**Revised Entities:**

* **Delivery Entity:**

Is\_Delivered (boolean): Indicates whether the delivery has been completed successfully (true) or faced issues like an accident or vehicle malfunction (false).

* **Vehicle Entity:**

Operational\_Status (boolean): Indicates whether the vehicle is operational (true) or not (false) due to accidents or malfunctions.

* **Attribute Addition: Order\_city**

To enhance the system's capability for managing and validating deliveries, an Order\_city attribute has been introduced within the "Orders" entity. This attribute holds the city information associated with each order, providing valuable context for various operational considerations.

* **Constraint Facilitation:**

The addition of the Order\_city attribute plays a pivotal role in facilitating system constraints, specifically addressing the following:

* **Constraint: Delivery Cancellation Based on Customer Location**

One critical constraint stipulates that a delivery should not be canceled unless the customer is in the same region as the restaurant from which they placed their order. The introduction of Order\_city empowers the system to efficiently check and enforce this constraint. By associating each order with its respective city information, the system gains the capability to compare the customer's location with that of the restaurant, ensuring compliance with the specified constraint.

* **Entity Name Change: "Order" to "Orders"**

To maintain clarity and adhere to best practices, the entity name has been updated from "Order" to "Orders." This adjustment aligns with naming conventions, avoiding potential conflicts with reserved keywords and ensuring consistency within the overall database schema.

* **Payment\_Online Entity:**
* **Attribute Additions: Credit\_card and Ptime**

**Credit\_card:** The Credit\_card attribute has been added to the "DeliveryOnline" entity. This attribute serves the purpose of associating a single credit card with a customer's payment method for a given delivery. This ensures a streamlined and secure payment process, aligning with the constraint that restricts a customer to a single credit card per delivery.

**Ptime:** The Ptime attribute represents the time at which an online payment is made for a delivery. This temporal information enhances the system's capability to track and manage payment transactions efficiently.

* **Constraint and Facility Considerations:**
* **The addition of Credit\_card aligns with a specific constraint within the system:**

**Constraint: Single Credit Card Association**

* To maintain financial security and streamline payment processing, the system enforces a constraint that limits a customer to associate only one credit card with their payment method for a single delivery. The introduction of the Credit\_card attribute ensures compliance with this constraint.

Facilitation of Transaction Tracking:

The inclusion of the Ptime attribute facilitates the tracking of payment transactions by recording the precise time at which an online payment is made. This temporal information contributes to the system's robustness in monitoring and auditing financial activities.

**Overview Update:**

* **Delivery Entity:**
* Represents a set of customer orders.
* Includes a unique ID, number of meals, links to a specific vehicle, and an Already\_Delivered flag.
* **Vehicle Entity:**
* Represents delivery vehicles.
* Includes a unique ID, maximum meal capacity, speed, and an Operational\_Status flag.