

CSC 244 – Database System Design

California State University, Sacramento (CSUS)
Computer Science Department
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Project Proposal – Phase 1 Project Team - 7

Instructor – Ying Jin

<i>Team Members</i>	<i>Contribution (%)</i>
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Background:

Oracle APEX, or Application Express, is a powerful low-code development platform that enables organizations to rapidly create and deploy data-driven web applications. When combined with Oracle Autonomous Database, it represents a formidable combination in the world of modern application development. Oracle Autonomous Database, as the name suggests, offers a fully autonomous, self-driving database management system that takes care of routine tasks like maintenance, security, and scaling, freeing developers from such concerns. This collaboration between Oracle Apex and Autonomous DB enables developers to focus on developing feature-rich, responsive apps while ensuring their data is securely stored, maintained, and accessible with the greatest levels of reliability, and performance. To showcase the performance of Oracle Autonomous DB and Oracle Apex, we are performing multiple operations by selecting a real-world data model.

Objective:

This Project's objective is to create a schema suitable for Ecommerce website. To achieve this, we are performing database operations on a real-world data model by leveraging the features of Oracle Autonomous DB. To perform all CRUD processes, we additionally connect with the database via front-end application called Oracle Apex. In addition, several specific features that have been shown to work better with Oracle Apex will be introduced to the project.

Some of the features that we can add to the selected schema are:

- Identify the orders and number of orders placed by the same customer.
- List the products details of the order by the customer.
- List the overall sales of the customer orders.
- Update the customer details using the front-end oracle Apex application.
- Perform the data visualization like bar graphs, pie charts from the data available.

Proposed Tasks to achieve the objective/goals:

- Setup Oracle Autonomous DB in Oracle Cloud Infrastructure and get hands-on experience with all the operations that can be performed on the Oracle tables.
- Selecting a real-world data model and performing CRUD operations on the data available from the tables.
- Creating an Entity relationship diagram and bridge the gaps in case if there are any to better understand the data model.
- After having a clear understanding of the data model, we will figure out different ways to retrieve the data.
- We will implement the table creation DML commands and address the primary and foreign keys for each table.
- We will perform some SQL operations like creating, updating, and deleting the data from the tables.
- We will implement the Oracle PL/SQL programming if needed, to showcase the additional features of Oracle Apex.
- We will write queries and use them from Oracle Apex/Presentation layer for data retrieval and link this data.
- With the help of Oracle Apex, we will perform some data visualization like charts, graphs.