

CS260 Project
Spring 2023
Deadline- 15th April, 2023
Group members:3 in each group
Each Group has to provide a demo on a given date(To be notified) after the deadline.

Goal: The goal of this project is to provide a realistic experience in the conceptual design, logical design, implementation, operation, and maintenance of a relational database and associated applications. First the application will be described, and then the categories of requirements, and then some suggestions on how deeply you need to go in each category. This project will be carried out individually over several weeks.

The project can go well beyond the minimal requirements. I encourage such extensions. They could turn into a senior design project or other independent work.

Application description: In IIT Patna, it has been decided to redesign a placement database for the students that will ensure the number of students placed in earlier years.

Additionally, it will show the current year eligible students to appear for the placements for a particular company. Following are some of the requirements.

Company: Each Company has to upload their required candidate details along with the minimum qualification, marks criteria, salary package, mode of interview[Online/Offline][Written/Interview] and since which year they are recruiting in IIT patna.

Students: Each Student has to upload their obtained marks from class 10 up to the last semester, age, specialization, area of interest, Batch Year. They also have to specify whether they have been placed in any company yet or not. For example, there might be a column specifying the package at which they have already been placed. It may contain 0 or NULL in case a student has not been placed yet.

Note: A student can only sit for placement in a company if the previous placement offer that he/she holds (salary package) is less than the package being offered by this company.

Alumnus: Each pass out student will put their information regarding their marks and related companies they have been placed. Also, they will include all the details such as {CTC, Area, Position, Location, Working tenure} in their profiles.

Data Generation: You can create some sample data of students, pass out students and companies.

Client Requests:

E-R Model

- Construct an E-R diagram representing the conceptual design of the database.
- Be sure to identify primary keys, relationship cardinalities, etc.

Relational Model

- After creating an initial relational design from your E-R design, refine it based on the principles of relational design.
- Create the relations using MySQL database.
- Create the constraints as appropriate. If as you refine your design, you discover flaws in the E-R design, go back and update it
- Your final E-R design must be consistent with your relational design.
- As all the potential users, may not be aware of MySQL queries, so you need to create the web interface for interacting with the database. For this purpose, you may take help of PHP.

Populate Relations

- Include enough data to make answers to your queries interesting and nontrivial for test purposes.
- You may find it helpful to write a program to generate test data.

Queries:

You should run a number of test queries to see that you have loaded your database in the way you intended. The queries listed below are few of those that your client may want. They may provide further hints about database design, so think about them at the outset of the project.

- Show the trends of placement in TCS how many students are getting placed since last three years in TCS.
- Which Companies provides expensive packages [Top 3]
- Find the total number of companies appeared in 2020.
- Find out the number of students who are eligible for Mercedes Benz Company. The company demands that the students must have atleast 80% marks throughout their academic career. The CTC being offered by the company is 40LPA. Students holding a previous offer of ≥ 40 LPA will not be allowed for this company.