Data Model and Persistent Data Storage Report

The first step is to determine if the system requires data storage beyond a single execution. Based on the information, it can be inferred that the system does require persistent data storage.

This means that data needs to be saved and accessed across multiple system executions.

Next, we need to identify the persistent objects that need to be stored in the system. From the system architecture description, the following objects can be considered as potential candidates for persistent storage:

* Cars: Information about the cars in the dealership, including attributes such as make, model, year, and availability.
* Spaces: Details about the parking spaces in the dealership, including their status (occupied or vacant) and any associated attributes.
* Users: Data related to authenticated users, including their roles and credentials.
* Sales Data: Information about sales made, including details about the sold cars, customers, and transaction history.

These objects are subject to further analysis and refinement based on the specific requirements of the system.

Considering the requirements for persistent data storage and the nature of the data objects, a relational database is a suitable storage management strategy.

A relational database provides a structured and efficient way to store and retrieve data, ensuring data integrity and enabling complex queries and relationships between different entities.

To design the database schema, further analysis is required to determine the specific attributes and relationships for each persistent object.

Based on this analysis, a detailed database schema can be created using SQL (Structured Query Language).

The database schema will define the tables, columns, data types, constraints, and relationships between different tables. It will serve as the blueprint for creating and managing the database.

In conclusion, the system requires persistent data storage, and a relational database is a suitable storage management strategy. The identified persistent objects, such as cars, spaces, users, and sales data, can be stored and managed effectively using a well-designed database schema implemented with SQL.

A basic schema/database example is linked below:

1. Cars Table:
   * car\_id (Primary Key)
   * make
   * model
   * year
   * availability
   * (additional attributes specific to cars)
2. Spaces Table:
   * space\_id (Primary Key)
   * status
   * (additional attributes specific to spaces)
3. Users Table:
   * user\_id (Primary Key)
   * username
   * password
   * role
   * (additional attributes specific to users)
4. Sales Table:
   * sale\_id (Primary Key)
   * car\_id (Foreign Key referencing the Cars Table)
   * customer\_id (Foreign Key referencing the Users Table)
   * transaction\_date
   * (additional attributes specific to sales)