**Topic:**

Logistics is used to refer to the process of coordinating and moving resources – people, materials, inventory, and equipment – from one location to storage at the desired destination. Managing and delivering materials or inventory from one location to another is a very tedious task as it involves a lot of variables and coordination between them. So, if we come up with a database design that can effectively manage all the deliverables with the ability to store and retrieve data with minimum effort, we will be in a very good place in being successful as a logistics firm.

Here we as a logistics company has made some assumptions before we designed a database to improve the effectiveness of communication. Below are those lists of assumptions we made:

* Inventory\_ID is Bin- ID to store different products
* All products are sourced from a single inventory
* An order\_ID can have multiple products each of which can be shipped through multiple shipments

Below is the ERD diagram for building the database:

Diagram

Description automatically generated

**Customers\_1 table does not have an index.**

Graphical user interface, text, application

Description automatically generated

**This is the cost for the query when the table CUSTOMERS\_1 did not have a n index. The cost of this query is 3 and the memory consumed is 30889 bytes.**

Graphical user interface, text, application, email

Description automatically generated

**Let’s now insert an index to the CUSTOMERS\_1 table.**



Text

Description automatically generated

Graphical user interface, application, Word

Description automatically generated

**Now, lets us run a query and compare the cost of the query.**

Text

Description automatically generated with medium confidence

**Though, the cost is not effectively decreased in this case, the memory consumed while executing the query has been drastically reduced. This happened because we used indexing in the table which was not there previously.**