



CMPE353/CMSE354

Database Management Systems

Labs 2 – 7

Design of a Simplified Volunteering Management System

Fall 2023 Semester

Task: You are asked to design a relational database according to the given schema diagram below using Oracle Live SQL software. The task has several subtasks and each of them is described below. Each task will be carried out during weekly lab hours (Labs 2-6). Therefore, each subtask must be completed weekly by the set lab dates (see dates below).

Problem: The objective is to design a database scheme for a **Volunteering Management System**.

The schema diagram below is designed to manage data for a volunteering organization. It includes information about **volunteers, projects, assignments, organizations, contact details and feedback**.

In a volunteering management system, volunteers register for projects and are then assigned specific tasks within those projects. Organizations coordinate multiple projects, each involving various assignments for volunteers. Contact information for both volunteers and organizations is stored to facilitate communication. Furthermore, multiple feedback entries are logged for each project to track participant experiences and project performance.

In this system,

1. There are 6 tables in total: "volunteers", "projects", "assignments", "organizations", "contact_details", and "feedback".
2. Information about projects, such as their unique ID, title, organization ID, start date, end date, and budget, is stored in the "projects" table.
3. Assignment records, including details such as volunteer ID, project ID, assignment ID, assignment date, title, and status, are stored in the "assignments" table.
4. Details about organizations, including their unique ID, organization_type and contact_id, are stored in the "organizations" table.
5. Contact details of volunteers and organizations, such as name, address, email, and phone number, are stored in the "contact_details" table.
6. Each assignment can have many volunteers. However, each volunteer can only do one assignment at a time.
7. Each organization can have multiple projects. However, a project should belong to only one organization.
8. Each organization and each volunteer should have exactly one corresponding record in the "contact_details" table to store their contact information.
9. Each project may have multiple assignments. However, each assignment is associated with only one project.
10. Each project may receive multiple feedback entries. However, each feedback entry is associated with only one project.

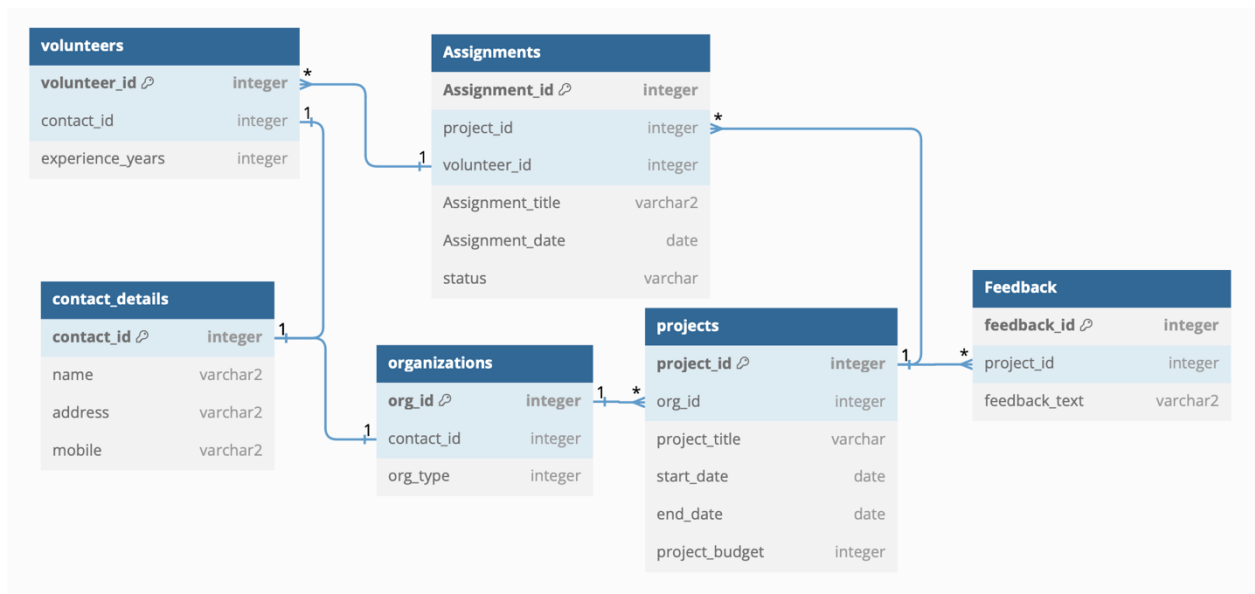


Figure 1 Volunteering management System Scheme

LAB 2:

- Build the tables in Oracle Live SQL with your account according to the schema.
- Build the relations among the tables.
- Delete, modify or update the tables.
- Delete, modify or update the constraints.
- Insert sample data into tables.

LAB 3:

- Insert sample data into the tables. (**AT LEAST 20 RECORDS FOR EACH TABLE**)
- Modify, update, or delete entries.

LAB 4 , 5:

1. How many volunteers are there in the system? How many of them with more than 5 years of experience?
2. List the start and end dates for the projects with a **budget** higher than **5000**.
3. Which organizations are **non-profitable**?
4. How many volunteers are in each project?
5. What feedback has been provided for the **Senior Care Support Project**?
6. What are the names of the volunteers who have the assignment **Task 1**?
7. Find the contact information of the organization associated with the **Senior Care Support Project**.
8. Retrieve the projects with start dates between **04-05-2022** and **26-05-2023**.
9. Find the projects that are currently **in progress**.
10. What are the assignments of the project with the feedback "**Great project! Enjoyed participating**" ?

11. Update the assignment assigned for volunteer “**Jane John**” from “**Organizing**” to “**event planning**”.
12. What is the organization type for the project associated with the feedback entry “**The event was well organized. Thank you!**”.
13. Cancel the Assignment “**poster design**” and retrieve the contact details of volunteers assigned to it.
14. “**Emma Kim**” is a new volunteer. First, register her in the system. Then, assign her to volunteer for the assignment “**event planning**”.
15. List the organizations that have the **highest** number of projects to the **lowest**.
16. Retrieve the names and contact information of volunteers who have participated in projects organized by **Community Service Organizations**.

LAB 6:

Write a trigger that removes corresponding entries from the feedback table when a project is cancelled. (Update and delete).

LAB 7:

Quiz and representation of all works done throughout the semester.

Timeline:

Lab	Date	Description
1	Week of March 18	Task description and Introduction to Oracle Live SQL
2	Week of April 15	Table design and construction
3	Week of April 22	Population of tables with data
4	Week of May 6	Answering SQL queries – Part 1
5	Week of May 13	Answering SQL queries – Part 2
6	Week of May 20	Triggers
7	Week of May 27	Lab Final Exam

Lab grading policy:

1. Lab Attendance: **5%** of the total grade will be based on attendance at lab sessions **[2-6]**. (**1point each**).

2. Assignment Submission:**10%**

Students must submit their completed work within two days following the lab session. The submission should include all assigned tasks. Throughout the labs (2-6), there will be a total of five assignments, **each worth 2 points**. These assignments will be created and submitted on Teams.

4. Lab Final Exam: **5%** of the total grade will be attributed to the lab's final exam.