

Group -14

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Database Management Project

**Title:** Database for managing the warehouse part of the online retail business.

### Scope of Database:

Our job is to manage the data regarding the storage and shipment of the goods across many warehouses and distribution centers.

We'll be dealing with the inflow and outflow of goods from suppliers to warehouses to distribution centers.

But we won't be dealing with the data regarding how the goods are made available to the customer from the distribution center.

```
Supplier -> Warehouse -> distribution center -> customer
|----- our scope -----|
```

### Description/Requirements:

- It is a database for the transportation backbone of an online retail business.
- This backbone is made up of two types of establishments:
  1. Warehouse – to store goods temporarily.
  2. Distribution center – last point after which orders are delivered individually to the customer.
- The goal of this database is to provide a centralized datastore that will aid in planning the most efficient transporting schedule and plan that takes the item from one warehouse to another until it reaches the distribution center where it is required.
- It must store data in such a way that graph theory algorithms can be implemented efficiently.
- It must store details about the following:
  - Warehouse – id,name, address, transport routes from and to other establishments, capacity, types of goods it can store.
  - Distribution center- id,name, address, transport routes from other establishments.
  - City- id,name.
  - Supplier- id, name, number, email.
  - Employee – id,which employee works where ,name , address, salary .
  - Employee Type – id,type of employee.
  - Item – id,class of the item, its cost at a particular warehouse, volume, weight.
  - Item class – id,item type,type .
  - Transport – id,when a particular transport instance is scheduled, and which order will it be carrying. Eg : a truck at X time from Y to Z carrying G.
  - Transport vehicle – id,Vehicle type, number, capacity.
  - Order: id,item, quantity, due date.
  - Routes: id,between which two points in a network a direct transport is possible and at what cost.
- **Assumptions:**
  - That all transport requires an integral no of days( this helps in simplifying the scheduling algorithm).

- That all the transport systems are owned privately and we wont we outsourcing transport requirements.

**Queries that the database system should be able to answer:**

1. Get the scheduled route of a given order.
2. List of orders that will be/was carried by a given transport instance.
3. List of all employee working at a given establishment.
4. List available transports between two establishments.
5. List warehouses where a given item is available and in what quantity.
6. List the distribution centers which are in a given city.
7. Get details of a given order.
8. List all managers of a given region.
9. List all warehouse that can store a particular class of items.
10. List all suppliers of a given item.