DROPS

Mobile Delivery System

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Project Title: Drops

Abstract:

Drops delivers high-valued video games, systems, and sneakers, same-day, to your door. With a business model which requires the constant movement of mobile inventory and assets, Drops mobile delivery system allows both staff and customers to keep track of inventory on the go. Through a short series of product inventory reviews, customers can track their orders from their smartphones. The goal of this system is to reduce overall operational costs, minimize shrink, and increase customers visibility.

Mission Statement & Mission Objectives

Mission Statement:

The purpose of this mobile delivery management system is to maintain data that is used and generated to support the moving inventory for our suppliers and to facilitate the cooperation and sharing of information between markets.

Mission Objectives:

- To maintain (add, update, delete) data on markets
- To maintain (add, update, delete) data on staff
- To maintain (add, update, delete) data on orders
- To maintain (add, update, delete) data on games
- To maintain (add, update, delete) data on sneakers
- To maintain (add, update, delete) data on fleet
- To maintain (add, update, delete) data on deliveries
- To maintain (add, update, delete) data on customers

- To perform searches on markets
- To perform searches on staff
- To perform searches on orders
- To perform searches on games
- To perform searches on sneakers
- To perform searches on fleet
- To perform searches on deliveries
- To perform searches on customers

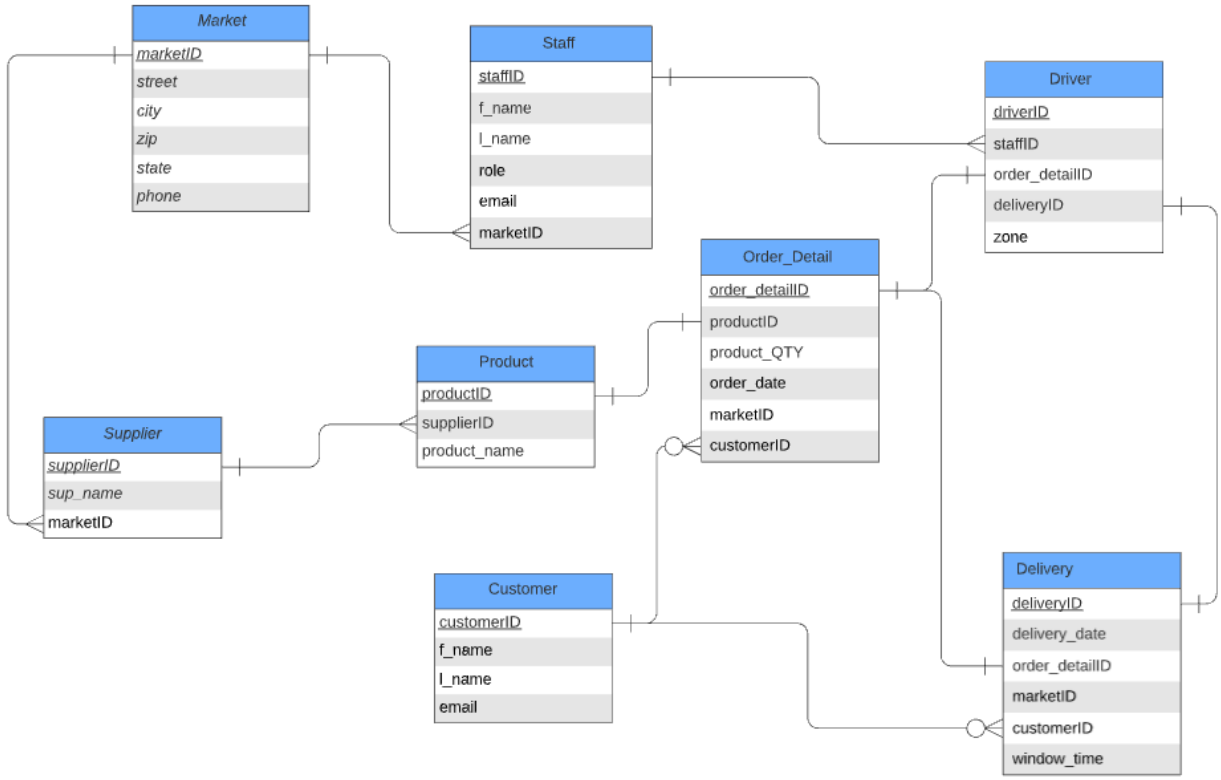
- To track the status of games
- To track the status of sneakers
- To track the status of orders
- To track the status of customers
- To track the status of deliveries

- To report on markets
- To report on staff
- To report on orders
- To report on games
- To report on sneakers
- To report on fleet
- To report on deliveries
- To report on customers

Major User Views

Data	Access Type	Company Director	HR	Billing	Logistics Team	Fleet Manager	Customer
Markets	maintain		X				
	query	X	X				
	report		X				
Staff	maintain		X				
	query	X	X				
	report		X				
Orders	maintain			X			
	query	X		X			
	report			X	X		
Games	maintain				X		
	query	X			X		X
	report				X		
Sneakers	maintain				X		
	query	X			X		X
	report				X		
Fleet	maintain					X	
	query	X				X	
	report				X	X	
Deliveries	maintain			X			
	query	X		X			X
	report			X	X		X
Customers	maintain			X			
	query	X		X			X
	report			X	X		X

ER Diagram


Market
marketID
street
city
zip
state
phone
Staff
staffID
f_name
l_name
role
email
marketID
Driver
driverID
staffID
order_detailID
deliveryID
zone
Order_Detail
order_detailID
productID
product_QTY
order_date
marketID
customerID
Product
productID
supplierID
product_name
Supplier
supplierID
sup_name
marketID
Customer
customerID
f_name
l_name
email
Delivery
deliveryID
delivery_date
order_detailID
marketID
customerID
window_time

Relational Models

Entity: Markets

Table	Attributes	Data Type	Constraints	Default
markets	marketID	INT	NOT NULL	
	street	VARCHAR (50)	NULL	
	city	VARCHAR (50)	NULL	
	zip	VARCHAR (50)	NULL	
	state	VARCHAR (50)	NULL	
	phone	VARCHAR (50)	NULL	

Primary Key = marketID
Candidate Key = marketID
Foreign Key = N/A
marketID ⟶ (street, city, zip, state, phone)

Entity: Staff

Table	Attributes	Data Type	Constraints	Default
Staff	staffID	INT	NOT NULL	
	f_name	VARCHAR (50)	NULL	
	l_name	VARCHAR (50)	NULL	
	role	VARCHAR (50)	NULL	
	email	VARCHAR (50)	NULL	
	marketID	INT	NULL	

Primary Key = staffID
Candidate Key = staffID, f_name, l_name, role, marketID
Foreign Key = marketID
staffID ⟶ (f_name, l_name, role, email, marketID)

Entity: Orders

Table	Attributes	Data Type	Constraints	Default
Orders	order_detailID	INT	NOT NULL	
	productID	VARCHAR (50)	NULL	
	product_QTY	INT	NULL	
	order_date	VARCHAR (50)	NULL	
	marketID	INT	NULL	
	customerID	INT	NULL	

Primary Key = order_detailID
Candidate Key = order_detailID, productID, product_QTY, order_date, marketID, customerID
Foreign Key = productID, marketID, customerID
order_detailID ⟶ (productID, product_QTY, order_date, marketID, customerID)

Entity: Fleet

Table	Attributes	Data Type	Constraints	Default
Fleet	fleetID	INT	NOT NULL	
	make	VARCHAR (50)	NULL	
	model	VARCHAR (50)	NULL	
	vin	INT	NULL	
	plate	VARCHAR (10)	NULL	
	enabled	BOOL	NULL	
	marketID	INT	NULL	

Primary Key = fleetID
Candidate Key = fleetID, make, model, enabled, marketID
Foreign Key = marketID
fleetID ⟶ (make, model, vin, plate, enabled, marketID)

Entity: Games

Table	Attributes	Data Type	Constraints	Default
Games	gameID	INT	NOT NULL	
	title	INT	NULL	
	model	VARCHAR (50)	NULL	
	publisher	VARCHAR (50)	NULL	
	sku	VARCHAR (50)	NULL	
	release_date	VARCHAR (25)	NULL	
	price	FLOAT	NULL	
	rating	VARCHAR (25)	NULL	
	platform	VARCHAR (25)	NULL	
	inStock	BOOL	NULL	
	surplus	INT	NULL	
	reserved	INT	NULL	
	supplierID	INT	NULL	

Primary Key = gameID
Candidate Key = gameID, title, publisher, sku, release_date, price, rating, platform, inStock, surplus, reserved, supplierID
Foreign Key = supplierID
gameID $\longrightarrow$ (title, model, publisher, sku, release_date, price, rating, platform, inStock, surplus, reserved)

Entity: Sneakers

Table	Attributes	Data Type	Constraints	Default
Sneakers	shoeID	INT	NOT NULL	
	brand	VARCHAR (50)	NULL	
	name	VARCHAR (50)	NULL	
	style	VARCHAR (50)	NULL	
	color	VARCHAR (50)	NULL	
	size_type	VARCHAR (50)	NULL	
	size	VARCHAR (25)	NULL	
	price	FLOAT	NULL	
	release_year	VARCHAR (25)	NULL	
	inStock	BOOL	NULL	
	surplus	INT	NULL	
	reserved	INT	NULL	
	supplierID	INT	NULL	

Primary Key = shoeID
Candidate Key = shoeID, brand, name, style, color, size_type, size, price, release_year, inStock, surplus, reserved, supplierID
Foreign Key = supplierID
shoeID ⟶ (brand, name, style, color, size_type, size, price, release_year, inStock, surplus, reserved, supplierID)

Entity: Delivery

Table	Attributes	Data Type	Constraints	Default
Delivery	deliveryID	INT	NOT NULL	
	delivery_date	VARCHAR (25)	NULL	
	driverID	INT	NULL	
	order_detailID	INT	NULL	
	marketID	BOOL	NULL	
	customerID	INT	NULL	
	window	VARCHAR (25)	NULL	
	isCompleted	BOOL	NULL	

Primary Key = deliveryID
Candidate Key = deliveryID, delivery_date, driverID, order_detailID, marketID, customerID, window, isCompleted
Foreign Key = driverID, order_detailID, marketID, customerID
deliveryID ⟶ (delivery_date, driverID, order_detailID, marketID, customerID, window, isCompleted)

Entity: Customer

Table	Attributes	Data Type	Constraints	Default
Customer	customerID	INT	NOT NULL	
	f_name	VARCHAR (50)	NULL	
	l_name	VARCHAR (50)	NULL	
	email	VARCHAR (50)	NULL	

Primary Key = customerID
Candidate Key = customerID, f_name, l_name
Foreign Key = N/A
customerID ⟶ (f_name, l_name, email)