



PB INSTITUTE OF RESEARCH AND TECHNOLOGY

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Nairobi - Kenya

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Data Management Essentials: Databases, Queries and Security

Duration: 10 days

On-Site

01 Who Should Attend

- Business and operations professionals
- Project and programme support staff
- Reporting and data analysts
- Human resources and finance professionals
- Government and public-sector officers
- NGO and development-sector professionals
- Professionals who work with organizational databases
- Beginners seeking foundational database management skills

02 About the Course

Database Management Basics: Data, Queries and Security is a practical introductory training course designed to equip professionals with essential skills for understanding, organizing, managing, querying, and protecting organizational data. The course provides a strong foundation in database concepts and introduces participants to database structures, tables, relationships, SQL queries, data quality, access controls, and basic database security. Participants will gain hands-on knowledge of how databases support administrative, operational, financial, customer, and management functions while learning how to maintain accurate, accessible, and secure data.



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03 Workshop Objectives

- Understand the fundamentals of database management and relational databases.
- Design and create basic databases using database management systems (DBMS).
- Understand database terminology (tables, records, fields, keys).
- Perform data entry, editing, and deletion operations.
- Write basic SQL queries to retrieve and manipulate data.
- Understand data integrity and normalization principles.
- Create and manage database forms and reports.
- Understand data backup and recovery procedures.
- Implement basic database security measures.
- Utilize database management software effectively.
- Enhance their ability to organize and manage data efficiently.
- Improve their data accuracy and consistency.
- Contribute to improved data management practices within their organization.
- Stay up-to-date with basic database management concepts and best practices.
- Become a more confident and effective data manager.
- Understand ethical considerations in data management.
- Learn how to use database management tools effectively for specific data needs.

04 Module Topics

Module 1: Introduction to Database Management

- Understanding the importance of database management.
- Key concepts: databases, DBMS, relational databases, data models.
- Overview of popular database management systems (e.g., Microsoft Access, MySQL, PostgreSQL).
- The benefits of using databases for data organization.
- Database terminology: tables, records, fields, keys, relationships.



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Module 2: Database Design and Planning

- Understanding the database design process.
- Identifying data requirements and defining entities.
- Determining data types and field properties.
- Designing table relationships (one-to-one, one-to-many, many-to-many).
- Creating an Entity-Relationship Diagram (ERD).

Module 3: Creating and Managing Tables

- Creating tables in a DBMS.
- Defining primary keys and foreign keys.
- Setting data validation rules and constraints.
- Modifying table structures (adding, deleting, modifying fields).
- Understanding data types and their appropriate use.

Module 4: Data Entry and Manipulation

- Performing data entry operations.
- Editing and deleting records.
- Importing and exporting data from various sources.
- Using data filtering and sorting techniques.
- Ensuring data accuracy and consistency.

Module 5: Introduction to SQL (Structured Query Language)

- Understanding the basics of SQL queries.
- Writing SELECT statements to retrieve data.
- Using WHERE clauses to filter data.
- Sorting and grouping data with ORDER BY and GROUP BY clauses.
- Joining tables to retrieve related data.

Module 6: Data Integrity and Normalization



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- Understanding data integrity concepts.
- Implementing data validation rules and constraints.
- Understanding the principles of database normalization (1NF, 2NF, 3NF).
- Reducing data redundancy and improving data consistency.
- Maintaining data accuracy and reliability.

Module 7: Creating Forms and Reports

- Designing and creating data entry forms.
- Using forms to simplify data input and editing.
- Creating reports to summarize and present data.
- Formatting reports for clarity and readability.
- Using report design tools in the DBMS.

Module 8: Database Security and Backup

- Implementing basic database security measures.
- Managing user access and permissions.
- Understanding data backup and recovery procedures.
- Performing regular database backups.
- Restoring databases from backups.

Module 9: Database Management Tools and Best Practices

- Exploring advanced features in the DBMS.
- Using database management tools effectively.
- Implementing best practices for database maintenance.
- Troubleshooting common database issues.
- Continuous learning and development in database management.