

# Background of the Business

The Coffee Nut, a charming, locally owned coffee shop in a picturesque beach town, offers a cozy atmosphere with comfortable seating and beach-themed decor. Established by a passionate coffee enthusiast, it sources the finest beans from sustainable farms, ensuring ethically produced coffee. The shop's warm and inviting atmosphere makes it a great place to relax, work, or catch up with friends. The Coffee Nut has built a loyal customer base with friendly service, a sense of community, and consistently excellent coffee.

As the business continues to grow and establish its presence in the community, the owners are excited to introduce a comprehensive rewards program designed to elevate customer satisfaction. This program will feature a range of enticing benefits, such as earning points with every purchase, receiving exclusive discounts, and gaining early access to new products or special events. The primary goal is to encourage repeat visits by offering tangible rewards that reflect the patrons' loyalty and support.

Moreover, the rewards program aims to deepen the bond between the shop and its valued customers. By acknowledging and appreciating their continued patronage, the shop hopes to create a warm and welcoming environment where customers feel recognized and valued. This initiative is more than just a strategy for boosting sales; it represents the owners' commitment to fostering a strong, community-centric relationship that extends beyond transactions, building lasting connections with every visitor.

## Interests of the Business

1. **Customer Retention:** The Coffee Nut aims to retain its existing customers by rewarding their loyalty. This can lead to repeat visits and increased customer lifetime value.
2. **Increased Sales:** By offering rewards and incentives, The Coffee Nut hopes to encourage customers to spend more during each visit, thereby boosting overall sales.
3. **Customer Engagement:** The loyalty program can help The Coffee Nut engage with its customers more effectively, fostering a sense of community and belonging.
4. **Data Collection:** The program can provide valuable data on customer preferences, purchasing habits, and demographics, which can be used to tailor marketing strategies and improve customer experience.
5. **Brand Loyalty:** By creating a rewards program, The Coffee Nut aims to build stronger brand loyalty, making customers more likely to choose their coffee shop over competitors.
6. **Word-of-Mouth Marketing:** Satisfied customers who benefit from the loyalty program are more likely to recommend The Coffee Nut to friends and family, leading to new customer acquisition.
7. **Competitive Advantage:** Implementing a loyalty program can give The Coffee Nut a competitive edge in the local market, differentiating it from other coffee shops.

# Entities

## Customers:

- **CustomerID\***: Unique identifier for each customer
- **CustomerName**: Name of the customer
- **Phone**: Customer's phone number
- **Email**: Customer's email address
- **PaymentInformation**: Payment details of the customer
- **Frequency**: Number of visits per month
- **Purchases(fk)**: Foreign key linking to Purchases
- **Rewards(fk)**: Foreign key linking to Rewards

## Purchases:

- **Receipt#\***: Unique identifier for each purchase
- **ReceiptAmount**: Total amount of the receipt
- **CustomerID**: Foreign key linking to Customers
- **PaymentInfo**: Payment details for the purchase
- **Products(fk)**: Foreign key linking to Products
- **Rewards(fk)**: Foreign key linking to Rewards
- **POSID**: Point of Sale identifier

## Employees:

- **EmployeeID\***: Unique identifier for each employee
- **EmployeeName**: Name of the employee
- **ManagerID**: Identifier for the employee's manager
- **POSID**: Point of Sale identifier
- **Receipt#**: Foreign key linking to Purchases
- **Purchases(fk)**: Foreign key linking to Purchases

## Products:

- **ProductID\***: Unique identifier for each product
- **ProductName**: Name of the product (e.g., Drink, Pastry)
- **ProductType**: Type of product (e.g., Drink, Pastry)

## Rewards:

- **RewardID\***: Unique identifier for each reward
- **CustomerID**: Foreign key linking to Customers
- **RewardType**: Type of reward (e.g., Discount, Free Drink)
- **RewardValue**: Value of the reward
- **Frequency**: Number of times the reward can be redeemed
- **Products(fk)**: Foreign key linking to Products

# Relationships

## 1. Customers:

- **Purchases:** A customer can make multiple purchases. This relationship is represented by the foreign key `CustomerID` in the `Purchases` entity.
- **Rewards:** A customer can earn multiple rewards. This relationship is represented by the foreign key `CustomerID` in the `Rewards` entity.

## 2. Purchases:

- **Customers:** Each purchase is made by a single customer. This relationship is represented by the foreign key `CustomerID` in the `Purchases` entity.
- **Products:** Each purchase can include multiple products. This relationship is represented by the foreign key `Products (fk)` in the `Purchases` entity.
- **Rewards:** Each purchase can earn rewards. This relationship is represented by the foreign key `Rewards (fk)` in the `Purchases` entity.
- **Employees:** Each purchase is processed by an employee. This relationship is represented by the foreign key `EmployeeID` in the `Purchases` entity.

## 3. Employees:

- **Purchases:** An employee can process multiple purchases. This relationship is represented by the foreign key `EmployeeID` in the `Purchases` entity.
- **Manager:** Each employee can have a manager. This relationship is represented by the `ManagerID` in the `Employees` entity.

## 4. Products:

- **Purchases:** A product can be part of multiple purchases. This relationship is represented by the foreign key `Products (fk)` in the `Purchases` entity.
- **Rewards:** A product can be associated with multiple rewards. This relationship is represented by the foreign key `Products (fk)` in the `Rewards` entity.

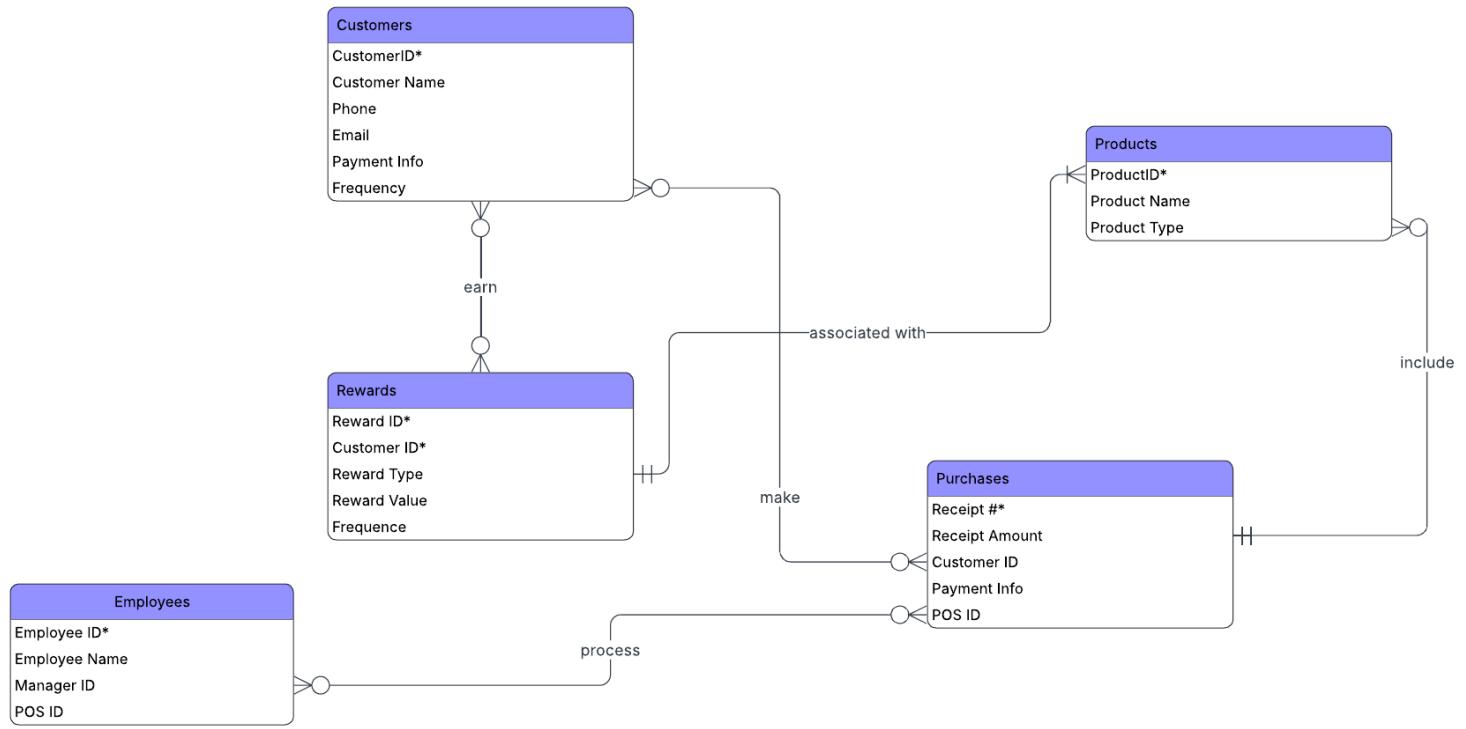
## 5. Rewards:

- **Customers:** A reward can be earned by multiple customers. This relationship is represented by the foreign key `CustomerID` in the `Rewards` entity.
- **Purchases:** A reward can be associated with multiple purchases. This relationship is represented by the foreign key `Rewards (fk)` in the `Purchases` entity.
- **Products:** A reward can be associated with multiple products. This relationship is represented by the foreign key `Products (fk)` in the `Rewards` entity.

# Attributes

- Customers: `CustomerID*`, `CustomerName`, `Phone`, `Email`, `PaymentInformation`, `Frequency`
- Purchases: `Receipt#*`, `ReceiptAmount`, `CustomerID`, `PaymentInfo`, `POSID`
- Employees: `EmployeeID*`, `EmployeeName`, `ManagerID`, `POSID`
- Products: `ProductID*`, `ProductName`, `ProductType`
- Rewards: `RewardID*`, `CustomerID*`, `RewardType`, `RewardValue`, `Frequency`

# Entity Relationship Diagram



## Normalization to 3NF

*Customers:*

- **CustomerID\***: Unique identifier for each customer
- **CustomerName**: Name of the customer
- **Phone**: Customer's phone number
- **Email**: Customer's email address
- **PaymentInformation**: Payment details of the customer
- **Frequency**: Number of visits per month

*Purchases:*

- **Receipt#\***: Unique identifier for each purchase
- **ReceiptAmount**: Total amount of the receipt
- **CustomerID**: Foreign key linking to Customers
- **POSID**: Point of Sale identifier

*Employees:*

- **EmployeeID\***: Unique identifier for each employee
- **EmployeeName**: Name of the employee
- **ManagerID**: Identifier for the employee's manager
- **POSID**: Point of Sale identifier

*Products:*

- **ProductID\***: Unique identifier for each product
- **ProductName**: Name of the product (e.g., Drink, Pastry)
- **ProductType**: Type of product (e.g., Drink, Pastry)

*Rewards:*

- **RewardID\***: Unique identifier for each reward
- **CustomerID**: Foreign key linking to Customers
- **RewardType**: Type of reward (e.g., Discount, Free Drink)
- **RewardValue**: Value of the reward
- **Frequency**: Number of times the reward can be redeemed
- **ProductID**: Foreign key linking to Products

**Relationships:**

- **Customers** make **Purchases**.
- **Purchases** include **Products**.
- **Employees** process **Purchases**.
- **Customers** earn **Rewards**.
- **Rewards** are associated with **Products**.