## Data Model for Global EMart Entities

#### User

* user\_id (Primary Key)
* name
* email
* country
* registration\_date
* Last\_login\_date

#### Product

* product\_id (Primary Key)
* name
* description
* category
* price
* seller\_id (Foreign Key referencing User)
* Listing\_date

#### Order

* order\_id (Primary Key)
* order\_date
* order\_time
* customer\_id (Foreign Key referencing User)
* Total\_amount

#### Order\_Item

* order\_item\_id (Primary Key)
* order\_id (Foreign Key referencing Order)
* product\_id (Foreign Key referencing Product)
* quantity
* unit\_price

#### Payment

* transaction\_id (Primary Key)
* order\_id (Foreign Key referencing Order)
* payment\_date
* payment\_amount
* payment\_method

#### Shipment

* shipment\_id (Primary Key)
* order\_id (Foreign Key referencing Order)
* shipment\_date
* current \_status
* estimated\_arrival
* shipping\_address

#### Inventory

* inventory\_id (Primary Key)
* product\_id (Foreign Key referencing Product)
* quantity\_available
* last\_update\_date

### Relationships

* Each User can be associated with multiple Products, Orders, and Payments.
* Each Product belongs to a Seller User and can be part of multiple Orders.
* Each Order consists of one or more Order Items, associated with specific Products.
* Each Order can have one or more Payments and one Shipment.
* Each Shipment is associated with one Order and contains shipping details.
* Each Product has an associated Inventory detailing available quantities.

## Objective 1 : Data Ingestion

### Streaming Insert

In the context of Global EMart Inc., where the online marketplace handles a massive volume of data daily, several entities could potentially have streaming data. Streaming data is typically generated in real-time and can be used for various purposes such as monitoring, analytics, and more.

Entities with streaming inserts:

#### Order and Order Items

* Tracking real-time order placements and updates.
* Streaming data could include information about new orders, changes in order status, order cancellations, and updates to order items.

#### Payment

* Streaming payment transactions and updates.
* Streaming data could include real-time payment confirmations, payment failures, and other payment-related events.

### Batch Load

Unlike streaming data that is processed in real-time, batch data is collected over a period of time and then processed together.

#### User

* Loading user profiles and historical registration data into the system during system upgrades or migrations.
* Batch updating user attributes or preferences.

#### Product

* Loading historical product listings data into the system when migrating to a new database or storage solution.
* Periodically updating product details, such as descriptions, images, and attributes.

#### Inventory

* Loading inventory data at regular intervals to update available quantities.
* Bulk updates to inventory quantities after restocking or receiving new shipmen

#### Shipment

* Daily ordered data will be processed at once by the end of the same day
* Loading past shipment information for reporting, auditing, and analysis.