**DEVELOPMENT OF A PAST EXAM QUESTION RETRIEVAL SYSTEM**

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**SEPTEMBER 2023**

**1.1 INTRODUCTION**

An examination is defined as the assessment of a person's understanding of their knowledge. A formal test may be used to conduct the evaluation. The exam is taken to evaluate a student's proficiency in a particular subject. Examinations can take many forms, including written tests, oral exams, practical demonstrations, or a combination of these methods. The purpose of an examination is to determine a person's level of knowledge or skill in a particular area and to provide an objective measure of their abilities. As a student in higher institutions, the importance of exam preparation cannot be overemphasized because it helps you to gain a better understanding of the material you have been studying. (teachmint, 2022)

In preparation for an exam, there are a few things you can do to increase your chances of success. ensure one understands the material that will be covered on the exam. This means going over your notes, attending review sessions, and asking your lecturer for clarification on any topics you don't understand. Second, create a study schedule and stick to it. This will help you ensure you have enough time to review all of the material before the exam. Most importantly, the study and use of past questions by students can be an effective way for them to prepare for an upcoming exam. Past questions provide a great source of insight into the types of questions that may be asked and the topics that will be covered on the exam. By reviewing past questions, students can become familiar with the exam format, the types of questions they may be asked, and the topics they should focus their studying on. In addition, past questions can be used to identify areas of weakness and improve studying strategies. (Writer, 2022)

A retrieval system for past exam questions by students will be a web-based platform. This platform could provide the students with access to a database of past questions from various courses and departments. The platform could also enable the students to search, filter, and sort past questions to find the ones they need. In addition, the platform could provide students with the ability to create their own collections of past questions and store them in a personal library. This could help students easily access and review the questions they have already seen.

**1.2 STATEMENT OF THE PROBLEM**

The success rate of student’s exams depends on how well prepared they were before each exam, it is no doubt that past questions of exams are essential for preparing for exams regardless of the high institution, access to these examinations past questions is actually difficult since it was done before the particular student session. Students have to visit the different business centers or café to seek past questions. It is quite uncertain if they will get the past questions, this task is repeated each semester which obviously the stress involved is cumbersome, or ask students from the previous session who might have misplaced or thrown them away since they are done with the semester which brought about the idea of developing a central e-hub for retrieval of the past question for students to boost student exam success rate.

**1.3 AIM AND OBJECTIVES**

**The aim of the research is to** develop a past exam question retrieval system **for students and the objectives of this research work are as follows**

1. To design a working platform where past question papers can be retrieved and stored for posterity reasons.
2. To implement a system where students can find very important resources for them to work with, especially in times of examination preparation
3. To evaluate how efficiently the system manages the information stored on it.

**2.1 LITERATURE REVIEW**

Article Title: An android-based blood bank information retrieval system

Authors: Kayode, A. A., Adeniyi, A. E., Oluwaseun, R., Ogundokun, & Ochigbo, S. A. (2019)

**Summary of the work**

This research project addresses the inefficiencies and errors associated with manual blood bank record-keeping using paper files. It proposes a solution in the form of a web-based and Android-based blood bank information retrieval system. The web application enables blood bank administrators to update their blood inventory, while the mobile app allows users to search for blood supplies from registered blood banks. Additionally, the system includes a notification feature that allows blood banks to request blood donations from registered donors via the application, significantly improving the speed and accuracy of blood supply management in emergency situations.

**Methodology**

The methodology involves creating a blood bank information system using web and Android platforms. The web app acts as a central database for blood banks to register and update their inventory in real-time. The Android app enables users to search for blood supplies and allows registered blood banks to send notifications to donors. The development includes design, coding, testing, and user feedback for a user-friendly and effective system.

**Recommendation**

The findings from the generated output indicate that the proposed blood bank information system is highly user-friendly and greatly enhances blood supply management. It is recommended that this system be made widely accessible to both blood banks and potential donors due to its ease of use and efficiency. Implementing this system can significantly expedite the process of finding blood supplies and donors during emergency situations, thereby reducing health complications and potentially saving lives by minimizing delays in the search for blood resources.

**Research Gap**

The gap identified in the research work is the need for a more extensive evaluation of the proposed blood bank information system's scalability, adaptability, and potential challenges to its widespread adoption. While the system shows promise in its current context, further research should explore its effectiveness in different healthcare settings, resource constraints, and regulatory environments. Addressing these aspects would provide valuable insights to enhance the system's implementation and impact.

Article Title: The Impact of ICT on information retrieval systems in academic libraries.

Authors: Agboola, B., & Shaibu, R. (2019).

**Summary of the work**

This study examines how Information and Communication Technology (ICT) impacts information retrieval systems in academic libraries. It employs a survey research design and analyzes data collected through questionnaires using descriptive statistics. The research highlights the significance of information as an economic resource contributing to national development. It emphasizes the necessity of ICT tools like computers, the internet, printers, and broadcasting technologies in academic libraries for enhancing information retrieval systems and service delivery.

**Methodology**

This quantitative study utilized a survey research design to investigate the impact of Information and Communication Technology (ICT) on information retrieval systems in academic libraries. The study focused on library users, including staff, researchers, and students, totaling sixty (60) respondents who were purposively selected due to their regular use of the university library. The research instrument, in the form of a questionnaire, was administered over a two-week period to ensure comprehensive data collection. The data collected from the questionnaire were analyzed using frequency count and corresponding percentages.

**Recommendation**

The study concludes that ICT positively impacts information retrieval in academic libraries, facilitated by tools like computers and the Internet. Recommendations include financial support for ICT facilities, user training, performance evaluation, and extended library hours with staff incentives.

**Research Gap**

The research gap in this study is not explicitly stated, but it can be inferred that there is a need for further investigation into how ICT adoption and utilization can be optimized to enhance information retrieval systems in academic libraries. Additionally, exploring the specific challenges and barriers faced in integrating ICT into library services would contribute to addressing these issues effectively.

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Article Title: Intelligent Information Retrieval System.

Authors: Bola A. (2022).

**Summary of the work**

This paper explores Intelligent Information Retrieval (IIR) systems, which help users find information on the internet efficiently. It focuses on keyword search challenges in digital libraries and proposes a solution using metadata and concepts. The goal is to improve information retrieval in digital libraries by analyzing domain categories and concepts. The paper suggests that domain-specific ontologies can enhance query results and highlights the value of semantic retrieval technology in addressing the limitations of traditional methods, especially when dealing with concepts in ontologies.

**Methodology**

The methodology used in this study involves a mix of qualitative and quantitative research techniques. Data is collected from both primary and secondary sources, including surveys and interviews with users and experts in information retrieval. Existing literature and studies related to domain-specific ontologies and semantic retrieval technology are also reviewed. Data is analyzed using descriptive statistics, content analysis, and thematic coding to identify patterns and insights. This mixed-methods approach combines real-world user experiences with theoretical insights to inform the research findings and recommendations.

**Recommendation**

Based on the findings, it is recommended that exploring and implementing domain-specific ontologies and semantic retrieval technology using concepts in information retrieval systems. Be cautious with query expansion to prevent irrelevant information and use thesaurus-based methods for disambiguation. Prioritize domain concepts for query expansion to enhance search precision and relevance.

**Research Gap**

The research gap in this area involves the need for more practical studies to confirm the effectiveness of domain-specific ontologies in improving information retrieval systems. Researchers should conduct empirical investigations to validate the benefits of using such ontologies and develop strategies to mitigate issues like query drift and disambiguation during query expansion. Exploring the potential of semantic retrieval technology based on concepts is crucial for addressing limitations in traditional retrieval methods.

Article Title: Automated Storage and Retrieval Systems: An Attractive Solution for an Urban Warehouse’s Sustainable Development.

Authors: Edouard, A., Sallez, Y., Fortineau, V., Lamouri, S., & Berger, A. (2022).

**Summary of the work**

In recent years, growing concerns about sustainable development have significantly impacted supply chain operations. Regulatory, social, and societal pressures have prompted supply chain actors to explore innovative solutions. Among these, the urban warehouse model is emerging as a viable option within urban logistics. This article outlines the characteristics, constraints, and challenges associated with this model. Furthermore, it delves into automated storage and retrieval systems (AS/RS), a key component of Industry 4.0, through a case study. The study aims to assess the potential of AS/RS in addressing the unique challenges posed by urban warehouses, particularly their capacity to optimize space utilization and increase stock density.

**Methodology**

The methodology employed for this study draws inspiration from Christine Bauer and Anind K. Dey's approach, which is particularly well-suited for designing intelligent systems. It involves a structured set of steps that serve as a comprehensive checklist to guide the entire research process. These steps provide a systematic framework for developing intelligent systems, ensuring that critical aspects are thoroughly addressed and enhancing the overall rigor and effectiveness of the study.

**Recommendation**

Companies and organizations in urban logistics, especially those considering urban warehouses, should explore integrating Industry 4.0 technologies like AS/RS to enhance efficiency and sustainability. Assessing specific needs and characteristics is crucial before implementation. Future research should investigate multi-client models and the synergies of various Industry 4.0 technologies for holistic urban warehouse optimization.

**Research Gap**

A research gap exists in systematically combining Industry 4.0 technologies for comprehensive urban warehouse process optimization. Future research should develop a structured methodology and solutions to leverage Industry 4.0's full potential in urban logistics, enhancing efficiency and sustainability.

**3.1 METHODOLOGY**

The research approach is a rigorous investigation like this to uncover new facts or information about the existing system. This study’s research employed the primary and secondary source of data collection.

**Primary Source of Information**

This comprises information that is collected directly or indirectly from target users without any alterations or ideas from other authors. The information from this primary source is deemed more accurate and reliable. Hence, the aim is to assimilate the information gathered from this source into the project in order to meet requirements. The chosen fact-finding techniques for the primary source data gathering are: interview and observation

**Secondary Source of Information**

This basically comprises the totality of information someone is able to obtain from existing sources such as books, the internet, case study, articles, newsletter, and other valuable publications. The resources gathered from the internet specifically have been very relevant, various search engines especially Google made information finding very easy.

**3.4 CHOICE OF PROGRAMMING LANGUAGE**

This research work will be a mobile-based application and will be implemented on a relational database system (SQLite). HTML, CSS, and JavaScript will be employed in the front end while Django (python) will be employed for the backend programming. The above are the modern languages used in implementing this system.

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