MoveIn Essentials Inventory and Order Management System – MooKit

1. Introduction

This document describes the database design for MooKit, a project aimed at offering customizable kits of essential household items to international students, college students, and individuals relocating. MooKit seeks to provide a flexible, affordable, and ecofriendly solution for furnishing new living spaces. It explains the detailed entityrelationship diagram (ERD) of a business process, highlighting the structure, components, and relationships between various entities. The diagram presents an overview of how marketing platforms, campaigns, customers, orders, and other related entities interact within a system. The focus is on providing a thorough description of the entities, their attributes, and the relationships that link these entities in a marketing campaign-driven ecosystem.

2. Business Problems Addressed

The MooKit system is designed to address the following business challenges:

Customization and Affordability: Offering customizable kits with flexible pricing to meet the needs of students and young professionals.

Logistics and Operational Efficiency: Streamlining procurement, delivery, and order management processes for cost-effectiveness.

Sustainability: Promoting environmental responsibility through buyback and redistribution of pre-owned items.

3. Entity and Attribute Descriptions

3.1 Marketing Platform

Attributes:

- **PlatformID:** Serves as the primary key, uniquely identifying each marketing platform.
- **PlatformName:** The name or title of the platform used for marketing campaigns.
- **PlatformType:** Describes the type of marketing platform, for example, Social Media, Search Engine, or Display Network.
- **CostStructure:** Defines the pricing model associated with advertisements (e.g., Cost Per Click (CPC), Cost Per Thousand Impressions (CPM)).
- **AdFormat:** Specifies the advertisement format supported, such as video, banner, or text.

Relationships:

A marketing platform is utilized for multiple marketing campaigns. This relationship indicates that a campaign can run across various platforms.

3.2 Marketing Campaign

Attributes:

- **CampaignID:** The unique identifier of a marketing campaign.
- **StartDate:** The date on which the marketing campaign begins.
- **EndDate:** The end date of the campaign, signifying its duration.
- **TargetAudience:** Defines the audience segment the campaign is targeting (e.g., College Students, International Students).

Relationships:

A marketing campaign targets specific audiences through the Campaign Target entity.

Multiple marketing campaigns can be executed on one or more Marketing Platforms.

3.3 Campaign Target

Attributes:

- **CampaignTargetID:** A unique identifier for each campaign target.
- **CampaignID:** Links to the respective marketing campaign through a foreign key.
- **CustomerTypeID:** Identifies the type of customer being targeted (e.g., International Students, Relocating Individuals).

Relationships:

Each campaign target is associated with one or more Customers, based on customer type.

3.4 Customer

Attributes:

- **CustomerID:** Primary key identifying a customer.
- **Name:** Full name of the customer.
- **Email:** Contact email address of the customer.
- **Address:** Residential or mailing address of the customer.
- **Phone:** Phone number for communication.
- **CustomerType:** The category under which a customer falls, such as International Student or Relocating Individual.

Relationships:

A customer can be part of one or more Campaign Targets, linking them to specific marketing campaigns.

Customers can also raise inquiries or seek assistance via Customer Support.

3.5 Customer Support

Attributes:

- **SupportID:** Unique identifier for each customer support request.
- **InquiryDate:** The date when the customer raised an inquiry.

- **ResolutionStatus:** Current status of the support case (e.g., Open, Resolved, Closed).

Relationships:

Customers can raise multiple support requests, forming a relationship between the Customer and Customer Support entities.

3.6 Order

Attributes:

- **OrderID:** Unique identifier of an order placed by a customer.
- **OrderDate:** Date the order was placed.
- **TotalAmount:** Total amount charged for the order.
- **Status:** Current status of the order (e.g., Pending, Completed).

Relationships:

An order contains multiple Order Lines, linking it to products purchased.

Each order is processed via a Payment Processor and delivered by a Logistics Provider.

3.7 Order Line

Attributes:

- **OrderID:** Links back to the respective order.
- **PackageID:** Refers to the product package included in the order.
- **Quantity:** The number of units of the product package ordered.

Relationships:

Each order can have multiple line items, with each line representing an individual product package.

3.8 Payment Processor

Attributes:

- **ProcessorID:** Unique identifier for the payment processor.
- **Name:** Name of the payment processing company (e.g., PayPal, Stripe).
- **TransactionFee:** Fees charged by the payment processor for each transaction.

Relationships:

Payment processors handle transactions for Orders, ensuring seamless payments.

3.9 Logistics Provider

Attributes:

- **ProviderID:** Unique identifier for the logistics company.
- **Name:** Name of the logistics provider (e.g., FedEx, DHL).
- **ContactInfo:** Contact details for the logistics provider.
- **ServiceArea:** Regions in which the provider operates, ensuring delivery coverage.

Relationships:

Each order is linked to a logistics provider responsible for delivering products.

3.10 MooPackage (Product Package)

Attributes:

- **PackageID:** Unique identifier of the product package.
- **PackageName:** Name or description of the package.
- **Description:** A detailed description of what is included in the package.
- **Price:** The cost of the entire package.
- **ProductSet:** A list of products included in the package.
- **Availability:** The stock availability of the package.

Relationships:

A MooPackage (product package) includes multiple products, and is referenced in the Order Line.

3.11 Product

Attributes:

- **ProductID:** Unique identifier of the product.
- **Name:** Name of the product.
- **Description:** A description of the product's features and uses.
- **Price:** The cost of the product.
- **Category:** The category or type of product (e.g., Electronics, Apparel).

Relationships:

A product is part of one or more Product Packages, and each product is supplied by a Supplier.

3.12 Supplier

Attributes:

- **SupplierID:** Unique identifier for the supplier.
- **Name:** The name of the supplier company or individual.
- **ContactInfo:** Supplier's contact information (e.g., Email, Phone).
- **Location:** The geographical location of the supplier.

Relationships:

A supplier provides products to be included in Product Packages.

3.13 Quality Assurance Team

Attributes:

- **QAID:** Unique identifier for a quality assurance (QA) team member.
- **QAName:** Name of the QA team member.

- **QARole:** Role of the QA team member (e.g., Lead Tester).
- **Email:** Contact email for the QA team member.
- **Phone:** Phone contact information for the QA team member.

Relationships:

QA teams are responsible for reviewing the MooPackage (product packages) before they are delivered to ensure quality.

4. Entity Relationships

The ERD demonstrates how various entities are interconnected, allowing for a seamless process flow from customer acquisition to order fulfillment. Each entity either directly or indirectly relates to others, ensuring that every aspect of the system—from marketing to product delivery—is efficiently managed.

- Marketing Campaigns are executed across multiple Platforms and target different Customer Types.
- Customers place Orders, which consist of Order Lines for specific Product Packages.
- Payment Processors handle the financial aspect of the orders, while Logistics Providers manage the delivery.
- Suppliers provide products that are packaged into Product Packages, which are reviewed by the Quality Assurance Team to ensure customer satisfaction.
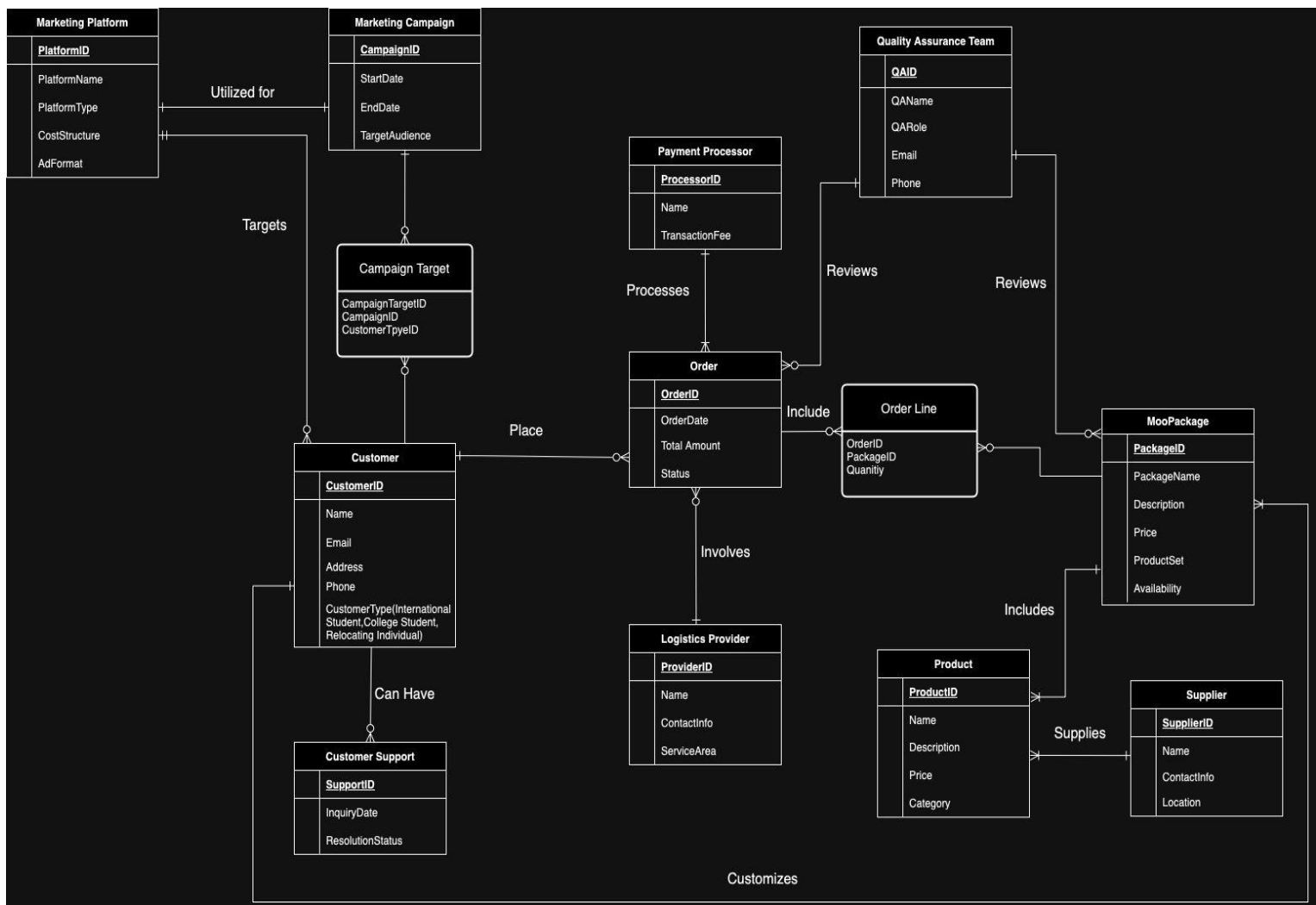
5. Conclusion

This ERD showcases the relationships between the key entities involved in a marketing and order fulfillment process. By detailing the attributes and relationships of each entity, the document provides a comprehensive understanding of the business model. The efficient interaction between these entities ensures the smooth operation of campaigns, customer acquisition, order management, and delivery.