**Diagram

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**Data Management & SQL- BAN-453-BOS1**

**Database Conceptual and Logical model**

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Last year I took a Web Technology class which gave me room to work on my future company’s website. The future company that I named as “Maksatly” will help clients find beautiful and suitable carpets, especially Turkmen Carpets, for their homes, rooms, and even offices. Turkmen Carpets are famous and observed by carpet experts as descendants of the purest and oldest carpet-weaving traditions in Central Asia. Following that, they are valued for their quality, rich colors, and good-lookinggeometricaly and floral designs. For example, some of the carpets have traditionally been brilliant red and decorated with indigo, black and white designs. As a start-up company, maintaining the data on an excel sheet can work and stored data can be kept clean as they are less data about employees, carpets, stores, orders, and so on. However, when Maksatly company will increase the number of carpets, expects customer raise, and hire more employees- maintaining data on an excel sheet will be difficult and could give serious consequence such as losing data. Accordingly, moving from an excel spreadsheet to a database will be an effective way to prevent these consequences as it improves data sharing and data security, increases in efficiency of data integration, and facilitates decision-making.

**Mission Statement:**

The purpose of the *Maksatly* database system is to keep the data that is used and generated to support the carpet retail business for our clients. Moreover, it will serve employees of the company to share information between departments and stores.

**Mission Statement:**

* To maintain data on departments, employees, stores, clients, carpets, and orders.
* To be able to quickly lookup information about selected departments, employees, departments, stores, clients, carpets, and orders.
* To allow employees at all departments and stores to access the same data at the same time.
* To have data updated in the database on daily bases
* To securely store the data and maintain custom permission user-to-user bases.
* To be able to perform queries and build reports help to answer the following business questions:
  + How many carpets are sold in each store?
  + What is the monthly carpet sale average?
  + What is the carpet preference of customers?
  + How many carpets are put in storage per week?
  + How many employees work in each department and how much do they get paid?
  + How much do drivers get paid from the commission fee?

**Business Rules:**

* Each individual carpet has its own unique identification (two same types of carpets will have separate unique identification).
* Each individual employees, individual departments, individual stores, individual delivery order, individual client, and individual dependent have their own unique identification, but each individual pick-up order does not have its own unique identification.
* Each employee can work in one and only one department while the department must have at least one employee.
* Each employee can work in one and only one store while the store must have at least one employee.
* Each employee can have many dependents, but each dependent must be related to at least one employee.
* Each store can sell many carpets and many carpets can be sold by only one store.
* Each store can be managed by only one department which is the sales department and the sales department can manage many stores.
* Each client can have many pick-up order and delivery orders while each pick-up and delivery order must be operated by at least one client
* Each pick-up order and delivery order can include many carpets. Each carpet must relate to either only one pick-up order or only one delivery order.
* Each carpet can be delivered by one employee, specifically, by one driver. However, drivers can deliver many carpets.

**Conceptual Model And Conceptual Data Dictionary:**

The initial conceptual model of Maksatly’s database will have approximately 8 entities which will be made off from 1 to 14 entity occurrences. I named entity attributes based on their description except ID for each which equals to each unique identification of each entity.

**Conceptual Model Diagram:**

**![Diagram, schematic

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**Logical Model:**

I converted conceptual model to logical model by following the 3NFs:

1st NF- I divided the names of employees and clients by their first name and last name, and addresses by the city state, zip code to not violate the 1NF which states that each row and column intersection or cells contains one and only one values.

2nd NF- I assigned PK s for all entities by obeying 2NF.

3rd BF- in the future, I need to work on my logical model more as I violate the 3rd NF, specifically there is violation of 3rd NF entities: Dependents, Employees, and Orders.

**Logical Data Dictionary:**

Please take a look Logical Data Dictionary excel file!

**Logical Model Diagram:**

![Diagram, schematic

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