Sample Database Projects

1. Inventory control management Database Project

Design goals: maintain a proper variety of required items, increase inventory turnover, reduce and maintain optimize inventory and safety stock levels, obtain low raw material prizes, reduce storage cost, reduce insurance cost, reduce taxes

2. Student Record keeping system Database Project

Design goals: a student file that contains the information about student, a stream file, a marks file, a fee file, concession/scholarship etc you can check simple version of this project

3. Online Retail Application Database Project

A customer can register to purchase an item. The customer will provide bank account number and bank name (can have multiple account number). After registration each customer will have a unique customerid, userid and password. Customer can purchase one or more item in different quantities. The items can of different classes based upon their prices. Based on the quantity, price of the item and discount (if any) on the purchased items, the bill will be generated. A bank account is required to settle the bill. The items can be ordered to one or more suppliers

4. College Database Project

A college contains many departments. Each department can offer any number of courses. Many instructors can work in a department but an instructor can work only in one department. For each department there is a head and an instructor can be head of only one department. Each instructor can take any number of courses and a course can be taken by only one instructor. A student can enroll for any number of courses and each course can have any number of students.

5. Railway System Database Project

A railway system, which needs to model the following:

1. Stations
2. Tracks, connecting stations. You can assume for simplicity that only one track exists between any two stations. All the tracks put together form a graph.
3. Trains, with an ID and a name
4. Train schedules recording what time a train passes through each station on its route.

You can assume for simplicity that each train reaches its destination on the same day, and that every train runs every day. Also for simplicity, assume that for each train, for each station on its route, you store

- Time in,
- Time out (same as time in if it does not stop)
- A sequence number so the stations in the route of a train can be ordered by sequence number.

1. Passenger booking consisting of train, date, from-station, to-station, coach, seat and passenger name.

6. Hospital management System Database Project

A patient will have unique Patient ID. Full description about the patient about personal detail and phone number, and then Disease and what treatment is going on. Doctor will handle patients, One doctor can Treat more than 1 patient. Also each doctor will have unique ID. Doctor and Patients will be related. Patients can be admitted in hospital. So different room numbers will be there, also rooms for Operation Theaters and ICU . There are some nurses and ward boys for the maintenance of hospital and for patient take care. Based upon the number of days and treatment bill will be generated.

7. Library management System Database Project

A student and faculty can issue books. Different limits for number of books a student and teacher can issue. Also the number of days will be different in case of students and teachers for issue any book. Each book will have different ID. Also each book of same name and same author (but number of copies) will have different ID. Entry of all the book will be done, who issue that book and when and also duration. Detail of Fine(when book not returned at time) is also stored.

8. Payroll management System Database Project

There will entry (Unique ID) of all the employee of any Organization. According to the date of joining and date up to which salary is created, Number of days will be entered. Basic pay will be defined according to the post of employee and department. Then component like DA, HRA, medical allowance, Arrears will be added, and Charges of Hostel/ Bus, Security, welfare fund and other will be deducted. Number of leaves taken by the employee.

9. Health care organization Database Project

This organization provides following functionalities

- Emergency Care 24x7
- Support Groups
- Support and Help Through calls

Any new Patient is first registered in their data base prior to meet the doctor. The Doctor can update the data related to patient upon diagnosis (Including the disease diagnosed and prescription). This organization also provides rooms facility to admit patient who are critical. Apart from doctors this organization has nurses and ward boy. Each nurse and ward boy is assigned to a doctor. Also they can be assigned to patients (to take care of them). The bill is paid by patient with cash and E-banking. Record of each payment made is also maintained by organization. The record of each call received to provide help and support to its existing person is also maintained.

10. Restaurant Management Database Project

The restaurant maintains the catalog for the list of food and beverage items that it provides. Apart from providing food facility at their own premises the restaurant takes orders online through their site. Orders on phone are also entertained.
To deliver the orders we have delivery boys. Each delivery boy is assigned to specific area code. The delivery boy cannot deliver outside the area which is not assigned to delivery boy (for every delivery boy there can be single area assigned to that delivery boy).
Customer record is maintained so that premium customer can be awarded discounts.

11. Design a scenario and an ER diagram for an IT training group database Project

It will meet the information needs for its training program. Clearly indicate the entities, relationships and the key constraints. The description of the environment is as follows:

The company has 10 instructors and can handle up to 100 trainees for each training session. The company offers 4 Advanced technology courses, each of which is taught by a team of 4 or more instructors Each instructor is assigned to a maximum of two teaching teams or may be assigned to do research Each trainee undertakes one Advanced technology course per training session.

12. Blood Donation System Database Project

 A system in which data of Patient, data of donor, data of blood bank would be saved and will be interrelation with each other

DATA OF PATIENT – Patient Name, Patient Id, Patient Blood Group, Patent Disease
DATA OF DONAR – Donar Name, Donar Id, Donar Bood Group, Donar Medical report, Donar Address , Donar Contact number
DATA OF BLOOD BANK – Blood Bank Name, Blood Bank Address, Blood bank Donars name, Blood Bank Contact Number, Blood Bank Address

Try to implement such scenario in a database, create a schema for it, a E-R diagram for it and try to normalize it.

13. Art Gallery Management Database Project

Design an E-R Diagram for an Art Gallery. Gallery keep information about "Artist" their Name, Birth place, Age & Style of Art about "Art Work", Artist, the year it was made, Unique title, Type of art & Prices must be stored. Piece of artwork is classified into various kind like Poetess, Work of 19th century still life etc. Gallery keeps information about Customers as their Unique name, Address, Total amount of Dollar, they spent on Gallery and liking of Customers.

14. Hotel Management System Database Project

A hotel is a hive of numerous operations such as front office, booking and reservation, banquet, finance, HR, inventory, material management, quality management, security, energy management, housekeeping, CRM and more. Hotel has a number of rooms and these rooms are of different categories. On the basis of room category, each room has different price. Hotel has a number of employees to manage the services provided to customers. Customer can book the room either online or by cash payment at the hotel. Customer record is stored in hotel database which contains customer identity, his address, check in time, check out time etc. hotel provide food and beverages to their customers and generate the bill for this at the time of their check out.

15. School Management System Database Project

Design a database to maintain information about school staff. Staff will be having their id, name and classes they are teaching

1. Student will be having name, roll no, section, class
2. Another table containing section, subject and teacher information
3. Next will be containing fee information for students
4. One contains salary information for teachers
5. Rooms are assigned to classes keeping in mind that there is no time clash of same room or lab, student cannot be entered in more than one section, no student should be there who has not paid fee up to a particular date.

16. Wholesale Management System Database Project

1. Maintain the details of stock like their id, name, quantity
2. Maintain the details of buyers from which manager has to buy stock like buyer id, name, address, stock id to be bought
3. details of customers i.e. name, address, id
4. defaulters list of customers who has not paid their pending amount
5. list of payment paid or pending
6. stock that is to be buy if quantity goes less than a particular amount.
7. Profit calculation for a month.
8. Quantity cannot be sold to a customer if required amount is not present in stock and date of delivery should be maintained up to which stock can be provided.

17. Salary Management System Database Project

1. employee list to be maintained having id, name, designation, experience
2. salary details having employee id, current salary
3. salary in hand details having employee id, ctc salary, pf deduction or any other deduction and net salary to be given and also maintain details of total savings of employee
4. salary increment to be given by next year if any depending upon constraints
5. deduction in monthly salary if any depending upon any discrepancy in work and amount to be deducted.

18. ATM Management System Database Project