DATA REQUIREMENTS DOCUMENT FOR VEHICLE FLEET MANAGEMENT

Data Sources

- The client is currently using Excel data files to manage their vehicle information.These data files can be imported into the new database system as a source of data.

Data Entities

1. Vehicle
2. Drivers
3. Daily_Work
4. Vehicle_Mentence
5. Relation_Details
6. Fuel

Data Attributes

- Vehicle:Vehicle_No,License_No,Vehicle_LVD,Vehicle_LSD,Current_location,Insurence_No,Vehicle_ISD,Vehicle_IVD.
- Drivers:Driver_name,Driver_NIC ,Driver_IN, Driver_LSD,Driver_LVD, Driver_Contact_no,Age,DOB.
- Daily_work :Work_No, Capacity,Day_location,vehicle_type.
- Fuel : Cost ,Quantity , Fuel type.
- Vehicale_mantenance :Engine_no ,Maintenance_cost , Service_provider , SPContact_no,Maintenance_types,Maintaen_HD,SOD.
- Relation_detais : Name,DOB, Schoole_name.

Relationships

1. Vehicle And Daily_work: Many to Many.
2. Vehicle And Driver : One to One.
3. Driver And daily_work : Many to Many.
4. Vehicle And Fuel : one to One.
5. Vehicle And Vehicle_mantenance : one to Many.

Business Rules

1. Valid insurance and license must be maintained for vehicles.
2. Valid insurance and license must be maintained for Drivers.
3. Only authorized personnel can access or modify the database.

Data Volume

1. Number of records : The system will initially need to accommodate the registration of 22 vehicles.
2. Size of each record : Based on the search details, it is estimated that the size of each record would be around 2-3 kilobytes (KB).
3. Growth projections : System growth rate: 8-12% per year. Registered vehicles may increase by 2-6 annually based on historical trends.

Performance Requirements

1. Response time: The system should be designed to provide a fast and responsive user experience. All operations, such as searching for data, adding new data, and updating existing data, should complete within a reasonable amount of time, such as within 1-3 seconds.
2. Throughput: The database should be able to handle a certain number of transactions per second, depending on the expected usage patterns.
3. Data retrieval time: The database should be able to retrieve data quickly, even when the database contains a large amount of data.

Security Requirements

1. Access controls: The database should enforce access controls to ensure that only authorized users can access the data.where users are granted access only to the data they need to perform their job functions.
2. Authentication: password should be used to ensure that only legitimate users can access the data.

Reporting Requirements

1. Type of report : Vehicle registration reports, vehicle allocation reports, fuel consumption reports, and maintenance reports. The reports should provide meaningful insights into the data and help stakeholders make informed decisions.
2. Customization: users can analyze the data in their own way and create reports that are tailored to their specific needs.

Conclusion

- The data requirements document is a crucial document that outlines the necessary elements for the database to meet business needs. It includes information such as data sources, entities, relationships, business rules, performance and security requirements, and reporting needs. By documenting these requirements, stakeholders can ensure the database aligns with the evolving needs of the business.

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