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Series 2025

Chief Editors:
Nur Alyani binti Khairol Anuar
Muhammad Irfan bin Mokhtar

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Preface

Pioneering Educational Perspectives: Series 2025 is a collection of thought-provoking insights and research contributions exploring contemporary educational trends and practices. This eBook presents a diverse range of perspectives on innovative teaching methodologies, digital learning strategies, and transformative approaches in education. Designed to serve as a resource for educators, researchers, and practitioners, it aims to inspire meaningful discussions and advancements in the field. Through carefully curated chapters, this publication offers fresh ideas and practical solutions to enhance learning experiences in an ever-evolving educational landscape.

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DbAPedia – LEARNING PLATFORM FOR DATABASE ADMINISTRATION COURSE

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ABSTRACT

DbAPedia is an innovative web-based learning platform designed for Database Administration education, successfully utilized for one semester. The platform offers structured notes, an ORA error list, and interactive activities, receiving positive feedback from students and enhancing their understanding and skills. The clear notes and error analysis improved troubleshooting abilities, while interactive activities reinforced theoretical concepts. Seamless integration with the institution's Learning Management System facilitated collaboration. This platform demonstrates the effective use of technology in enriching database education, preparing students for practical challenges and fostering a deeper comprehension of database administration principles.

This study introduces DbAPedia, a web-based learning tool designed to support database administration education. The platform integrates comprehensive resources such as notes, activities, an ORA error index list, the CIDOS LMS platform, and a feedback mechanism. Implemented as a learning aid in a database administration class at Politeknik Mersing, DbAPedia demonstrated a significant positive impact on student learning. Results indicate that 100% of students found the platform easy to use, met their learning needs, and trusted the information provided. Moreover, 94.4% of students reported that DbAPedia saved time and was visually appealing. These findings suggest that DbAPedia is an effective tool for enhancing database administration education and has the potential for wider implementation.

KEYWORDS: Database administration, ORA error, Database management, Database, webpage learning.

PROBLEM AND OBJECTIVE

While traditional database administration education often relies on textbooks and lectures, there is a growing need for more interactive and engaging learning experiences. Existing online resources may lack structure, comprehensiveness, or integration with institutional learning management systems (LMS). This can lead to difficulties in understanding complex database concepts, troubleshooting errors, and applying theoretical knowledge to practical scenarios. Students are engaged by diverse yet easily understood database business domains, simple database structures, and realistic amounts of data in exercise databases for database education. (Taipalus, 2023).

Before this all the notes were separated and notes not focusing topics covers in syllabus of Politeknik Malaysia. Moreover, there are limited exercise questions regarding the topics, and students must search separately that suit the need and criteria match with the syllabus. Finally, the crucial situations are, the guidance of solution if the error occur when students do the coding

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in Oracle SQL management, there is limited platform for specific error list provided, and takes time to search for the solution. A novel structured database activity helps teach undergraduate communication students about the creation, value, and logic of structured data through virtual instructional videos and interactive visualizations. (Iliadis, 2021)
Objectives for developing DBAPedia, a learning platform for database administration:

1. To provide structured and syllabus-aligned content. It ensures that all educational resources, such as notes, tutorials, and exercises, are well-organized and aligned with the Politeknik Malaysia syllabus.
2. To enhance learning through interactive exercises and practical scenarios. DbAPedia will have a comprehensive set of exercises and practice questions that cover key topics.
3. To offer integrated error solutions and guidance for SQL coding. DbAPedia create a dedicated feature that provides students with specific solutions for errors encountered during coding in Oracle SQL.

DESIGN DESCRIPTION

DbAPedia is designed to provide a comprehensive and engaging learning experience for database administration students. Integrating current Learning Management Systems with Facebook is suggested to support Online Collaborative Learning (OCL) in Malaysian Polytechnics. (Razali, 2014) The DbAPedia incorporates structured content aligned with the Politeknik Malaysia syllabus, interactive exercises and practical scenarios, integrated error solutions and guidance, and seamless integration with the CIDOS LMS.
The platform features a user-friendly interface with clear navigation, visual aids, and mobile compatibility. By combining these elements, DbAPedia aims to create a more effective and efficient learning environment that supports students in developing their database administration skills.

VISUALS

Content Organization with five chapters aligned with the syllabus. The platform has 5 chapters that follow the official syllabus of Politeknik Malaysia. Each chapter will consist of Introduction and key concepts with clear explanations of the main topics within each chapter. The subtopics, detailed breakdown of each section of the syllabus for easier navigation.
Interactive learning exercises, where each chapter include a variety of interactive learning tools designed to engage students and help reinforce key concepts of Crossword Puzzles that focus on terms and definitions related to database concepts. Fill-in-the-Blanks exercises requiring students to complete sentences with correct terms, improving understanding of key concepts. Drag-and-Drop Activities, allows students to match terms with definitions, steps of processes (e.g., normalization), or components in database design. Students express a positive feedback towards the course content, acquired knowledge, and interactive teaching methods using Access databases and e-learning tools. (Razali, 2014)
Error list and solution section includes common SQL Errors, a comprehensive, regularly updated list of Oracle SQL errors that students commonly encounter. Error descriptions with clear explanations of why the error occurs. Also show step-by-step solutions, and detailed instructions on how to resolve each error, empowering students to troubleshoot and learn independently. Search Functionality, provided with a search bar for students to quickly find the error they're dealing with, making the process of error resolution faster and more efficient. Interactive electronic textbooks with embedded databases, live expressions, figures, and explanations can effectively teach database concepts in the classroom. (Jiang, 2015)

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Integration with CIDOS LMS used by Politeknik Malaysia, enabling seamless navigation and enhanced learning management. Assignment submission and tracking exercise scores, progress, and completed activities can be tracked and exported to the CIDOS LMS for grading and monitoring by lecturers.

NOVELTY AND UNIQUENESS

DbAPedia stands out from traditional learning platforms due to its innovative approach to database administration education. The platform's unique features include:

- Complete Syllabus Alignment: DbAPedia's structure is meticulously aligned with the Politeknik Malaysia syllabus, ensuring students learn exactly what they need.
- Interactive Learning: The platform incorporates interactive exercises to make learning engaging and effective.
- Comprehensive Error Solutions: DbAPedia offers a detailed database of Oracle SQL errors with step-by-step solutions, providing students with specific guidance.
- Seamless LMS Integration: The platform's integration with CIDOS LMS streamlines access and tracking for students.
- Real-Time Progress Tracking: DbAPedia offers a detailed dashboard for students to monitor their learning progress.

These unique features make DbAPedia a valuable tool for database administration students, providing a more comprehensive, engaging, and supportive learning experience.

BENEFITS TO MANKIND

DBAPedia, has a valuable resource for high education students learning database administration. Moreover, it can relate to various Sustainable Development Goals (SDGs)
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, fulfilled with the element 4th in SDG of quality education.
DbAPedia also promotes sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all which fulfilled the criteria of element 8th in SDG of decent work and economic growth.
Moreover, DbAPedia also build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation, match the element 9th in SDG of Industry Innovation and Infrastructure.
Finally, for the element 17th of SDG, suited the DbAPedia with strengthen the means of implementation and revitalize the global partnership for sustainable development.

COMMERCIAL POTENTIAL

Target Market focuses on Database Administration Students. DbAPedia can be directly marketed to educational institutions offering database administration courses. Moreover, working professionals can also be targeted to database administrators seeking to enhance their skills or stay updated with industry trends. Finally, the corporate training, companies can use DbAPedia for internal training programs to upskill their database administration teams.

CONCLUSION

DbAPedia has demonstrated its potential as a valuable tool for enhancing database administration education. By combining structured notes, interactive activities, an ORA error index list, and seamless integration with LMS, the platform provides a comprehensive and engaging learning experience. Using a web-based platform for teaching leads to student-centered, learning-oriented education, with teachers shifting from being the sole source of knowledge to guiding, helping, serving, and supporting students' learning. (Yuan, 2021)

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The positive feedback from students and the platform's effectiveness in improving understanding and troubleshooting skills highlight its potential to meet the needs of both learners and educators. Additionally, DbAPedia's commercialization potential is promising, given its unique value proposition, target market, and revenue opportunities.

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