Data Modeling

**Accident Table Schema**

**Fields:**

* **ID (Integer):** A unique identifier for each accident record. This is the primary key.
* **Latitude (Float, optional):** Latitude coordinate of the accident location.
* **Longitude (Float, optional)**: Longitude coordinate of the accident location.
* **Timestamp (DateTime):** The exact time when the accident occurred.
* **AccidentType (String):** Type of accident (e.g., collision, off-road, pedestrian).
* **Severity (String):** Severity level of the accident (e.g., minor, moderate, severe).
* **Participants (Integer):** Number of participants involved in the accident.
* **WeatherConditions** (String, optional): Weather conditions at the time of the accident.

**Additional Fields:**

* **AccidentCoordinates:** A separate table to store multiple geometry data points for each accident, linked by the accident ID.

**JSON Example:**

{

"latitude": 60.192059,

"longitude": 24.945831,

"timestamp": "2024-03-03T12:00:00",

"volume": 100,

"averageSpeed": 80,

"congestionLevel": "High",

"geometry": [

[

{"latitude": 60.192059, "longitude": 24.945831},

{"latitude": 60.193000, "longitude": 24.946000},

{"latitude": 60.194000, "longitude": 24.947000}

]

]

}

**OR**

{

"latitude": 60.192059,

"longitude": 24.945831,

"timestamp": "2024-03-03T12:00:00",

"accident\_type": "Collision",

"severity": "Minor",

"participants": 2,

"weather\_conditions": "Clear"

}

**Traffic Table Schema**

**Fields:**

* **ID (Integer):** A unique identifier for each traffic record. This is the primary key.
* **Latitude (Float, optional):** Latitude coordinate where the traffic data was collected.
* **Longitude (Float, optional):** Longitude coordinate where the traffic data was collected.
* **Timestamp (DateTime):** The moment the traffic data was collected.
* **Volume (Integer):** Volume of traffic at the specified time, usually measured as vehicles per hour.
* **AverageSpeed (Float):** Average speed of the traffic in km/h at the time of data collection.
* **CongestionLevel (String, optional):** Level of traffic congestion (e.g., light, moderate, heavy).

**Additional Structure:**

* **TrafficCoordinates:** A separate table to store multiple geometry data points for each traffic record, linked by the traffic ID.

**JSON Example:**

{

"latitude": 60.192059,

"longitude": 24.945831,

"timestamp": "2024-03-03T12:00:00",

"volume": 100,

"averageSpeed": 80,

"congestionLevel": "High",

"geometry": [

[

{"latitude": 60.192059, "longitude": 24.945831},

{"latitude": 60.193000, "longitude": 24.946000},

{"latitude": 60.194000, "longitude": 24.947000}

]

]

}

**OR**

{

"latitude": 60.192059,

"longitude": 24.945831,

"timestamp": "2024-03-03T12:00:00",

"volume": 100,

"averageSpeed": 80,

"congestionLevel": "High"

}