

# Database Management Systems: Project 1

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## History and Future of Database Systems

### Introduction

The field of database systems has seen incredible advancements, evolving from rudimentary file-based systems to sophisticated, distributed architectures that power modern applications. This project will explore the historical progression of database systems, analyze key breakthroughs and contributions, and provide insights into their future trajectory. Students will work in groups to compile a well-researched and structured write-up, fostering collaboration and critical thinking.

### Objectives

- To understand the historical development of database systems.
- To examine key breakthroughs, technologies, and contributors that shaped the field.
- To explore the impact of database systems on industries and society.
- To encourage students to envision future trends and innovations in database systems.
- To develop research, writing, and teamwork skills.

### Learning Outcomes

By completing this project, students will be able to:

- Explain the history of database systems, identifying major milestones and advancements.
- Analyze the impact of technological innovations in database systems.
- Highlight the contributions of key figures and organizations in the database field.
- Synthesize historical research with future predictions to create a cohesive narrative.
- Collaborate effectively in a group and document individual contributions.
- Produce a professional, well-structured, and error-free written report.

## Write-Up Structure

- **Title Page**

- Course Number and Title
- Project Title
- Names of Group Members
- Date of Submission

- **Abstract**

A concise summary of the write-up, including the purpose, key findings, and future perspectives (100–150 words).

- **Introduction**

- Context and importance of database systems.
- Objectives of the project.
- Overview of the document's structure.

- **Historical Overview of Database Systems**

- Evolution from early file-based systems to relational databases.
- Key milestones in database technology.

- **Key Breakthroughs and Technologies**

- Innovations such as the relational model, SQL, NoSQL, and distributed databases.
- Advances in storage, scalability, and query optimization.

- **Contributions of Pioneers**

- Overview of influential figures (e.g., Edgar F. Codd, Michael Stonebraker).
- Role of organizations and open-source communities.

- **Applications and Societal Impact**

- Real-world examples of database systems in industries like healthcare, finance, and retail.
- Challenges faced by legacy systems and modern solutions.

- **Future of Database Systems**

- Group perspective on emerging trends (e.g., AI, quantum databases, blockchain).
- Predictions about the role of databases in future technology.

- **Individual Contributions**

- Documentation of each member's role in the project.
- Reflective paragraph from each member on their experience and learning.

- **Conclusion**

- Recap of historical evolution, breakthroughs, and future insights.
- Final thoughts on the significance of database systems.

- **References**

Properly formatted citations.

## Grading Criteria

Criteria	Weightage
Content and Depth of Research - Covers historical overview, key breakthroughs, and applications. - Demonstrates a strong understanding of database systems' evolution.	30%
Clarity and Organization - Well-structured write-up with logical flow. - Proper formatting and cohesive narrative.	20%
Future Insights and Predictions - Thoughtful and informed views on emerging trends. - Practical and innovative ideas for the future.	15%
Individual Contributions - Clear documentation of group members' roles. - Reflective paragraphs from each member.	15%
Writing Quality - Free from grammatical errors and typos. - Concise and professional language.	10%
Use of References - Accurate and consistent citation format. - Quality and diversity of sources.	10%
<b>Total</b>	<b>100%</b>

## Submission Details

- **File Format:** The final write-up must be submitted in .pdf format.
- **Font Style:** Times New Roman.
- **Font Sizes:**
  - Section Titles: 14pt, **Bold**.
  - Subsection Titles: 12pt, **Bold**.
  - Body Text: 12pt.
- **Text Alignment:** The entire document must be justified.
- **Line Spacing:** Set line spacing to 1.15 throughout the document.
- **Margins:** Use standard margins (1-inch on all sides).
- **Page Numbers:** Include page numbers in the footer of each page.
- **Length:** The document should be between 2500 and 3000 words (excluding references and title page).

## Academic Integrity Policy

- All submitted work must be the result of the group's original research, analysis, and writing.
- The use of AI tools (e.g., ChatGPT, Bard, etc.) to generate or assist in writing the report is strictly prohibited. Any detected use of AI tools will result in an automatic **F grade** for the project.
- Proper citations and references must be provided for any external sources consulted. Plagiarism will not be tolerated and will be subject to academic penalties.