Understanding Declining Sales of Walmart in Brazil

Data Dictionary

ORDERS

Field Name	Datatype	Description
order_id	varchar(50)	Unique ID for each order
customer_id	varchar(50)	Foreign key referencing the customer
order_status	varchar(20)	Current status of the order
order_purchase_timestamp	datetime	Date and time when the order was placed
order_approved_at	datetime	Timestamp when the order was approved
order_delivered_carrier_date	datetime	Date the order was handed to the carrier
order_delivered_customer_date	datetime	Actual delivery date to the customer
order_estimated_delivery_date	datetime	Expected delivery date

ORDER_ITEMS

Field Name	Datatype	Description
order_id	varchar(50)	Foreign key referencing the order
order_item_id	int	Item ID number within the order
product_id	varchar(50)	Foreign key referencing the product
seller_id	varchar(50)	Foreign key referencing the seller
shipping_limit_date	datetime	Deadline for the product to be shipped
price	float	Selling price of the item
freight_value	float	Shipping cost paid by the customer

PRODUCTS

Field Name	Datatype	Description
product_id	varchar(50)	Unique ID assigned to each product
product_category	varchar(100)	Category or type of the product
product_name_length	float	Length of the product name (in characters)
product_description_length	float	Length of the product description
product_photos_qty	float	Number of photos associated with the product
product_weight_g	float	Weight of the product in grams
product_length_cm	float	Length of the product in centimeters
product_height_cm	float	Height of the product in centimeters
product_width_cm	float	Width of the product in centimeters

CUSTOMERS

Field Name	Datatype	Description
customer_id	varchar(50)	Unique customer identifier (primary key)
customer_unique_id	varchar(50)	Anonymized persistent customer ID
customer_zip_code_prefix	varchar(10)	ZIP code prefix of the customer
customer_city	varchar(100)	City of the customer
customer_state	varchar(20)	State of the customer

REVIEWS

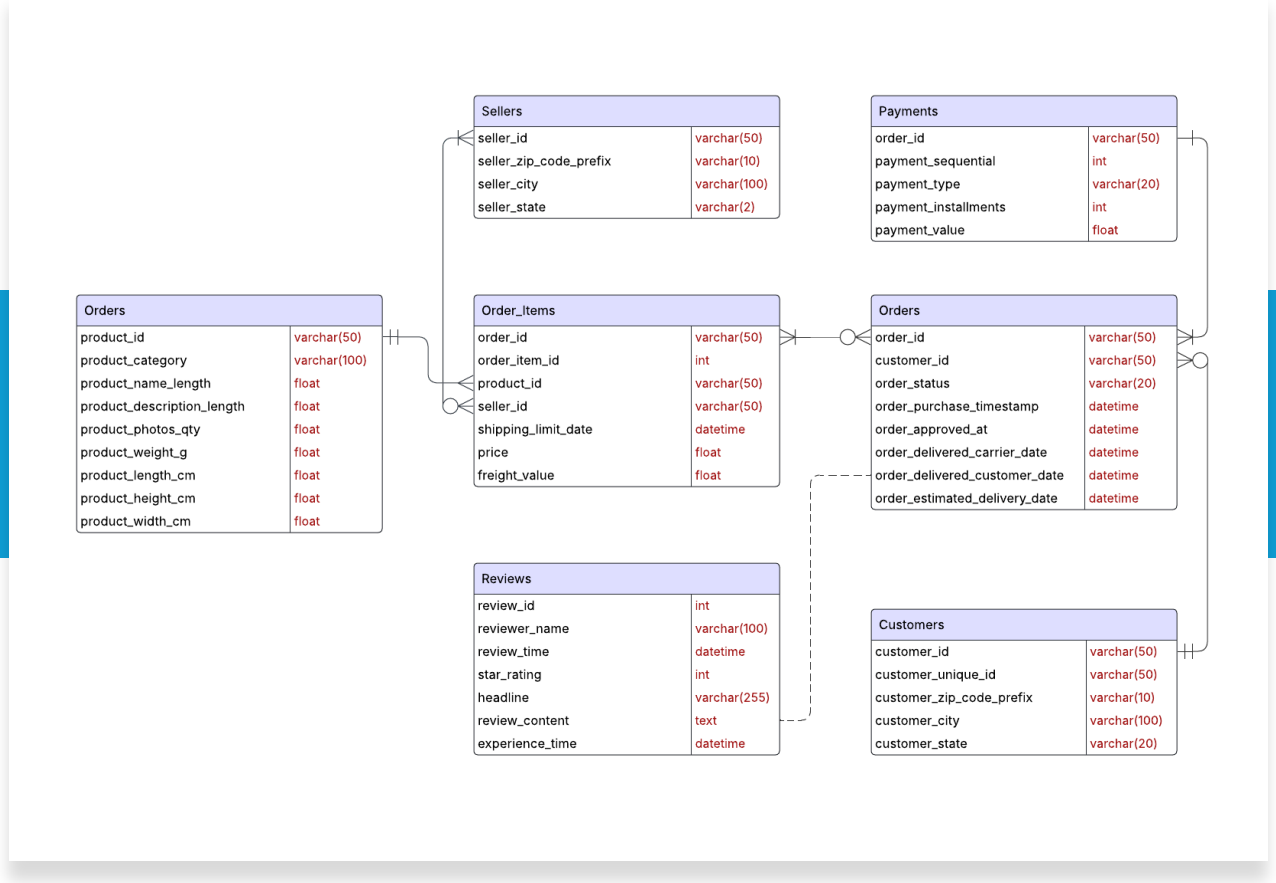
Field Name	Datatype	Description
review_id	varchar(50)	Unique ID assigned to the review
review_NAME	varchar(50)	Foreign key referencing the related order
review_time	int	Rating given by the customer (typically 1 to 5)
star_rating	text	Optional title of the review (may be null)
headline	text	Customer's written feedback or review message
review_content	datetime	Date the review was submitted
experience_time	datetime	Timestamp when the review was responded to (if applicable)

PAYMENTS

Field Name	Datatype	Description
order_id	varchar(50)	Foreign key referencing the order
payment_sequential	int	Payment sequence number (for split payments)
payment_type	varchar(20)	Type of payment (e.g., credit card, boleto)
payment_installments	int	Number of installments selected
payment_value	float	Total payment amount made

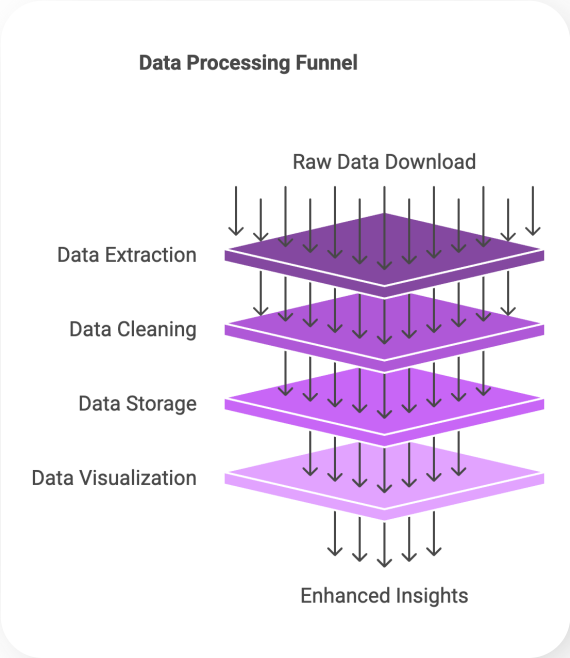
SELLERS

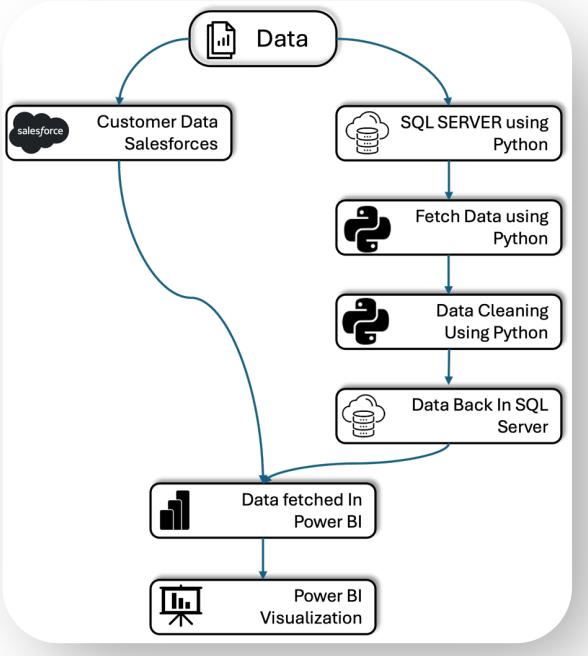
Field Name	Datatype	Description
seller_id	varchar(50)	Unique ID assigned to each seller
seller_zip_code_prefix	varchar(10)	ZIP code prefix of the seller's location
seller_city	varchar(100)	City where the seller is located
seller_state	varchar(20)	State where the seller is located



Entity Relationship Diagram

High Level Project Flow





Challenges Faced

```sql
select
    isnull(reviewer_name,'No Name') as reviewer_name,
    coalesce(cast(review_time as date),experience_time) as review_time,
    case
        when star_rating='Rated 1 out of 5 stars' then 1
        when star_rating='Rated 2 out of 5 stars' then 2
        when star_rating='Rated 3 out of 5 stars' then 3
        when star_rating='Rated 4 out of 5 stars' then 4
        when star_rating='Rated 5 out of 5 stars' then 5
        else 3 end as rating,
    headline,
    review_content
into refined_review
from walmart_trustpilot_reviews
```

Review was In text Format

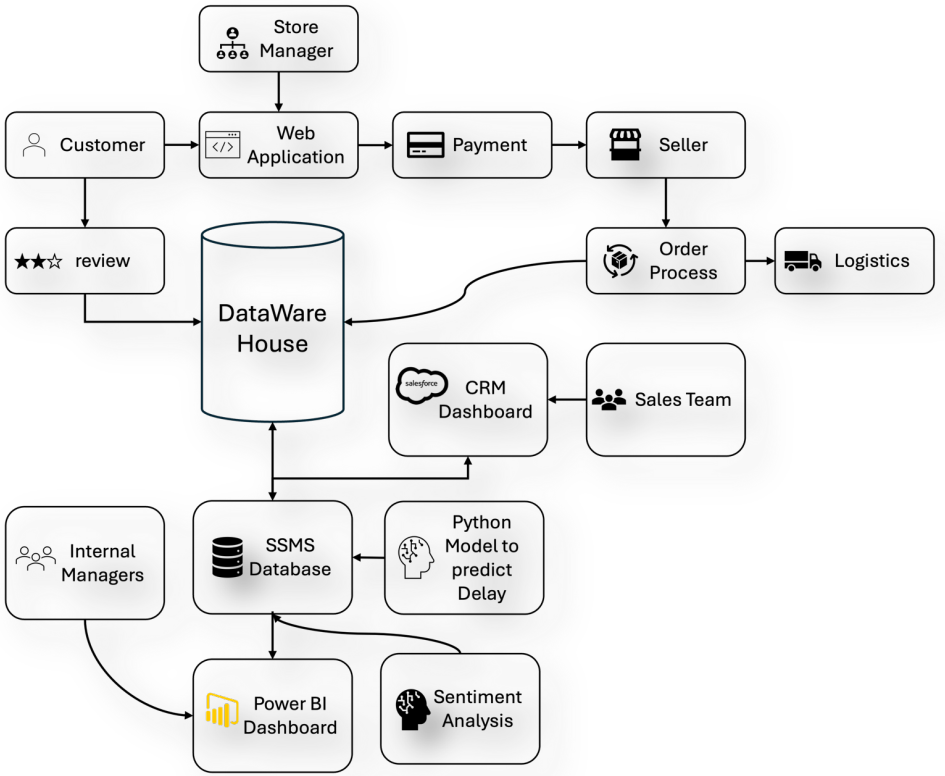
```python
def convert_review_time(df):
    """Convert review_time and experience_time columns."""
    def clean_review_time(value):
        if isinstance(value, str) and re.match(r'^\d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}\.\d+Z$', value):
            return datetime.strptime(value[:-1], "%Y-%m-%dT%H:%M:%S.%f").strftime("%Y-%m-%d %H:%M:%S")
        return None
    def clean_experience_time(value):
        try:
            return datetime.strptime(value, "%B %d, %Y").strftime("%Y-%m-%d")
        except (ValueError, TypeError):
            return None

    df['review_time'] = df['review_time'].apply(clean_review_time)
    df['experience_time'] = df['experience_time'].apply(clean_experience_time)
    return df
```

DateTime Format was aligning with SSMS


Walmart SWOT Analysis: Strategic Focus Areas
Strengths
Large Customer Base
Brand Recognition
Extensive Supply Chain Network
Threats
Intense Competition from Amazon
Risk of Further Sales Decline
Walmart SWOT Analysis
Weaknesses
High Rate of Late Deliveries
Poor Customer Reviews
Siloed Data Systems
Opportunities
Leverage Business Intelligence
Implement CRM Strategies
Utilize Predictive Analytics

Proposed High Level System Design



Conclusion

4 Integrated Solutions

- Power BI, Salesforce CRM, and continuous improvement processes addresses sales decline and operational inefficiencies

3 Strategic Impact

- Predictive inventory analytics reduce stockouts.
- AI-driven campaigns personalize customer engagement.
- Logistics improvements boost delivery reliability.

2 Marketing Wins

- Target younger audiences (25–34) via digital campaigns.
- Launch “Fresh Finds with Walmart” to promote groceries.
- Introduce “Walmart Rewards Brazil” to drive loyalty and repeat sales.

1 Expected Results

- +10% sales growth projected within one fiscal year.
- Improved customer satisfaction, online engagement, and foot traffic.
- Reclaimed market share and strengthened brand positioning