SYLLAGENIUS DESKTOP APPLICATION

SYLLAGENIUS: AN AI GENERIC SYLLABUS GENERATOR USING NLP

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INTRODUCTION

Syllagenius is a desktop application that can generate a generic syllabus. It uses user-provided PDF e-books to ensure each syllabus is tailored to the specific content and objectives of the course. It can modify the syllabus based on the type of semester and number of exams. Plus it uses Bloom's Taxonomy to make sure material hits different cognitive levels and more effective. The tool streamlines the process of generating syllabi by using advanced technologies. It also ensures that the generated content is aligned with contemporary educational standards. The reliance on Bloom's Taxonomy within Syllagenius also introduces certain limitations. Clear course guidelines and a well-organized syllabus can significantly boost students' commitment to their studies. Today's education often requires blending information from different subjects into one cohesive learning experience, which adds another layer of complexity.Resource limitations within educational institutions exacerbate these challenges, hindering comprehensive syllabus development by hindering access to the latest teaching material. A well-planned syllabus is a key part of a student's education.

METHOD

The study was conducted to evaluate the acceptability of the desktop application. It leverages the Natural Language Processing (NLP) technique to generate a generic syllabus based on the inputted e-book. It can analyze historical data, student feedback, and performance metrics to tailor the syllabus to meet specific educational goals and learning styles. The study explains how the application was created and developed, as well as how the researchers installed it and tested it. It also explains how to use the system to improve the quality and effectiveness of educational materials. The process flow of the Syllagenius is represented through a flowchart, illustrated in Figure 2. Incorporating NLP in syllabus creation enhances efficiency, personalization, resource curation, standards alignment, and adaptability. The system can analyze vast amounts of text data, extracting and synthesizing information from academic research, textbooks, and URRICulum standards. A demonstration of the system?s functions and a discussion regarding its objective was conducted to illustrate the usage of the application. This section discusses the procedures followed on how the desktop application was developed based on the design specifications. The main function, ?enhance_description?, initializes a text-totext generation pipeline with the ?stanford-oval/paraphraser-bart-large? model. It splits the input description into sentences, paraphrases each sentence, and joins the enhanced sentences into a coherent text. The diagram reveals how the input, process, conditions, and output aresequenced accordingly to furtherly comprehend how the system works. The techniques for project design, development, operation, and testing, as well as the evaluation technique, are described in this chapter. The flow diagram clearly and concisely represents the steps to execute the system. NLP facilitates the personalization of learning materials, allowing educators to tailor syllabi to individual student needs by analyzing natural language patterns. The testing was conducted to check if the application is complete, correct, and appropriate for the syllabus. This allows for proactive adjustments to the syllabi, incorporating additional resources or support where necessary. The goal is to create varied and engaging course descriptions using a structured approach. The process is as follows: gather

educational materials, academic papers, articles, and any other relevant resources. Assess how quickly the application responds to user inputs, processes syllabusrelated tasks, and achieves the desired throughput rates. Monitor and analyze how efficiently the application utilizes system resources to perform syllabus-related functions. The overall weighted mean rating for each criterion and the grand weighted mean of the overall score will be computed based on the collected evaluation. NLG systems can support multilingual capabilities. They can be used to create syllabi for courses taught in diverse settings. Expected Output, which describes what is likely to happen throughout the test, can be added to the NLG language. NLG systems have been used in the development of the Internet and mobile devices. The NLG system was developed in the 1970s. It was first used to test computer networks in the 1980s. The system has been used to develop the Internet.

RESULTS

The users can select a specific week, and the corresponding topics will be highlighted on the left side of the screen. The users can also see how many major exams they have selected. The user can save the generated syllabus as either a DOC file or a PDF file. Users can edit the syllabus by clicking the right arrow button on the preview page or by directly clicking the edit button located above Edit Page62. The application currently sets up limits on the number of main supporting ebooks that may be added. Syllagenius makes it possible to create syllabi instantly, enabling more streamlined and effective syllabus preparation procedures. By using user-provided PDF e-books, Syllagenious streamlines the process of creating a syllabus. The limitations of the developed desktop application software are the reliance on Bloom's Taxonomy and the use of e- books as input materials. The evaluation results summary is presented in the Table 5. The objective is to offer educational institutions and instructors a user-friendly tool that makes creating a syllabus simple.

DISCUSSION

The system was evaluated to be highly acceptable in terms of Functional, Suitability, Performance Efficiency, and Reliability which proves that the system can be helpful to educators. The following recommendations are put forward for further enhancement of the desktop application. The application efficiently utilizes resources to perform syllabus-related tasks, with the application's usage optimized within acceptable levels of correctness. The system was successfully developed with the following features:. A more interactive user interface with drag-and-drop functionality and. Real-time preview of the generated syllabus to enhance user engagement and ease. customization. The application's capacity was tested by pushing it to its maximum. It can handle the expected workload associated with syllabus creation without breaching predefined limits. The generated syllabi were tested against predefined templates and expected outcomes. It was also tested to see if the application could handle the workload. The results were published in a paper called "Syllabus Creation in the Cloud" published by the University of California, San Diego. The paper was published on November 14, 2013. It is available online in English and Spanish.