**E-Commerce Database Requirements**

**Goals & Overview**

* To understand the requirements given by the stakeholders.
* To identify what entities are required and the attributes corresponding to them.
* To plan on which relational database management to develop e-Commerce project.
* To design the database with the core entities and establish the relations between them.
* To ensure that the data stored is accurate and consistent by implementing validation rules and quality checks.
* To implement the customer queries to work efficiently with the DDL and DML commands
* To document the result in the form reports by implementing tools for data mining and data visualization.
* Overall goal of database project is to create a system that meets the specific needs of the users and help them to manage and make use of their data more effectively.

The steps to design and implement a database are as follows

1. Requirement Specification & Analysis:

This phase involves gathering information from stakeholders and analyzing their needs. Which includes functional and nonfunctional requirements for the database system.

The business here is an ecommerce website and where product & customer information is stored and dummy orders are created to understand database concepts.

The database has to store Customer Information, Product details they have in the inventory, Order details, Payment & Shipping information.

After the analysis, entities that are identified based on the requirements are

CUSTOMER, OREDER, PRODUCT, SHIPMENT, ORDER ITEM.

1. Conceptual Design:

The next step is to create a conceptual schema for the database, using a high-level conceptual data model. The result of this phase is an Entity-Relationship (ER) diagram or UML class diagram. It is a high-level data model of the application. It describes how different entities (objects, items) are related to each other. It also describes what attributes (features) each entity has. It includes the definitions of all the concepts (entities, attributes) of the application

**ENTITIES:**

* CUSTOMER – customer\_id, first\_name, last\_name, email, address, city, state, zip
* ORDER -- order\_id, order\_date, order\_cost, order\_status
* ORDER\_ITEM -- quantity, unitprice
* PRODUCT -- product\_id, product\_name, product\_description, price, quantity
* SHIPMENT -- shipment\_id, ship\_date, courier\_name, ship\_address, ship\_status

In CUSTOMER entity, we declare “customer\_id” to be primary key that uniquely identifies every record of the table. The attribute “email” can’t be a primary key since it takes more space.

Another reason , as index been created on primary key by default and it takes more time for processing large text. Most RDBMSs build an index on the primary key to facilitate fast search and retrieval.

We followed the ideology of database and designed it in a space efficient way.