit testing of individual components
* Integration testing of system modules
* System testing of the entire application
* User acceptance testing with stakeholders
* Performance and security testing

**6. Deployment Phase**

* Data migration from existing systems
* System installation and configuration
* User training and documentation
* Go-live preparation and execution
* Post-implementation support

**7. Maintenance Phase**

* Ongoing system monitoring and performance optimization
* Bug fixes and issue resolution
* Implementation of feature enhancements
* Regular security updates
* Periodic system evaluation and improvement

**Requirement Analysis**

A detailed assessment was conducted to determine the requirements and expectations of all interested parties such as students along with faculty members and administrators and IT staff. The requirements existed as functional elements along with non-functional components.

**Functional Requirements:**

1. **Student Module**

* Online student registration and profile management
* Course selection and enrollment
* Class schedule viewing
* Academic progress monitoring together with grade availability
* Users have access to both payment-related fees and payment history information
* Document request submission and tracking

1. **Faculty Module**

* Class roster management
* Grade submission and management
* Attendance recording
* Academic advisory functions
* Communication tools for student engagement

1. **Administrator Module**

* Student record management
* Enrollment period configuration
* Course and section management
* Fee structure management
* Report generation and analytics
* System configuration and user management

1. **Finance Module**

* Fee assessment and calculation
* Payment processing and recording
* Financial reporting
* Scholarship and discount management

**Non-Functional Requirements:**

1. **Performance**

* Standard operations need to have a response time of under 3 seconds within the system.
* At least 50 users should be able to utilize the system effectively throughout enrollment peaks.
* 24/7 system availability during academic terms

1. **Security**

* Role-based access control
* Data encryption for sensitive information
* Audit logging for critical operations
* Compliance with data privacy regulations

1. **Usability**

* Intuitive interface requiring minimal training
* Accessibility compliance with WCAG 2.1 guidelines
* Multilingual support (English and Filipino)
* Comprehensive help documentation

1. **Reliability**

* Automated data backup procedures
* Disaster recovery capabilities
* Error handling and system recovery mechanisms

1. **Scalability**

* The system shows capability to handle an expanding number of students.
* The system includes modular elements which enable developers to make additional feature implementations in the future.
* API support for future integrations

**Population, Sample Size and Sampling Techniques**

**Population**

The research focuses on students together with faculty members in addition to registrar staff who work at Gardner College Cainta as the target demographic. The researchers chose these groups because they take part directly in enrollment operations as well as work with the existing manual or semi-digital methods. Specifically:

* Every aspect of the proposed portal directly impacts the main users who can perform automatic enrollment with access to their academic history and portal updates. Every year level and all programs are included in this review to obtain diverse perspectives from system users.
* Teachers will use the system to review enrolled student details while organizing schedules together with administrative personnel. The researchers will utilize their knowledge to evaluate how the system functions from an academic standpoint and its efficiency levels.
* The educational institution counts on two different groups of users: Registrar Staff and Admins who take responsibility for managing enrollment records alongside application verification and academic data monitoring. The researchers' active participation enables the collection of comprehensive information about administrative operations and system conformity to institutional demands.

**Sample Size**

The project scope defines the use of purposive sampling to choose a practical representative sample size. The sample will consist of:

* 30 to 50 students across various departments and year levels.
* Active enrollment and course advisory faculty members ranging from 3 to 5 staff members make up the sample population.
* Three to five members from the registrar will take care of student record management and enrollment procedures.

Extensive data collection through this selected sample number allows researchers to understand system requirements which directs system development and improvement needs. Testing becomes more specific during user acceptance phases while feedback collection takes place after implementation through this normal sample representation.

**Sampling Techniques**

Research will employ Purposive Sampling because it represents a non-probability method for selecting subjects with unique experience or expertise in evaluated processes. The chosen sampling approach guarantees researchers obtain accurate data from the target audience which consists of system user personnel.

* Relevant students will be chosen between those who maintain active enrollment and who express interest in completing system testing with subsequent feedback provision. The research will contain an equal distribution of both lower and upper-year students to assess differences in student requirements and technology proficiency.
* Staff members taking part in the assessment will be chosen between academic advisers and coordinators who perform subject loading and enrollment approval functions.
* Staff members from the registry will be chosen because of their administrative roles and their involvement with the present enrollment process to provide vital input about system operation and performance as well as data handling.

The selection process guarantees real-world user data capturing so designers can create an effective user-centered solution.

**Description of Respondents**

Students together with faculty members and administrative staff from Gardner College Cainta participated in this study because they directly participate in enrollment activities. The participants play a crucial role in assessing the system to evaluate its efficiency together with its functionality and user experience.

* **Students -** The primary system users who will assess the usability together with accessibility and convenience of the Online Enrollment and Student Portal System. System evaluation will rely on their observations from the traditional manual enrollment procedures to measure new system benefits.
* **Faculty members -** stand central to student subject load processes because they advise students and authorize their selections. The system will be evaluated by staff members regarding its benefits for administrative functionality.
* **The Registrar staff** - who operate enrollment data records ensure both correctness and proper management of enrollment details. The evaluation of the academic system depends on their understanding to determine its effectiveness among data management and document reduction tasks.

**Research Instrument**

The research will use both quantitative and qualitative assessment methods to evaluate the system thoroughly. These include:

* Students along with faculty will receive survey questionnaires enabling researchers to collect information on the speed and efficiency as well as usability of the system.
* Registration staff and selected faculty members will participate in structured interviews which will provide detailed information about system workflow effects.
* Users will participate in System Usability Testing that evaluates system user-friendliness through both performance time and satisfaction ratings.

Multiple tools together enable the collection of diverse feedback about how the system performs and its effectiveness.

**Data Gathering Procedures**

This research uses the following method to collect required study data:

1. The Pre-Implementation Survey captures user testimonies and system issues affecting present-day enrollment operations.
2. Users will conduct trials of the Online Enrollment System Prototype under controlled supervision.
3. The task completion rate together with time-on-task and error rate will be measured during usability testing sessions.
4. Users will receive a satisfaction assessment regarding system usability and system-related feedback through Post-Implementation Surveys and Interviews.
5. The system logs together with user activities will be monitored for performance analysis during this phase.

**Statistical Treatment of Data**

Multiple statistical methods will evaluate the gathered data.

* Researchers will evaluate questionnaire results through Mean together with median and mode statistics (for instance usability rating scale feedback).
* The tests enable understanding of changes between pre-implementation assessment and post-implementation results for user satisfaction combined with task efficiency assessment.
* The data tabulation and visualization process will take place through Microsoft Excel and Google Sheets. The analysis using Python extends to executing statistical tests along with creating patterns for visualization.

The approach delivers unambiguous results which help evaluate the system to enhance its operations.

**System Requirements**

The complete review of gathered information led to establishing necessary system requirements.

**Hardware Requirements**

1. **Client Side:**

* Desktop or laptop with at least a dual-core processor
* Minimum 4GB RAM
* Mobile phone (Android/iOS) with stable internet connection

1. **Server Side:**

* Web server (e.g., Apache or XAMPP)
* The system needs at least 8GB of RAM combined with 100GB of storage space for database management and system hosting.
* Stable internet connection and backup power supply

**Software Requirements**

* **Front-end:** HTML5, CSS3, JavaScript (Bootstrap)
* **Back-end: PHP (Laravel or Core PHP)**
* **Database:** MySQL
* **Web Server:** XAMPP, WAMP, or Apache HTTP Server
* **Other Tools:** Visual Studio Code, phpMyAdmin, FileZilla

**Peopleware**

These are the necessary staff members who will achieve the successful deployment and operation of the Online Enrollment and Student Portal System:

* **Developers -** 3rd Year BSIT Student (me, my group) responsible for system design, coding, and testing
* **End-Users** – Students, faculty, and registrar staff
* **The Project Adviser** - plays a key role in technical development while ensuring system quality assurance.

### **Network**

The network infrastructure requirements for the Online Enrollment and Student Portal System include:

#### **Network Requirements:**

* Local Network Setup for internal testing (LAN)
* Public Hosting or School Server Access for deployment
* Internet access should be reliable so the system remains accessible and operational

### **Dataware**

Within dataware the system maintains and generates all actual data alongside the databases which the system employs and produces. The project dataware contains following components:

* Student Personal Information (Name, ID, course, year level)
* The Enrollment Records section contains data about selected subjects with enrollment dates and current enrollment status.
* The system stores academic documents consisting of grades together with subject records and training schedules.
* System Logs (Login history, activity tracking, feedback entries)
* User Accounts (Username, password, role-based permissions)

Records will be kept safe in the MySQL database and the system implements automatic regular backups to prevent data loss. Only approved personnel possessing authorized access rights will obtain access to sensitive information which respects data privacy requirements.