SEVI: Development of Cavite State University-Main Campus Student Inquiry Auto-Response System

Rationale / Introduction

Students at Cavite State University-Main Campus (CvSU) often encounter difficulties accessing university information, such as guidelines, policies, and procedures, throughout their academic journey. Obtaining timely and clear answers can be challenging due to limited office hours, potential communication barriers, or simply the need for immediate clarification. This highlights the need for a readily available and user-friendly communication platform. Enter the potential of an auto-response system specifically designed to address student inquiries about CvSU policies, procedures, and more. Similar to FAQ chatbots used in businesses, this system would leverage natural language processing to understand student questions and provide instant answers from a comprehensive knowledge base of CvSU policies. This readily available resource could bridge the gap between students' need for information and traditional support channels, empowering them to find clear and consistent answers efficiently.

Significance of the Study

This study is important because it introduces a digital system that improves how students access university information. By developing SEVI, an auto-response system, students can quickly and easily get answers to their inquiries about policies, procedures, and university services. This system reduces the challenges of delayed responses and limited office hours, ensuring that students have access to accurate information whenever they need it.

The system benefits students by making information more accessible, reducing confusion, and allowing them to focus on their academic progress. Faculty and administrative staff also benefit as SEVI reduces their workload by handling frequently asked questions automatically. This allows them to focus on more complex student concerns that require direct assistance.

On a larger scale, SEVI contributes to the university's digital transformation, making communication more efficient. By reducing reliance on paper-based inquiries and manual

responses, the system also supports sustainability efforts. Overall, this study provides a practical and innovative solution to improve information access within the university.

Scope and Limitations of the Study

This study focuses on designing, developing, and testing SEVI, an auto-response system for Cavite State University-Main Campus (CvSU). The system aims to help students access university-related information, such as policies and procedures, through a user-friendly platform.

SEVI will be designed to:

- Answer student inquiries about CvSU policies, procedures, and services using a built-in knowledge base.
- Provide a simple interface where students can search for relevant information.
- Allow university administrators to update responses and improve the system over time.
- Collect feedback from users to enhance accuracy and usability.

The system will be built using HTML5, CSS3, JavaScript, and Node.js, with Firebase for database management. Natural Language Processing (NLP) will be integrated to improve SEVI's ability to understand and respond to student questions. Testing and evaluation will follow the ISO 25010 framework to assess performance, usability, and reliability.

However, the study has certain limitations:

- SEVI will initially focus only on general student inquiries and will not handle complex administrative processes like enrollment or grade requests.
- It will require an internet connection for access and functionality.

- The system's accuracy will depend on the completeness of the knowledge base, requiring continuous updates from university staff.

Despite these limitations, SEVI aims to be a reliable tool that improves student access to university information and reduces delays in obtaining responses.

Objectives of the Study

This capstone project, titled 'SEVI: Development of Cavite State University-Main Campus Student Inquiry Auto-Response System,' outlines the development and implementation of SEVI, an auto-response system specifically designed to address general student inquiries at CvSU. The general objective is to provide a solution for the challenges students and faculty staff are currently facing by creating a communication platform that alleviates the difficulties in obtaining university information. It facilitates and centralizes the process of obtaining information, ensuring that students can quickly and effectively access relevant details related to their academic needs.

Specifically, the project has the following objectives:

1. Analyze the gathered data using fishbone diagrams to understand the challenges faced by students and staff, the factors influencing these challenges, and the overall user requirements necessary for the successful development of the SEVI Auto Response System designed to address student inquiries at CvSU.
2. Design the project with the following features:

   a) An interface that provides insights into user interactions, frequently asked questions, and areas in need of improvement.

   b) An option to customize SEVI's responses, greetings, and interface according to the university's branding and preferences.

   c) An ability to ask questions and receive accurate information about university policies, procedures, services, and more.

   d) A search feature that enables users to quickly find relevant university information such as university guidelines, policies, etc.

e) A way for admins to collect feedback from end-users and continuously improve SEVI's performance and effectiveness.

3. Develop the project using the Rapid Application Development (RAD) Prototyping Methodology with iterative development cycles. Utilize HTML5, CSS3, JavaScript, and Node.js for development, with Firebase for database integration. Incorporate Natural Language Processing (NLP) as the knowledge base to enhance the system's ability to understand and respond to student inquiries. All code will be written in Visual Studio Code (VSCode) to ensure readability and maintainability.
4. Test and improve SEVI's functionality, usability, and reliability iteratively through thorough testing methods, user feedback, and continuous refinements. Refine SEVI by improving its knowledge base, NLP rules, and user interface based on identified areas for improvement to ensure it meets the required standards and aligns with the needs of the CvSU students. Conduct a final evaluation with evaluators and the broader student population to ensure SEVI operates effectively before universitywide implementation. ISO 25010 standards will be used to assess its performance in terms of functionality, usability, reliability, performance, scalability, and maintainability;
5. Prepare an implementation plan for the deployment of the SEVI AutoResponse System, outlining the steps involved in installing, configuring, and integrating the system within CvSU to address student inquiries.

Expected Outputs

This project addresses the challenges in accessing timely and clear university information stated in the background. Current methods can be frustrating and slow, leading to delays in finding answers and potentially hindering student progress. The proposed system, with its 24/7 accessibility, user-friendly interface, and clear information delivery, aims to bridge this gap. The Rule-Based NLP approach will leverage a comprehensive knowledge base built from collected FAQs and university resources. This ensures that the system can provide accurate and consistent answers to student inquiries, addressing the identified issues of outdated communication channels and limited capacity during peak periods.

The expected outcomes of this project are:

1. Development of a functional auto-response system: A user-friendly system designed to answer student inquiries about university information will be created.
2. Improved information access for students: Students will have a readily available information channel, allowing them to access timely and comprehensive answers to their questions and ensure information accuracy, reliability, and availability.
3. Enhanced student experience: By facilitating information access and reducing frustration associated with traditional methods, the auto-response system is expected to contribute to a more positive student experience at the university. The successful implementation of this auto-response system will offer a valuable contribution to CvSU by demonstrating the effectiveness of NLP technology in enhancing student support services. The project's findings can also be valuable for future researchers seeking additional improvements in information accessibility and student experience through innovative technological solutions in the university

References

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