**Nora’s Bagel Bin Database Blueprints**

**Second Normal Form (2NF)**

**(A1B and A1B)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ORDER** | |  | **BAGEL ORDER LINE ITEM** | |  | **BAGEL** | |
| PK | OrderID |  | PK / FK | OrderID |  | PK | BagelID |
|  | Date | 1:M | PK / FK | BagelID | M:1 |  | Name |
|  | DeliveryFee |  |  | BagelQuantity |  |  | Description |
|  | SpecialNotes |  |  |  |  |  | Price |
|  | FirstName |  |  |  |  |  |  |
|  | LastName |  |  |  |  |  |  |
|  | Address1 |  |  |  |  |  |  |
|  | Address2 |  |  |  |  |  |  |
|  | City |  |  |  |  |  |  |
|  | State |  |  |  |  |  |  |
|  | Zip |  |  |  |  |  |  |
|  | PhoneNumber |  |  |  |  |  |  |

**(A1C)**

* Order to Bagel Order Line Item is one-to-many as there can be many line items per bagel order but every line item belongs to one order.
* Many Bagel Order Line Items have one bagel but every bagel can belong to 0, 1, or many order line Items.

**Nora’s Bagel Bin Database Blueprints**

**Third Normal Form (3NF)**

**(A2A, A2B, A2C, and A2D)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **OrderInformation** | | |  | **BAGEL ORDER LINE ITEM** | |  | **BAGEL** | |
| PK | OrderID | |  | PK / FK | Bagel Order ID |  | PK | BagelID |
| FK | CustomerID | | 1:M | PK / FK | Bagel ID | M:1 |  | Name |
|  | Date | |  |  | BagelQuantity |  |  | Description |
|  | DeliveryFee | |  |  |  |  |  | Price |
|  | SpecialNotes | |  |  |  |  |  |  |
|  | M:1 |  |  |  |  |  |  |  |
| **Customer** | | |  |  |  |  |  |  |
| PK | CustomerID | |  |  |  |  |  |  |
|  | FirstName | |  |  |  |  |  |  |
|  | LastName | |  |  |  |  |  |  |
|  | Address1 | |  |  |  |  |  |  |
|  | Adress2 | |  |  |  |  |  |  |
|  | City | |  |  |  |  |  |  |
|  | State | |  |  |  |  |  |  |
|  | Zip | |  |  |  |  |  |  |
|  | PhoneNumber | |  |  |  |  |  |  |

**(A2E)**

* OrderInformation to Bagel Order Line Item is one-to-many as there can be many line items per bagel order but every line item belongs to one order.
* Every Bagel Order Line Item has one bagel in it, but a bagel can belong to 0, 1, or many order line Items.
* OrderInformation can belong to one and only one customer, although one customer can submit many orders.

**Nora’s Bagel Bin Database Blueprints**

**Final Physical Database Model**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **OrderInfo** | | |  | **BAGEL ORDER LINE ITEM** | | |  | **BAGEL** | |  |
| PK | OrderID | INT |  | PK / FK | OrderID | INT |  | PK | BagelID | CHAR(2) |
| FK | CustomerID | INT | 1:M | PK / FK | BagelID | CHAR(2) | M:1 |  | BagelName | VARCHAR(40) |
|  | Date | TIMESTAMP |  |  | BagelQuantity | INT |  |  | Description | VARCHAR(60) |
|  | DeliveryFee | NUMERIC(4,2) |  |  |  |  |  |  | Price | NUMERIC(4,2) |
|  | SpecialNotes | VARCHAR(75) |  |  |  |  |  |  |  |  |
|  | M:1 |  |  |  |  |  |  |  |  |  |
| **Customer** | | |  |  |  |  |  |  |  |  |
| PK | CustomerID | INT |  |  |  |  |  |  |  |  |
|  | FirstName | VARCHAR(25) |  |  |  |  |  |  |  |  |
|  | LastName | VARCHAR(25) |  |  |  |  |  |  |  |  |
|  | Address1 | VARCHAR(45) |  |  |  |  |  |  |  |  |
|  | Address2 | VARCHAR(10) |  |  |  |  |  |  |  |  |
|  | City | VARCHAR(25) |  |  |  |  |  |  |  |  |
|  | State | CHAR(2) |  |  |  |  |  |  |  |  |
|  | Zip | CHAR(5) |  |  |  |  |  |  |  |  |
|  | PhoneNumber | INT |  |  |  |  |  |  |  |  |

**Jaunty Coffee Co.**

**(B1A and B2B)**

**Code used:**

**CREATE TABLE CoffeeShop (**

**ShopID INT,**

**ShopName VARCHAR(50),**

**City VARCHAR(50),**

**State CHAR(2),**

**PRIMARY KEY (ShopID)**

**);**

**CREATE TABLE Employee (**

**EmployeeID INT,**

**FirstName VARCHAR(30),**

**LastName VARCHAR(30),**

**HireDate DATE,**

**JobTitle VARCHAR(30),**

**ShopID INT,**

**PRIMARY KEY (EmployeeID),**

**FOREIGN KEY (ShopID)**

**REFERENCES CoffeeShop(ShopID)**

**);**

**CREATE TABLE Supplier (**

**SupplierID INT,**

**CompanyName VARCHAR(50),**

**Country VARCHAR(30),**

**SalesContactName VARCHAR(60),**

**Email VARCHAR(50) NOT NULL,**

**PRIMARY KEY (SupplierID)**

**);**

**CREATE TABLE Coffee (**

**CoffeeID INT,**

**ShopID INT,**

**SupplierID INT,**

**CoffeeName VARCHAR(30),**

**PricePerPound DECIMAL(5 , 2 ),**

**PRIMARY KEY (CoffeeID),**

**FOREIGN KEY (ShopID)**

**REFERENCES CoffeeShop(ShopID),**

**FOREIGN KEY (SupplierID)**

**REFERENCES Supplier(SupplierID)**

**);**

**Result of code:**

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Description automatically generated

**(B2A and B2B)**

INSERT INTO CoffeeShop

VALUES (1111, 'Bean Juice', 'Monticello', 'AR'),

(1221, 'Caffiene To Go', 'Atlanta', 'GA'),

(1331, 'Legal Stimulants', 'New Orleans', 'LA'),

(1441, 'The Darker The Drink', 'San Fransisco', 'CA');

INSERT INTO Supplier

Values (2111, 'We Got The Beans', 'Columbia', 'Jorge Santino', 'wegotthebeans@coffee.com'),

(2221, 'Beans, Beans, Good For Your Heart', 'Italy', 'Guissepe Bonfanti', 'ThisACoffeeIsAGreat@cafe.com'),

(2331, 'The Beanstalk', 'United States', 'Sam Porter', 'beanstalking@coffee.com'),

(2441, 'The Beans Knees', 'Canada', 'Derrick Oates', 'beansknees@coffee.com');

INSERT INTO Coffee

Values (3111, 1111, 2441, 'Kona', 12.75),

(3221, 1221, 2221, 'Italian Dark Roast', 14.50),

(3331, 1331, 2111, 'Columbian Light Roast', 8.50),

(3441, 1441, 2331, 'Arabica', 10);

INSERT INTO Employee

VALUES (4111, 'Joe', 'Bonfanti', 2009-05-07, 'Manager', 1331),

(4221, 'Brianna', 'McIndoe', 2012-11-11, 'Assistant Maniger', 1221),

(4331, 'Kevin', 'Gates', 1998-12-14, 'Manager', 1441),

(4441, 'Kristi', 'Balentine', 2000-06-03, 'Barista', 1331);

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**(B3A and B3B)**

**CREATE VIEW EmployeeView AS**

**SELECT EmployeeID,**

**CONCAT(FirstName, ' ', LastName) AS EmployeeFullName,**

**HireDate,**

**JobTitle,**

**ShopID**

**FROM Employee;**

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**(B4A and B4B)**

**CREATE INDEX IndexCoffeeName**

**ON Coffee (CoffeeName);**

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Description automatically generated

**(B5A and B5B)**

**SELECT C.CoffeeName, CS.ShopName**

**FROM CoffeeShop CS, Coffee C**

**WHERE CS.ShopID = C.ShopID;**

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**(B6A and B6B)**

**SELECT CS.ShopName, CS.City, E.FirstName, E.LastName, C.CoffeeName**

**FROM CoffeeShop AS CS**

**LEFT JOIN Employee AS E**

**ON CS.ShopID = E.ShopID**

**INNER JOIN Coffee as C**

**ON C.ShopID = CS.ShopID OR C.ShopID = E.ShopID**

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