CS 425
Utkarsh Tiwari
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Project Group/ Topic Form

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Topic selected: Shipping Company Database
Goal: Build a management system for a long-distance shipping company (i.e. DHL, Old Dominion, UPS, FedEx). Packages are stored in the database with relations to other tables of specific "containers" (i.e. a table of the fleet of vehicles, and a table of the various depots and warehouses), as well as the orders they are part of (which have relations to customer accounts that record pay ments due, etc.). For simplicity, this will handle shipping between depots (local shipping depots or subsidiaries would handle individual package delivery with their own systems, or just pass it off to USPS)

Data Requirements:
Packages: physical characteristics (weight only for simplicity), destination, status (stored at depot, in vehicle, delivered, missing), category, declared value, relation to fleet and depot IDs for package location
Fleet: vehicle type (semi truck, tandem semi truck, airplane, train), range, capacity, status (stopped, loading, traveling), destination depot
Depots: location (geographic), Amount of vehicles supported (truck, train, airplane), storage capacity
Orders: Cost, customer ID
Customer: Name, billing address, amount due
Transactions: Customer ID, order ID, transaction type (payment made, billing for services), amount due
Timetable: Fleet ID, source depot ID, destination depot ID, departure time, arrival time, Difference from schedule (+ = late, - = early)

Actions:
Should support following (actions marked as performed by customers, or internal only). Starred options are not essential for DB functionality, but can be accomplished as extra (bonus?)
- Receive package (internal only)
- Assign package to fleet/depot (internal only)
- Deliver package (internal only)
- Adjust timetable (internal only)
- Get fleet data (internal only)
- Get depots within vehicle range (internal only)

- Search for best path of travel (shortest time) (internal only)*
- Get package location (customers/internal)
- Report missing package (customers)*
- Pay bill (customers)

Registration: Customers should be able to manually register, or be automatically registered when a package is received. Internal users must be registered by administrators.