

Master SQL

—— with these ——

Hands-On Projects



From Beginner → Intermediate



Disclaimer

Everyone learns uniquely.

What matters is your focus on specific aspects of
Sql, ensuring a comprehensive understanding.

This Doc will help you with the same.

1 Library Management System

The project aims to develop an automated library management system. This digital approach streamlines the library's operations, making it more efficient and user-friendly compared to traditional manual methods.

Basic Functionalities

- Basic CRUD (Create, Read, Update, Delete) operations.
- Insert new book records into the database.
- Retrieve books based on specific criteria like genre or author.
- Modify the number of books in stock.
- Simple queries to find books by author or genre.



Source Code

<https://github.com/topics/bookstore-management-system>

2 Online Retail Application Database

In the booming era of online shopping, giants like Flipkart, Amazon, etc. highlight the importance of robust SQL databases in managing their vast online retail operations. This project aims to build an internet-based application that permits customers to sign up and buy items online.

Basic Functionalities

- Storing details of internal staff and external partners, including delivery services.
- Systematic collection of customer information during registration and purchasing for marketing use.
- Handling order details, payments, refunds, returns, and replacements.
- Maintaining delivery data for efficient product tracking.
- Capturing reviews and feedback for product improvement.



Source Code

<https://github.com/aaronzguan/Online-Shopping-Cart-Database-Project>



3 Railway System Database Management System

This project is designed to simplify trip planning. By making these processes more user-friendly and efficient.

Basic Functionalities

- Book their tickets or cancel booked tickets.
- Check their fares before booking tickets and checking their booked tickets.
- Check the schedule for available trains, etc.



Source Code

<https://github.com/aaryanrr/Railway-Management>

4 Hospital Management System

This project involves the development of web-based software to manage all operational activities of a hospital.



Basic Functionalities

- Create and update patient medical records.
- Schedule and manage appointments with doctors.
- Generate and manage patient billing information.



Source Code

<https://github.com/hrishikeshathalye/Hospital-Management-System-DBMS>

5 Inventory Management System

This project focuses on managing inventory effectively to avoid understocking and overstocking, ensuring optimal inventory levels through efficient Inventory Control Management.

Basic Functionalities

- Monitor and report stock levels of inventory items.
- Trigger alerts when stock levels fall below a certain threshold.
- Analyze inventory turnover rates and identify trends.



Source Code

<https://github.com/viditgarg1999/Inventory-Management-System>

6 Billing System For A Departmental Store

A billing system is essential for every department store to track stocks, sales, and generate reports, offering a comprehensive view of store operations.

Basic Functionalities

- Capable of managing the items present in the department.
- Add an item, edit an item, view details of an item, or list down items based on some filters.
- The sales table should store the information about the items sold during that sale, price, etc.
- Should be able to store all the information like the invoice number, invoice date, total sale amount, etc.



Source Code

<https://github.com/amanovishnu/Customer-Billing-System>

7 Restaurant Management Database Project

This project aims to efficiently track customer data, food deliveries, and order management, serving as a digital ledger for food items, customer purchases, and restaurant transactions.

Basic Functionalities

- Create and update their menu items, prices and add description and images for each item.
- Allows customer to make reservations online, or via phone or in-person.
- Helps show customer a clear overview of available tables, and allows manager to assign tables to customers, send confirmation email, etc.
- Allows customers to pay their bills via cash, credit card or other payments method.



Source Code

<https://github.com/Wareezy/Restaurant-Management-System-Group21-ADP3>



8 Wholesale Management System Database Project

This project focuses on maintaining stock details and buyer information for managers to facilitate purchases, and also includes customer data, tracks all payment records (paid and pending), and calculates monthly profits.

Basic Functionalities

- Maintain the details of stock like their ID, name, quantity.
- Maintain the details of buyers from which manager had to buy the stock like buyer id, name, adress, etc.
- Details of customers, i.e., name, address, id.
- List of payment paid or pending.
- Profit calculation for a month.



Source Code

<https://github.com/avijit2verma/wms>

9 Payroll Management System

This project aims to design a system to manage and calculate company employee salaries, monthly pay, taxes, and social security contributions.

Basic Functionalities

- Store and manage basic employee details like name, department, and position.
- Salaries are added in this project with the help of workers' data, attendance records, and leave taken.
- Calculate and distribute employee salaries, taking into account factors like hours worked, tax deductions, and bonuses.
- Add new payroll, ref from, view edit, delete, show entries, and search.
- Record and monitor employee attendance, leaves, and absences for accurate payroll calculation.



Source Code

<https://github.com/ojasphansekar/Employee-Payroll-Management-System>



10 Carbon Emission Calculator

This project revolves around developing a web application dedicated to supporting environmental conservation efforts.

Basic Functionalities

- Ability to assess and calculate the carbon footprint of individual buildings.
- Combining information on floor space and annual working days with user-selected or custom attributes on building types, water fixture types, climate zones, etc.
- Link emissions outputs to energy use, water usage, transportation, and solid waste disposal




Source Code

<https://github.com/MarosMacko/CarbonFootprintCalculator>



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