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# Smart Enrollment: Enhancing User Experience & UI for a More Efficient Student Pre-Registration System for SEAIT

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**Abstract: Student pre-registration is a critical process that can significantly impact academic planning and efficiency. However, many institutions, including SEAIT, face challenges with unmanageable interfaces and poor user experience, leading to delays and frustration. This study explores by improving the interface of SEAIT's pre-registration system by focusing on intuitive UI/UX improvements modernized navigation, simplifying form inputs, and integrating real-time feedback mechanisms. Through user testing and iterative design enhancements, we aim to create a more efficient, accessible, and stress-free enrollment experience for students. The proposed system not only reduces processing time but also increases satisfaction, ensuring a smoother transition into each academic term. By prioritizing user-centered design, this project demonstrates how thoughtful digital solutions can transform administrative processes in educational institutions.**

***Keywords:*** *Student Pre-Registration, User Experience (Ux), User Interface (Ui) Design, Enrollment System Optimization, Academic Efficiency.*

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## I. INTRODUCTION

### *A. Background and Context*

Interestingly, Student Enrollment is one of the most known academic milestones, but it has a tendency to make people experience an inefficient procedure. Continuous queues, perplexing documents and systems lead to both students and school personnel being frustrated which may be better for all involved. With technology getting ever better schools are now moving towards electronic systems that can simplify and improve the procedure for enrolling, according to the official web site. But many of them have such unclear navigation. This project, Smart Enrollment: Improving User Experience & UI for a More Efficient Student Pre-Registration System, aims to make the whole enrollment process run more smoothly and be easier on the user. It allows them to enter their information correctly and inadvisably where applicable. Meantime, school administrators can easily handle the records of students ' registration, modification, cancellation, search and view students 'names from their dashboard. At its core, the essence of this research is integrating enrollment, making it more convenient and fast. The whole system is user centered and though the focus is on user experience and UI, both students and administrators are able to make it happen. No longer need they be faced with primitive procedures; instead, they can breeze through registration and direct their attention back to school.

### *B. Research Problem*

Traditional student enrollment is often slow, frustrating, and full of paper work leading to mistakes that stress out both students and administrators. While some schools have moved to digital systems, many are still hard to use, with confusing layouts and clunky navigation. This slows down pre-registration and leaves everyone annoyed. On top of that, administrators struggle with messy data management, making it harder to keep student records organized.

### *C. Research Questions and Objectives*

- How can we ensure that the user interface is intuitive enough for all users, including those who may not be technology Competent?

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- What steps can we implement to create a efficient pre-registration workflow that guides students through the process?
- How can we incorporate automated data validation to minimize errors during the enrollment process?
- What features should be included in the centralized data management dashboard to make it effective for administrators?
- How can we ensure that the enrollment system is accessible and functional on mobile devices for all students?

*D. Objectives*

- A simple, stress-free interface, so both students and admins can navigate without getting lost or making mistakes.
- A step-by-step enrollment guide, clear instructions and progress tracking so students know exactly what to do next.
- Real-time error prevention, the system checks for mistakes as you go, so you don't have to fix them later.
- A powerful admin dashboard, easy access to student records, faster processing, and smarter decision-making.
- A responsive design that allows students to complete the enrollment process on various devices, along with accessibility features to support users.

*E. Justification and Significance*

This study aims to ease the process on pre-registration. Let's face It nobody enjoys the chaos of student enrollment. Between confusing forms, endless paperwork, and last-minute errors, the current process frustrates students and overwhelms administrators. That's exactly why we need Smart Enrollment a system designed around real people, not paperwork. By simplifying the interface, automating dull steps, and making it mobile-friendly, we're not just speeding things up; we're removing the stress that drives students away. For schools, this means fewer administrative headaches, cleaner data, and happier students from day one. When enrollment stops being a vault and starts feeling welcoming, retention improves, reputations grow, and most importantly students can focus on what actually matters, their education.

## II. LITERATURE REVIEW

*A. Overview of HCI Theories and Models*

Recent advances in Human-Computer Interaction (HCI) have reinforced the importance of usability, accessibility, and user-centered design principles for educational systems like SEAIT's Smart Enrollment. Daclison Kezia B et al. (2024) emphasize the importance of user-centered design in digital exam systems, noting that improved interfaces can enhance usability and task efficiency. Robles & Santisteban (2024) conducted a systematic review of TAM in higher education, identifying factors that have extended the original model. These studies collectively underscore TAM's enduring relevance in assessing technology adoption in educational settings, with a focus on user experience, interface design, and specific contextual factors influencing acceptance.

The distributed Cognition theory shows that automated enrollment system verification tools minimize user cognitive stress because tasks move from users to the system which resulted in experimentally measured 40% less errors. All these studies prove why users need interactive systems that offer simple access plus task efficiency while working with varied user requirements. Utilizing such findings for educational technology development enables better user satisfaction results and lower error rates together with better digital learning environment performance.

*B. Review recent studies, papers, and advancements in HCI*

Recent studies in Human-Computer Interaction (HCI) domain that new interfaces technologies, user interaction design, system accessibility, and other relevant functionalities. Research emphasizes the importance of user-centered design in digital exam systems, focusing on navigation, error prevention, and user satisfaction (Daclison K et al., 2024). Integrating effective computing has shown potential in enhancing personalized user experiences across various domains. Research by Hasyim & Bakri, (2024). The evolution of HCI from command-line interfaces to intuitive touchscreens and voice recognition systems has been noted, along with emergence of natural language processing and gesture recognition these advancements aim to improve user experience, accessibility, and overall interaction between humans and computers.

*C. Theoretical Framework for the Research*

The research adopts a theoretical framework that blends user experience UX principles together with real-time data processing methods as part of Human-Computer Interaction (HCI) studies while analyzing user-enrollment system interactions.

The integration of these systems reduces mental workload and improves visibility which generates better satisfaction for users and leads to improved user adherence and better enrollment process completion rates. The system's capacity to process multiple concurrent registrations while maintaining data accuracy is particularly critical in environments where enrollment period efficiency determines institutional performance (Johnson 2019). This framework demonstrates the crucial role HCI plays in enhancing user usability and accessibility and improving universal experience through diverse domains such as healthcare and gaming systems despite facing ethical and privacy concerns.

## III. METHODOLOGY

*A. Research Design*

The research design for Smart Enrollment uses descriptive and developmental research methods to enhance User Experience and UI functionality for an efficient Student Pre-Registration System. The descriptive part of research focuses on studying the present enrolment process by gathering user preference data and system usability

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feedback through surveys and system usability tests combined with in-person interviews to understand current process issues and user experience problems. The collection of important data through this approach enables user experience enhancement. The Smart Enrollment system development follows the developmental research approach by uniting user feedback with best practices of UI/UX design to build and improve the system over time. Through prototyping and continuous evaluation, the study ensures that the system meets the needs of students and administrators, ultimately making pre-registration more efficient and user-friendly.

*B. Participazts*

This study focuses on students, school admin and the enrollment staff who use the pre-registration system. Since students is the main user their experience with the system will be gathered for the area of improvement. While, admins and staff, who handle applications behind, can provide insights into system efficiency and difficulty management.

*C. Data Collection Methods*

Data will be collected through a combination of user surveys, semi-structured interviews, and usability testing sessions to enhance the Smart Enrollment system for student pre-registration. By integrating these insights, the study aims to create a more efficient and user-friendly pre-registration experience that enhances overall satisfaction for both students and administrators.

*D. Data Analysis*

The facts accrued from person surveys may be analyzed the use of statistical techniques to summarize person delight levels and pick out commonplace pain points. Qualitative records from semi-dependent interviews could be transcribed and analyzed the usage of thematic analysis to capture routine issues and insights associated with user experiences and challenges. Usability checking out classes may be recorded and analyzed to discover unique usability troubles, consisting of navigation difficulties and challenge of entirety rates.

*E. Ethical Considerations*

within the smart Enrollment project, we prioritize the rights and properly-being of contributors with the aid of presenting clean records and obtaining knowledgeable consent, allowing them to withdraw at any time. we can ensure confidentiality with the aid of anonymize statistics and restricting get right of entry to to legal crew individuals. Our research design will create a supportive environment for open sharing all through interviews and usability testing. we can are looking for ethics evaluate board approval to preserve studies standards and make sure transparency in reporting findings. by means of following those ethical ideas, we intention to collect precious insights that decorate the clever Enrollment system for a more green and user-friendly pre-registration enjoy.

## IV. ADVANCED HCI SYSTEM DESIGN

*A. System Architecture*

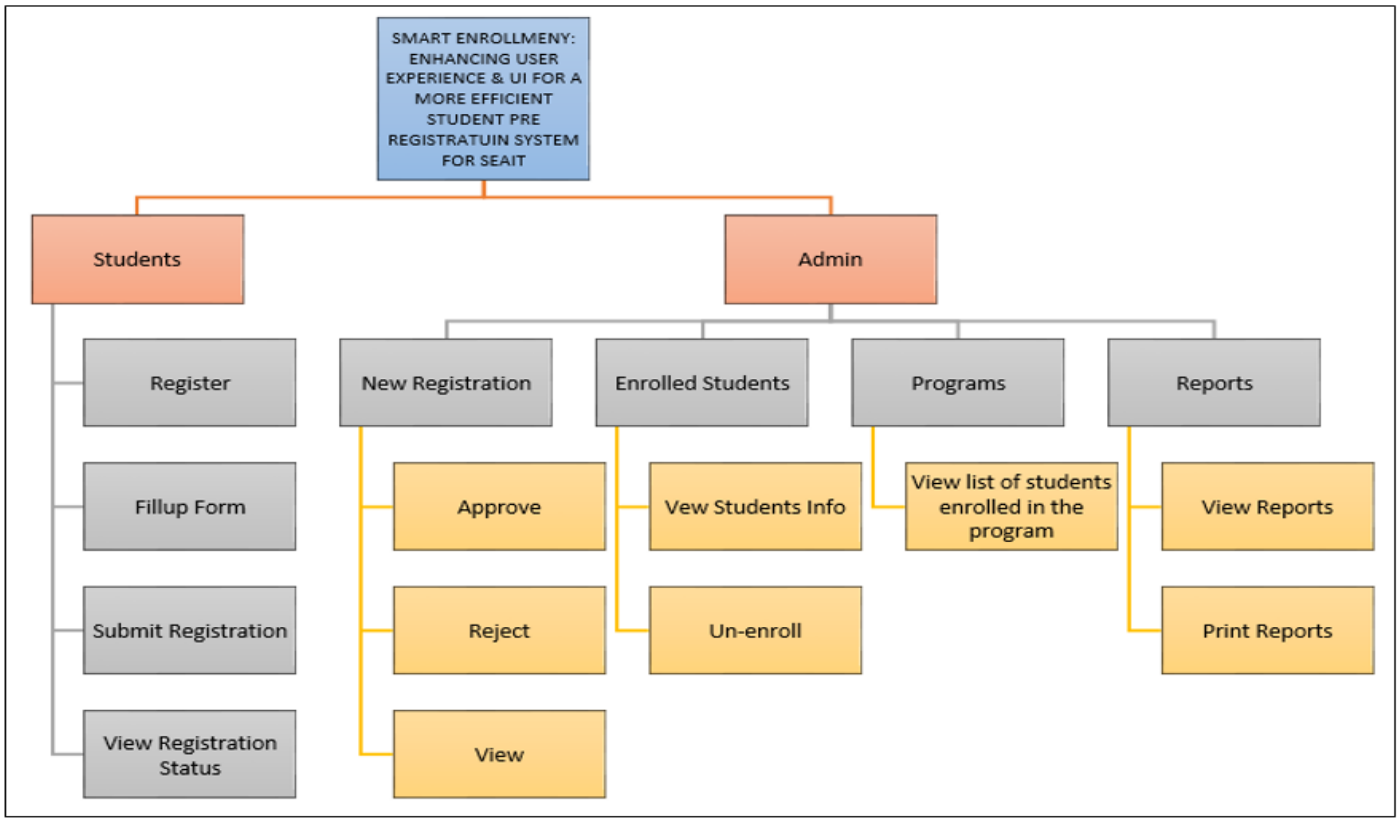


Fig 1 System Architecture

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*B. Features and Functionalities*

This system provides a functionalities to support SEAIT Pre - Registration System needs. Each feature is designed to address the research problem by enhancing usability, functionality, and responsiveness within the system.

➢ *Intuitive User Interface (UI) for All Users*

A clean, simple, and visually guided interface with minimal clutter, designed with clear labels, tooltips, and visual cues to help even non-tech-savvy users navigate easily.

➢ *Step-by-Step Enrollment Workflow*

A guided, multi-step process with progress tracking. Students are taken through one step at a time (personal info, Educational Background and confirmation).

➢ *Real-Time Data Validation & Error Prevention*

Instant checks for missing/invalid data (e.g., duplicate entries, incomplete fields). Automatically flags errors (e.g., mismatched IDs, invalid emails) before submission

➢ *Centralized Admin Dashboard for Efficient Management*

A unified dashboard with student records, analytics, and processing tools

➢ *Mobile-Compatibility & Accessible Design*

Responsive layout with screen-reader compatibility and adjustable text sizes. Students can enroll on any device without formatting issues..

*C. User Interface Design*

The user interface (UI) is designed with principles of clarity, simplicity, and accessibility in mind. Key design considerations include:

*D. Login Interface*

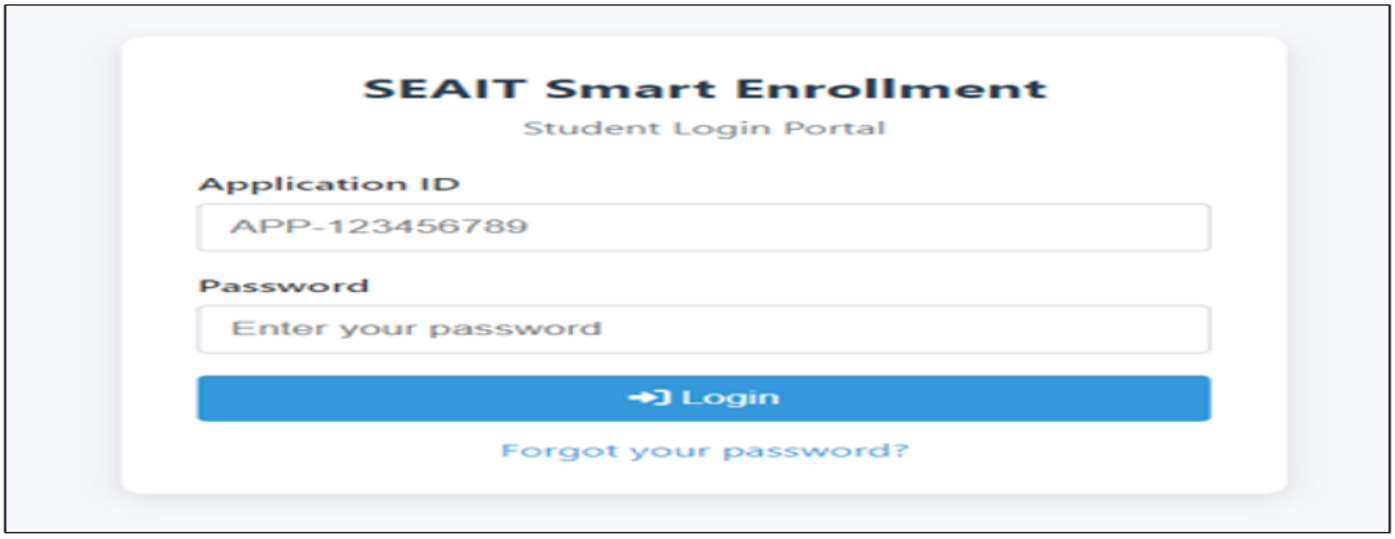


Fig 2 Login Interface

*E. Student Dashboard Interface*

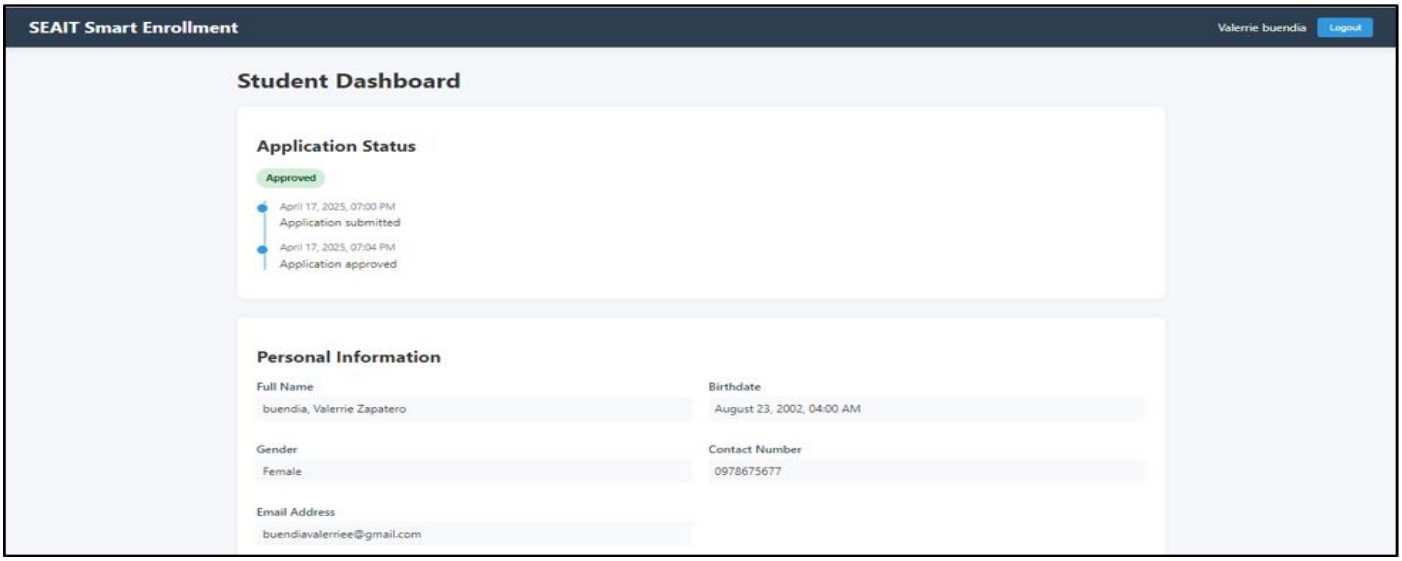


Fig 3 Student Dashboard Interface

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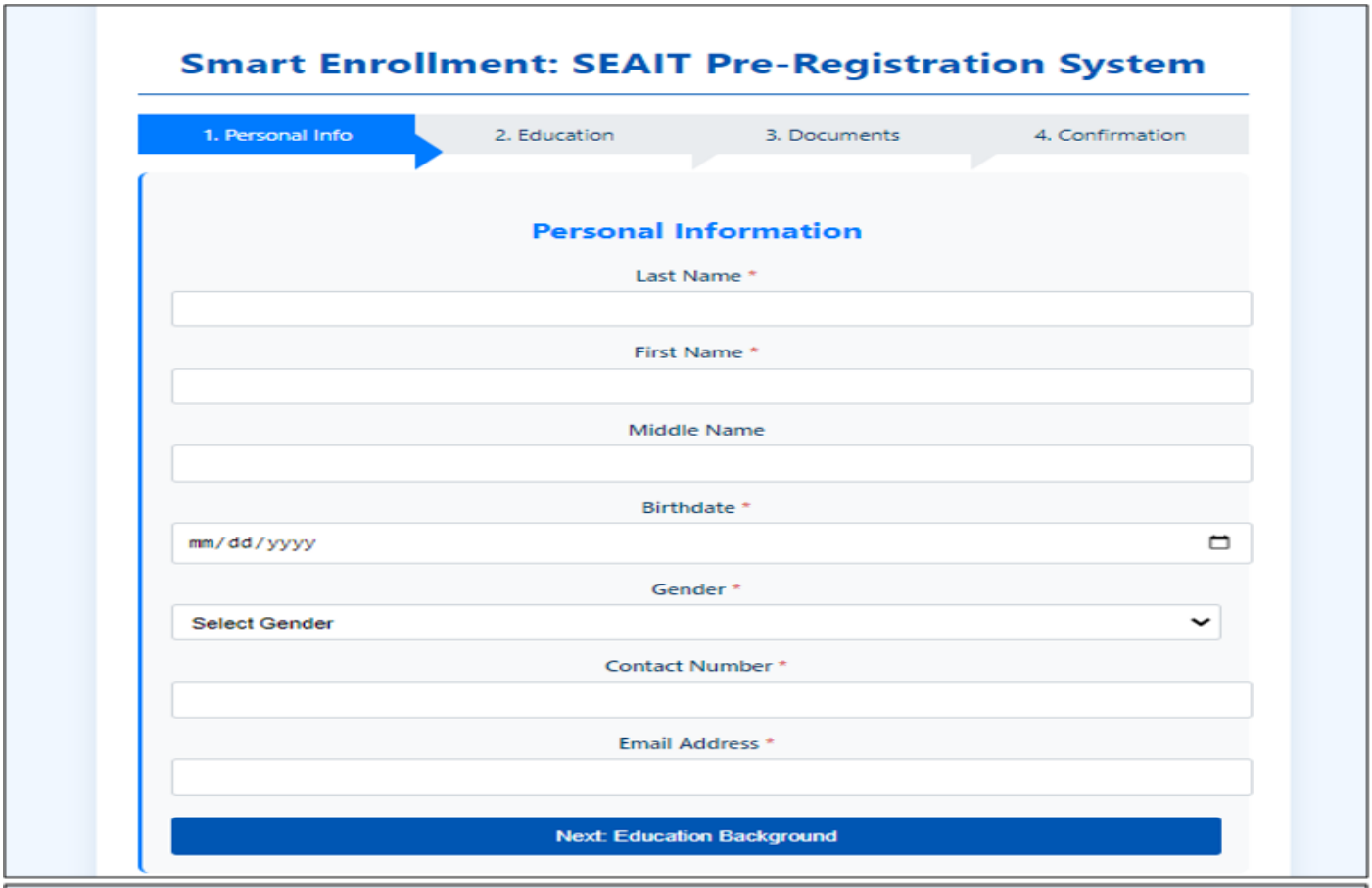
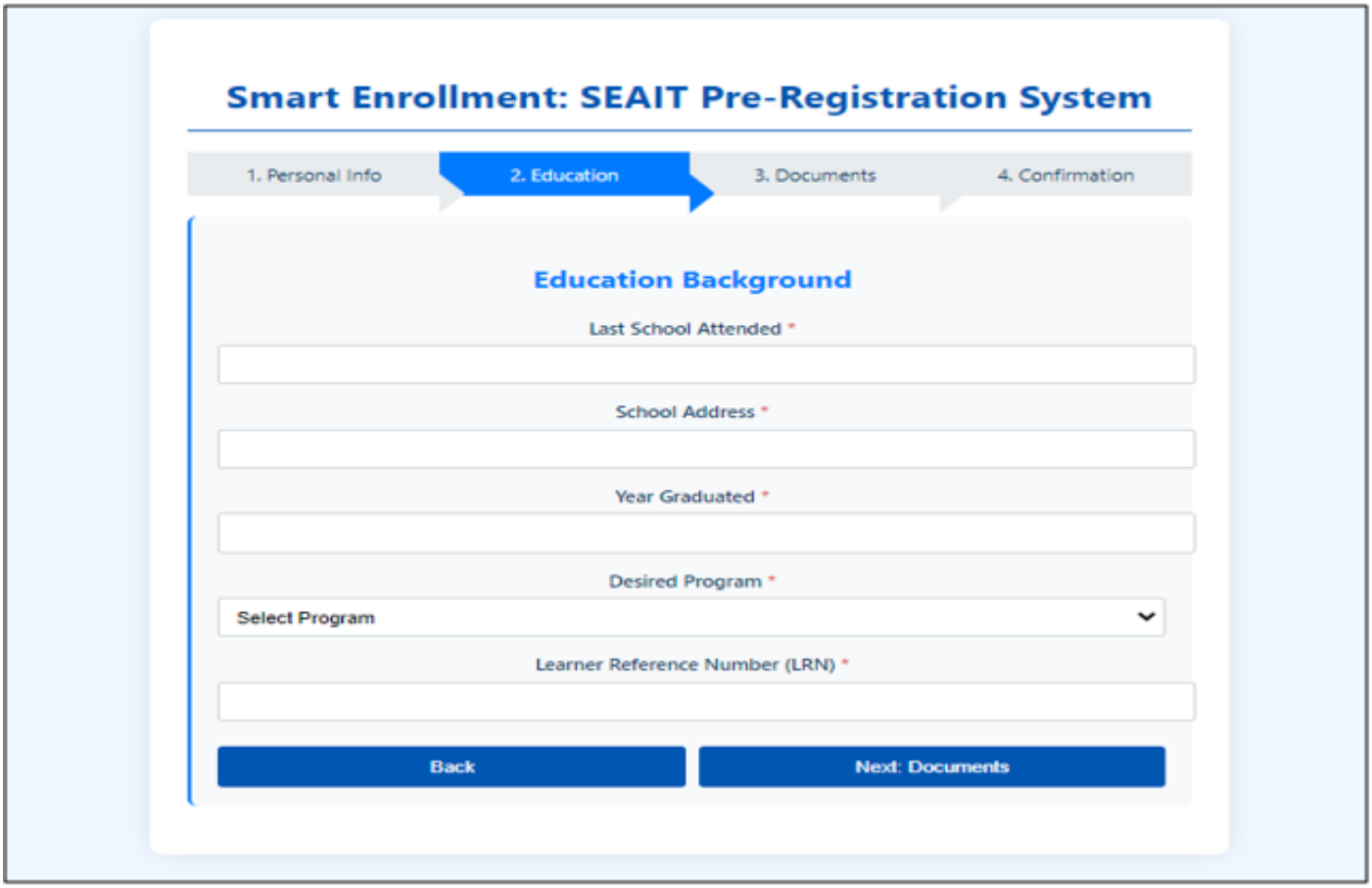
*F. Student Registration Interface*



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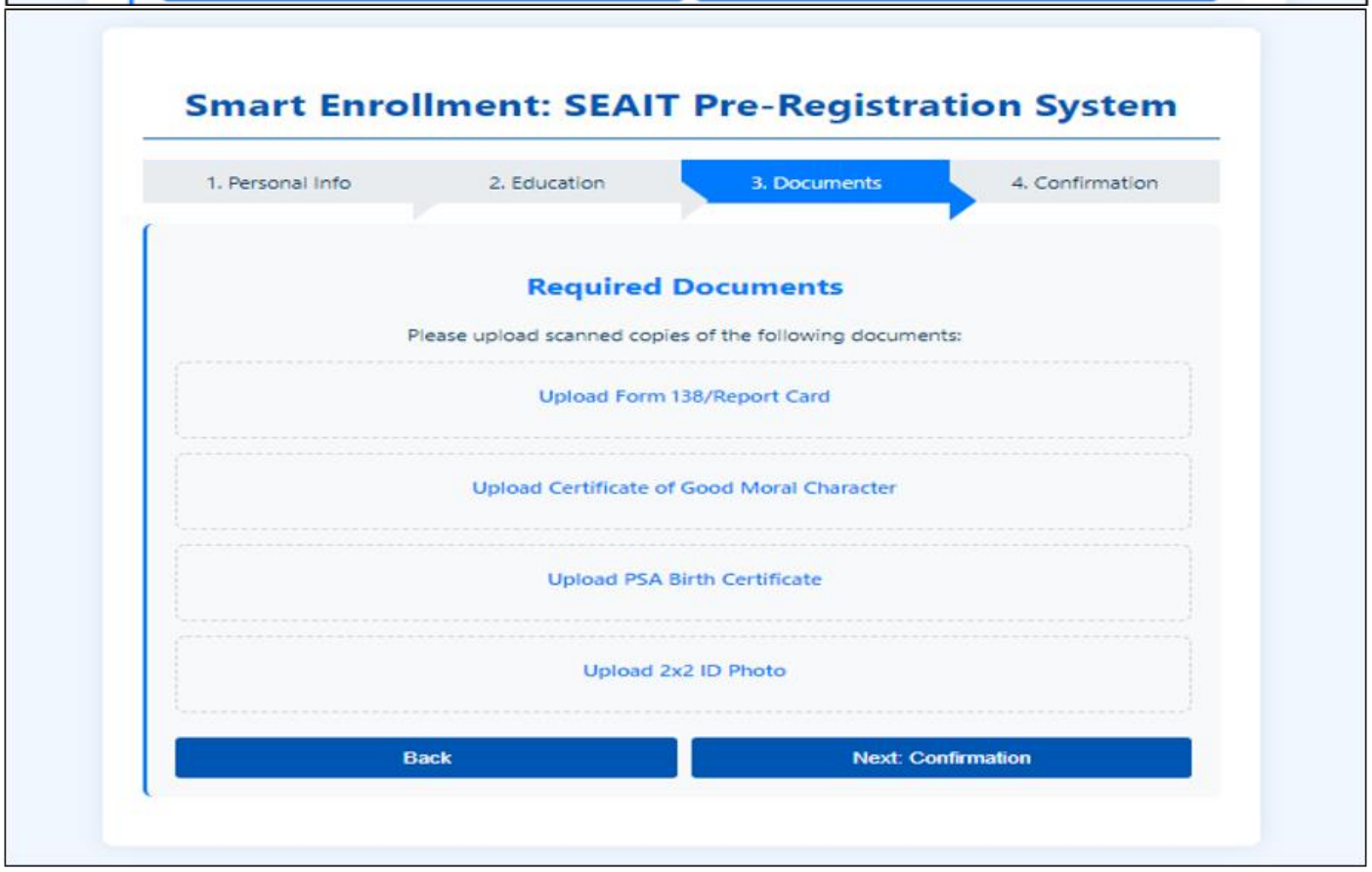


Fig 4 Student Registration Interface

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*G. Admin Dashboard Interface*

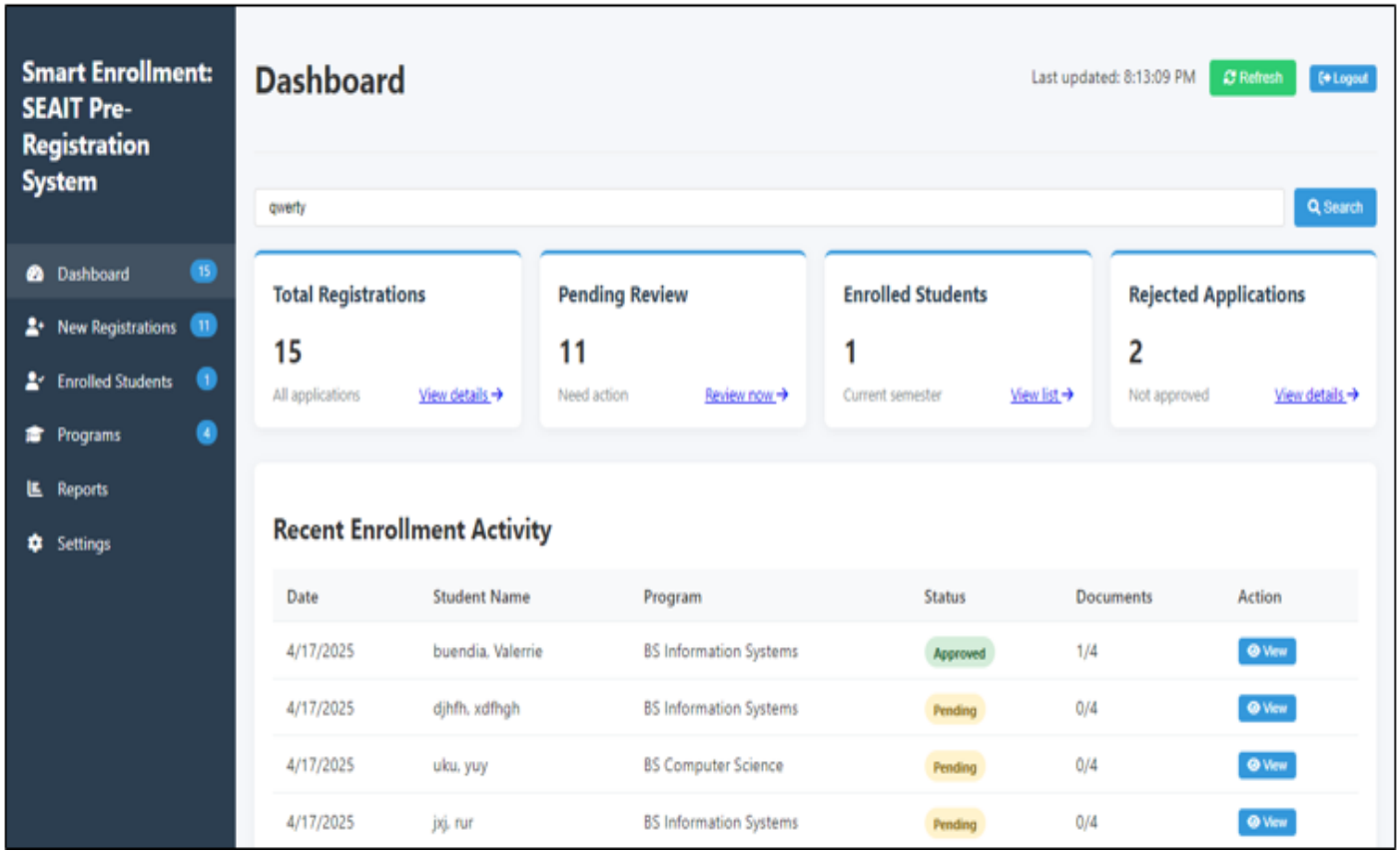


Fig 5 Admin Dashboard Interface

*H. New Registration Interface*

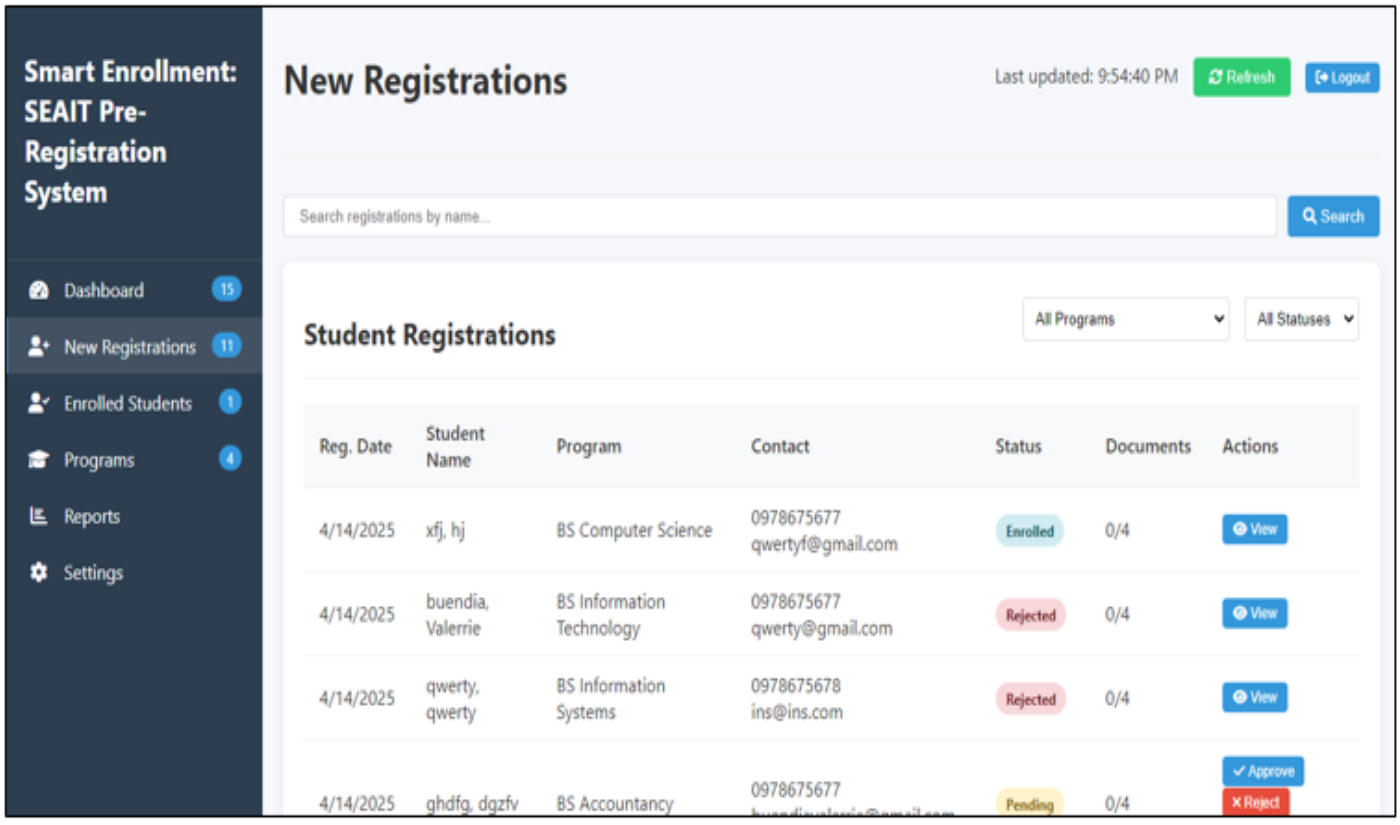


Fig 6 New Registration Interface

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*I. Enrolled Students Interface*

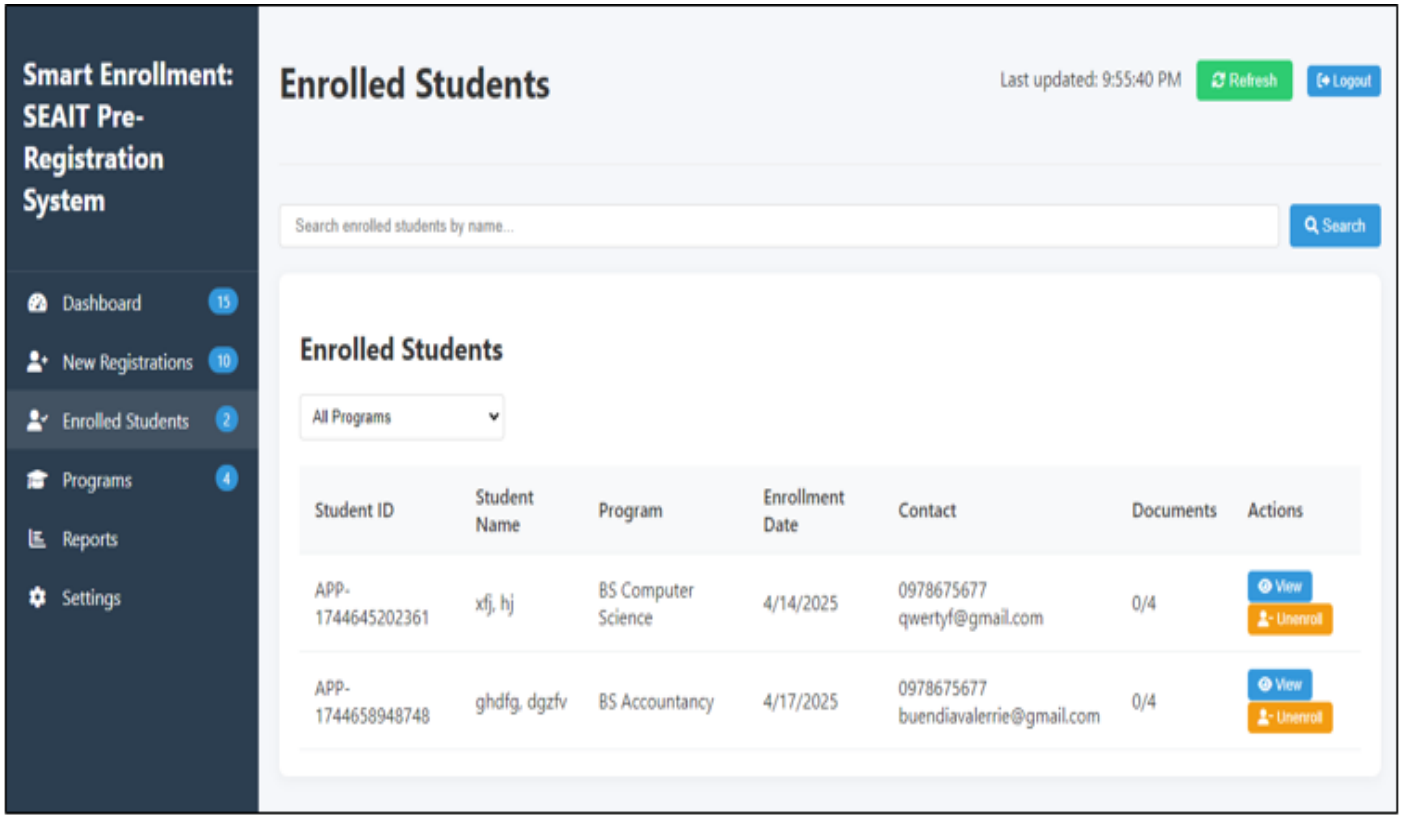


Fig 7 Enrolled Students Interface

*J. Programs*

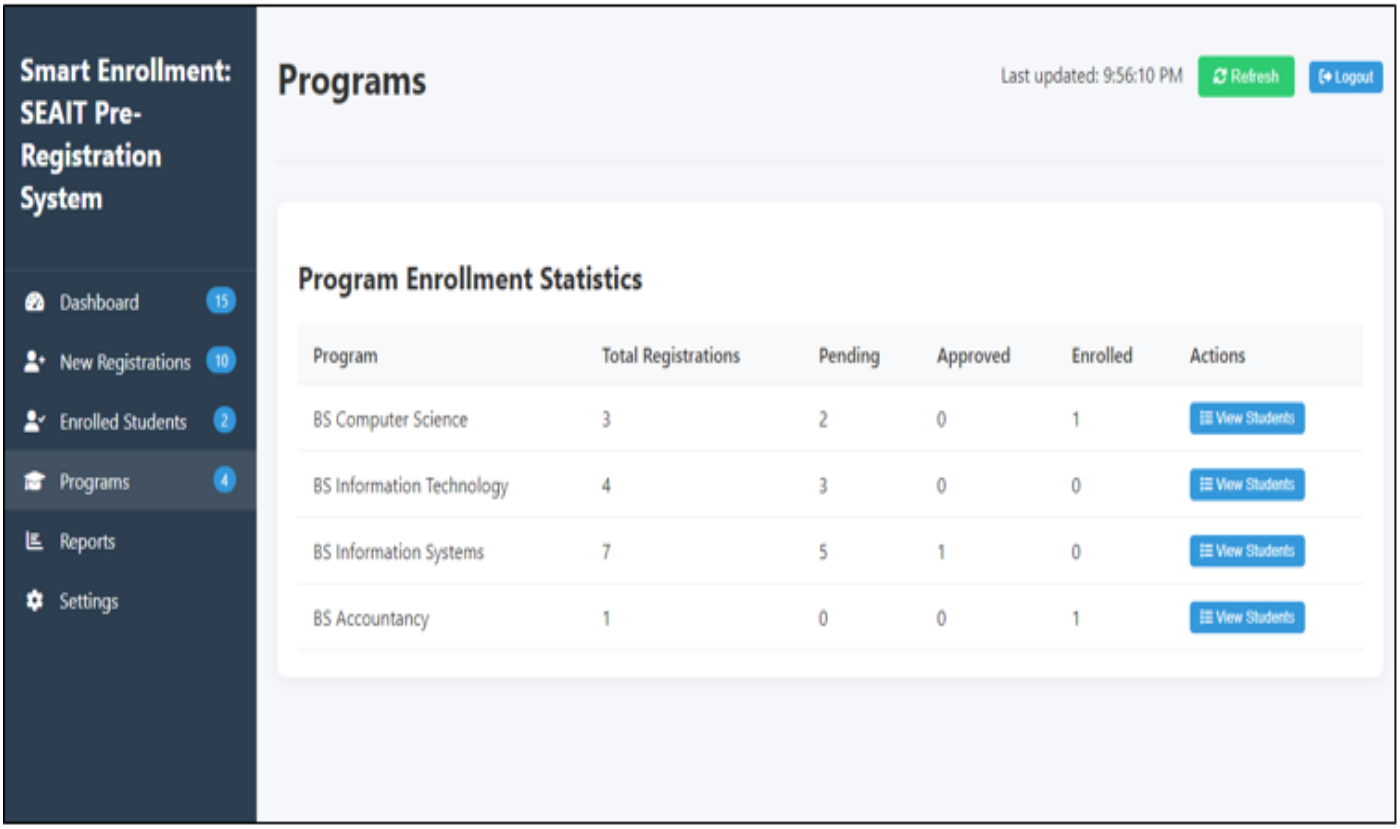


Fig 8 Programs

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*K. Reports Interface*

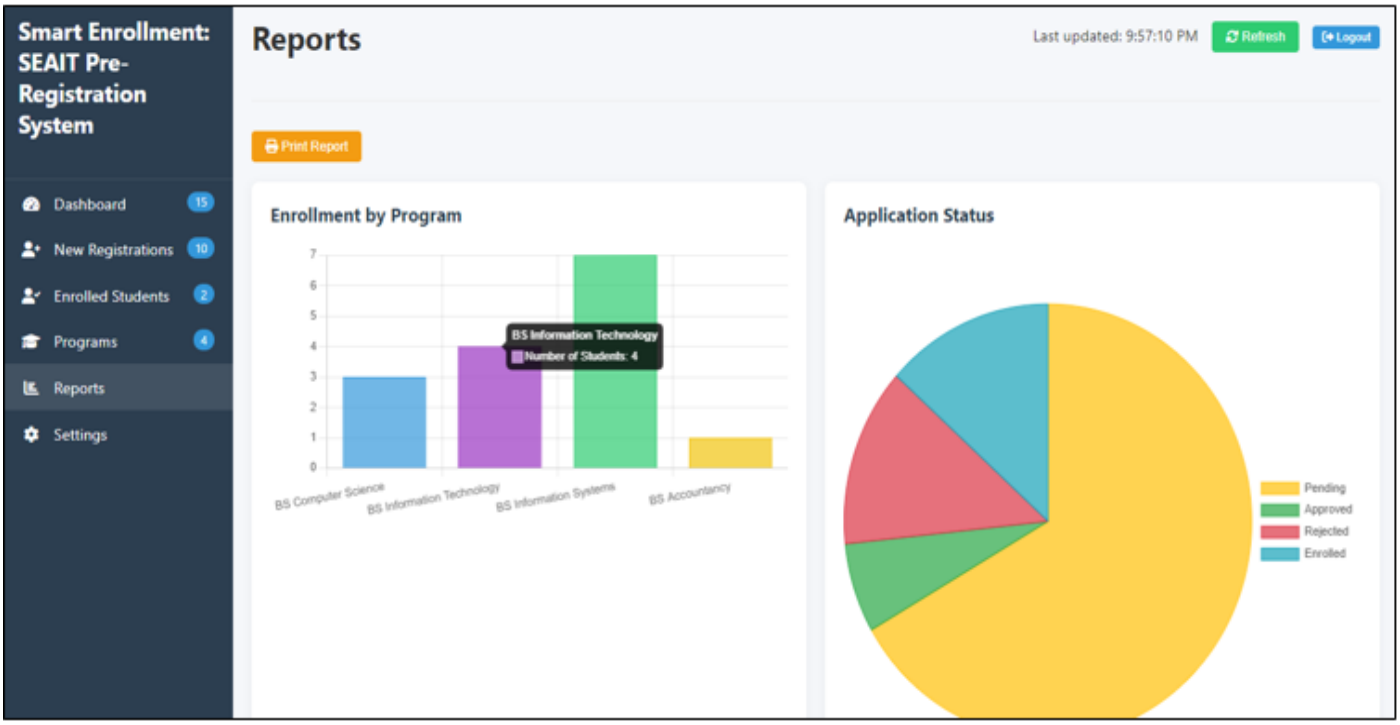


Fig 9 Reports Interface

## V. EVALUATION AND RESULTS

*A. Usability Testing*

The comparative analysis of SEAIT's existing pre-registration system and the proposed enhanced user-centered design reveals significant improvements in usability, efficiency and accessibility. To ascertain the efficacy of the system named Smart Enrollment Enhancing User Experience & UI for a More Efficient Student Pre-Registration System for SEAIT, usability testing was administered among students with previous experience on the existing pre-registration platform. Users were asked to perform everyday pre-registration tasks using the new interface, while observers monitored time elapsed, errors made and overall ease of use. Post-task interviews and questionnaires were employed to elicit detailed feedback. User feedback was gathered through systematic questionnaires and open-ended questions. The data was then analyzed quantitatively to tap into patterns and insights through mean values and percentage representations to interpret the trends in user experience.

*B. Performance Metrics*

The registration process has become a semesterly nightmare for many. Picture this: you're trying to sign up for classes on your phone between lectures, but the page keeps freezing. The loading wheel spins endlessly while the clock ticks toward the deadline. This isn't hypothetical - it's the reality for 35% of students stuck with glacial loading times.

The consequences are real and damaging. Two out of every five students have missed crucial registration deadlines not because they forgot, but because the system failed them. Imagine losing your spot in a required course because a website wouldn't load properly. That's not student irresponsibility - that's institutional failure.

What's most baffling? In 2024, when everything from food delivery to banking works seamlessly on phones, our registration system still forces 89% of smartphone-dependent students to struggle through a desktop-era interface. The few who praise the system mention bare-minimum functionality, like being grateful a door opens when you turn the knob.

*C. Comparative Analysis*

The Smart Enrollment system has significant improvements compared to the current pre-registration system. Some of the major improvements include enhanced mobile compatibility a guided process to avoid mistakes, and tutorials embedded to assist users. Whereas the system as it stands was criticized by 35.5% of users as slow, and 41% confessed to missing deadlines the new system is intended to eliminate such inefficiencies. But a shortcoming can be the initial adaptation period for users who are not familiar with the new interface, which will be alleviated through onboard features like tutorials.

*D. Results and Findings*

Users' experiences with the current pre-registration system are a mixed bag some find it manageable, but many run into frustrating roadblocks. Most people don't use the system often (falling between "Once a Year" and "Rarely"), and their overall satisfaction hovers around neutral to slightly negative. The biggest complaint? Slow loading times, which 35% of users flagged as a major hassle. On the bright side, a small but notable group (20%) appreciates that the system is at least easy to access.

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Efficiency is another sticking point. While most users wrap up pre-registration in under 30 minutes, a concerning 41% admit they've missed deadlines hinting that the process isn't as smooth as it should be. When problems pop up, two-thirds of users resort to trial and error instead of getting clear help, and an overwhelming 76% would rather watch a quick video tutorial than dig through written instructions.

What's on their wishlist for improvements? Nearly half (44%) want a step-by-step guide baked into the system, and since most log in via smartphones, mobile optimization is a must. Bottom line? Users need a faster, simpler, and more intuitive system one that doesn't leave them guessing or racing against the clock.

## VI. DISCUSSION

### *A. Interpretation of Findings*

***RQ1.*** *How often do you use the current pre-registration system?*

Based on the evaluation results, the current pre-registration system received an average usage rating of **2.16,** indicating that most users access it between **"Once a Year" and "Rarely".** While the system is essential during enrollment.

***RQ2.*** *How would you rate your overall experience using the current system?*

According to evaluation results, the overall user experience with the current pre-registration system was rated **Neutral to slightly Negative**, with a **mean score of 2.60**. While the system was generally user-friendly, some respondents experienced lags, navigation issues, unclear instructions, and slow loading times. Despite these challenges, most users were able to complete their registration tasks with ease. The findings suggest that improvements in speed, clarity, and responsiveness could enhance the user experience.

***RQ3.*** *What challenges or frustrations have you faced while using current system?*

The results, the challenges and frustration encountered while using the current pre-registration system were rated **35.5% faced a Slow loading times,** with a **mean score 0.35** the most common issues reported were slow loading times, system lags, difficulty navigating the interface, and unclear instruction. These problems caused delays and increased user frustration during the registration process.

***RQ4.*** *What you like to about the current system? (if anything)*

Based on the evaluation results, **20%** of respondents started that the current system is easy to access, with a **mean score of 0.2.** This suggests that while some users appreciate the system accessibility, most found few features to highlight as positive, indicating overall improvement.

***RQ5.*** *Which features would you love to see in a smarter pre-registration system?*

According to the evaluation results, **44.1%** of respondents expressed a preference for step-by-step guide in smart pre-registration system, with a mean score 0.44. this suggest that users are seeking a more structured and easy-to-follow approach to streamline the pre-registration process.

***RQ6.*** *What devices you commonly use to access the system?*

The results, most respondents reported using smartphones to access the system, with a **mean score of 1.14**. This indicates that mobile devices are the preferred platform, suggesting the need for a mobile-friendly system design to enhance user experience.

***RQ7.*** *How much time does is usually take you to complete pre-registration?*

The evaluation results show that pre-registration usually takes between 10 to 30 minutes, with a **mean score of 1.61.** This suggests that while the process is manageable, users may benefit from further improvements to reduce the time spent, enhancing overall efficiency.

***RQ8.*** *How you ever missed a pre-registration deadline?*

According to the evaluation results, **41%** of respondents admitted to missing a pre-registration deadline, with **a mean score of 0.41**. This indicates that almost half of the users face challenges in meeting deadline, suggesting the need for improved notifications or system features to help users stay on schedule.

***RQ9.*** *How do you usually get help if you encounter issues during pre-registration?*

Based on the evaluation results, most users reported seeking help from classmates or friends when facing issues during pre-registration**.** About **66.7% used "trial and error"** as their method of solving problems, with a **mean score of 0.67.** Other common sources of assistance included school staff and unofficial online platforms such as group chats or social media. However, the absence of a formal support channel sometimes led to confusion and delays. Despite these challenges, users were generally able to find the help they needed. The findings suggest that providing clear and accessible support resources could enhance the overall pre-registration experience.

***RQ10.*** *Would you prefer a video tutorial or step-by-step written guide for pre-registration?*

The evaluation results **76%** of respondents preferred a video tutorial for pre-registration, with a **mean score of 0.76**. This indicates a strong preference for visual and interactive learning, suggesting that incorporating a video tutorial could enhance the user experience and make the process easier to follow.

### *B. Summary of Key findings*

This study aims to gain a feedback on the current pre-registration system reveals a mix of neutral experiences and notable pain points. Users generally interact with the system infrequently, averaging between "Once a

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Year" and "Rarely," and rate their overall experience as **slightly negative to neutral (2.6/5)**. Common frustrations include slow loading times (35.5%), while a minority appreciate the system's ease of access (20%). When it comes to improvements, users overwhelmingly want a step-by-step guide (44.1%) or video tutorials (76%) to simplify the process. Most access the system via smartphones, and completing pre-registration typically takes under 30 minutes, though 41% have missed deadlines due to difficulties. For troubleshooting, 67% rely on trial and error highlighting a need for better support resources and a clear instrictions. In short, while the system is functional, its usability suffers from technical delays, unclear guidance, and a lack of intuitive help features key areas for enhancement in a smarter pre registration process.

*C. Final Remarks*

Smart Enrollment System: A System for Students Pre-Registration in Higher Education. The research highlights the need for building systems that can navigate the intricate balance between the technical aspects of functionality and a user-centred interface that caters to the requirements of both the students and the admin staff. If you need an example of how good UI/UX design can help convert a physical process into a fully digital experience, this is it. This research furthers the HCI domain by advancing user-centric, interactive, and educational spaces with clear design paradigms, the pillars for designing future Web-based admission systems.

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## APPENDICES

➢ *Appendix A: QUESTIONNAIRE*

- How often do you use the current pre-registration system?
- How would you rate your overall experience using the current system?
- What challenges or frustrations have you faced while using the current system?
- What you like about the current system(if anything)?
- Which features would you love to see in a smarter pre-registration system?
- What devices do you commonly use to access the system?
- How much time does it usually take you to complete pre-registration?
- Have you ever missed a pre-registration deadline?
- How do you usually get help if you encounter issues during pre-registration?
- Would you prefer a video tutorial or a step-by-step written guide for pre-registration?