SQL PROJECTS HANDBOOK

Beginner Level

Project 1

Student Database System

The project involves using SQL to build a system for managing student records. This system will store general information such as names, addresses, performance, and attendance, as well as department specific data.

Basic Functionalities

- Tables for students, courses, and grades.
- Add new student records to the system.
- Input and update student grades for courses.
- Keep track of student attendance.
- Functions to calculate average grades and attendance.

Source Code

https://github.com/shardul08/Student-DataBase-Management-System

Project 2

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

Project 3

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

Intermediate Level

Project 4

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

Project 5

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

Project 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

Advanced Level

Project 7

E-commerce Database System

This e-commerce project is increasingly relevant due to the rapid growth of online shopping. The focus should be on creating a web application that allows customers to register and purchase items online.

Basic Functionalities

- Manage product listings, including adding, updating, and deleting products.
- Handle customer orders, including order creation, modification, and cancellation.
- Manage customer accounts, including registration, profile updates, and order history.
- Integration with payment and shipping services.

Source Code

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

Project 8

Art Gallery Management Database Project

This e-commerce project is increasingly relevant due to the rapid growth of online shopping. It focuses on creating a web application that allows customers to register and purchase items online.

📝 Basic Functionalities

- Save information such as location, venue, date, art displayed, and user registrations.
- Store each artist's details, achievements, and unique artist code.
- Save art with unique tags, artist code, and additional details like art type, product, and medium.
- Log all gallery purchases and payments in a dedicated table.

Source Code

https://github.com/iaashu98/art-gallery-database-management

Project 9

Banking System Database

Practicing with an SQL project for a bank account management system is crucial. The key is to design a database that allows quick and efficient querying. Let's explore how to design this database and its functionalities.

Basic Functionalities

- Process deposits, withdrawals, and transfers between accounts.
- Manage loan applications, approvals, and repayments.
- Implement triggers to detect and alert on suspicious banking activities.
- High-level security and data encryption.

Source Code

https://github.com/sachinl0har/Bank-Management-System-Cpp

Project 10

Social Media Analytics Database

The Social Media Analysis project focuses on understanding user behavior, sentiments, and trends through social media data analysis. It uses SQL queries to derive key insights for enhancing brand reputation and informing marketing strategies.

Basic Functionalities

- Complex data models for user interactions and content popularity.
- Integration with social media APIs for real-time data fetching.
- Analyze user interactions and engagement on posts.
- Identify trending topics and hashtags.
- Track the reach and impact of various social media posts and campaigns.

Source Code

https://github.com/ssahibsingh/Social-Media-Database-Project