# **Schema**

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| **Document Intention:** | The current SQL schema conforming to the ER Diagram. |
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| **Document Version Date-Stamp:** | 21/03/2023 |
| **Document Version:** | 4 |
| **Document Version History:** | |
| 1. Document Created. 2. Fixed issues. 3. Fixed more issues. 4. Updated based on ER. | |

/\* Complete set of DDL statements (CREATE TABLE statements) \*/

CREATE TABLE ExchangeRate (

CurrencyName char(4) NOT NULL,

USDConversionRate numeric(8, 6) NOT NULL,

CurrencySymbol char(2) NOT NULL,

PRIMARY KEY (CurrencyName));

CREATE TABLE Staff (

StaffID bigint(19) NOT NULL PRIMARY KEY AUTO\_INCREMENT,

CurrencyName char(4),

StaffRole integer(1) NOT NULL,

ComissionRate numeric(8, 6),

Firstname varchar(15) NOT NULL,

Surname varchar(15) NOT NULL,

PhoneNumber varchar(15) NOT NULL,

EmailAddress varchar(25) NOT NULL UNIQUE,

DateOfBirth date NOT NULL,

Postcode varchar(7) NOT NULL,

HouseNumber varchar(4) NOT NULL,

StreetName varchar(20) NOT NULL,

HashedPassword binary(32) NOT NULL,

PasswordSalt binary(32) NOT NULL,

FOREIGN KEY (CurrencyName) REFERENCES ExchangeRate(CurrencyName));

CREATE TABLE BlankType (

TypeNumber INTEGER NOT NULL PRIMARY KEY AUTO\_INCREMENT,

TypeDescription varchar(255) NOT NULL);

CREATE TABLE Blank (

BlankNumber bigint(19) NOT NULL PRIMARY KEY AUTO\_INCREMENT,

StaffID bigint(19) NOT NULL,

TypeNumber integer(3) NOT NULL,

BlankDescription varchar(255) NOT NULL,

Blacklisted boolean NOT NULL,

Void boolean NOT NULL,

ReceivedDate date NOT NULL,

AssignedDate date,

ReturnedDate date,

FOREIGN KEY (StaffID) REFERENCES Staff(StaffID),

FOREIGN KEY (TypeNumber) REFERENCES BlankType(TypeNumber));

CREATE TABLE DiscountPlan (

DiscountPlanID bigint(19) NOT NULL PRIMARY KEY AUTO\_INCREMENT,

DiscountType integer(1) NOT NULL,

DiscountPercentage numeric(8, 6));

CREATE TABLE FlexibleDiscountEntries (

EntryID bigint(19) NOT NULL PRIMARY KEY AUTO\_INCREMENT,

DiscountPlanID bigint(19) NOT NULL,

AmountLowerBound numeric(12, 2) NOT NULL,

AmountUpperBound numeric(12, 2) NOT NULL,

DiscountPercentage numeric(8, 6) NOT NULL,

FOREIGN KEY (DiscountPlanID) REFERENCES DiscountPlan(DiscountPlanID));

CREATE TABLE Customer (

CustomerID bigint(19) NOT NULL PRIMARY KEY AUTO\_INCREMENT,

DiscountPlanID bigint(19),

CurrencyName char(4) NOT NULL,

Firstname varchar(15) NOT NULL,

Surname varchar(15) NOT NULL,

PhoneNumber varchar(15) NOT NULL,

EmailAddress varchar(25),

DateOfBirth date NOT NULL,

Postcode varchar(7) NOT NULL,

HouseNumber varchar(4) NOT NULL,

StreetName varchar(20) NOT NULL,

AccountDiscountCredit numeric(12, 2),

PurchaseAccumulation numeric(10, 2) NOT NULL,

PurchaseMonthBeginning date NOT NULL,

Alias varchar(32) NOT NULL UNIQUE,

FOREIGN KEY (DiscountPlanID) REFERENCES DiscountPlan(DiscountPlanID),

FOREIGN KEY (CurrencyName) REFERENCES ExchangeRate(CurrencyName));

CREATE TABLE Sale (

BlankNumber bigint(19) NOT NULL,

CustomerID bigint(19) NOT NULL,

CurrencyName char(4) NOT NULL,

SaleType integer(1) NOT NULL,

CommissonRate numeric(4, 2) NOT NULL,

SaleDate date NOT NULL,

DueDate date NOT NULL,

Cost numeric(8, 2) NOT NULL,

CostInUSD numeric(8, 2),

Tax numeric(8, 2) NOT NULL,

AdditionalTax numeric(8, 2),

PRIMARY KEY (BlankNumber),

FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID),

FOREIGN KEY (BlankNumber) REFERENCES Blank(BlankNumber))

FOREIGN KEY (CurrencyName) REFERENCES ExchangeRate(CurrencyName));

CREATE TABLE Transcation (

TranscationID bigint(19) NOT NULL PRIMARY KEY AUTO\_INCREMENT,

BlankNumber bigint(19) NOT NULL,

CurrencyName char(4) NOT NULL,

AmountPaid numeric(10, 2) NOT NULL,

AmountPaidInUSD numeric(10, 2),

TransactionDate date NOT NULL,

PaymentType integer(1) NOT NULL,

CardNumber bigint(19),

ChequeNumber bigint(19),

FOREIGN KEY (BlankNumber) REFERENCES Sale(BlankNumber),

FOREIGN KEY (CurrencyName) REFERENCES ExchangeRate(CurrencyName));

CREATE TABLE Refund (

RefundID bigint(19) NOT NULL PRIMARY KEY AUTO\_INCREMENT,

TranscationID bigint(19) NOT NULL,

RefundDate date NOT NULL,

LocalCurrency integer(10) NOT NULL,

FOREIGN KEY (TranscationID) REFERENCES Transcation(TranscationID));

/\* 2 INSERT Statements \*/

INSERT INTO DiscountPlan VALUES (

DEFAULT,

0,

4.5

);

INSERT INTO ExchangeRate VALUES (

'GBP',

1.22,

'£'

);

INSERT INTO Customer VALUES (

DEFAULT,

NULL,

'GBP',

'John',

'Doe',

'03648318215',

'JohnDoe@gmail.com',

'1965-05-12',

'RG3 2IK',

'233',

'Albert Road',

NULL,

0,

'2023-03-01',

'JohnD'

);

/\* 2 UPDATE STATEMENTS \*/

UPDATE Customer

SET DiscountPlanID = 1

WHERE CustomerID = 1;

UPDATE Customer

SET Postcode = 'PG4 4JK', HouseNumber = '5A', StreetName = 'St. Johns Street'

WHERE CustomerID = 1;

/\* 2 SELECT STATEMENTS \*/

SELECT Postcode, HouseNumber, StreetName

FROM Customer

WHERE DateOfBirth BETWEEN '1960-01-01' AND '1975-01-01';

SELECT COUNT(CustomerID) AS CustomersWithoutDiscountPlans

FROM Customer

WHERE DiscountPlanID IS NULL;

/\* 2 DELETE STATEMENTS \*/

DELETE FROM Customer

WHERE CustomerID = 1;

DELETE FROM DiscountPlan

WHERE DiscountPlanID = 1;

/\* SQL DML statements which are needed to create 2 non-trivial reports pertaining to the case-study \*/

/\* Report 1 would be an Interline Sales Report an Report 2 would be a Domestic Sales Report \*/

INSERT INTO Staff VALUES (

DEFAULT,

'GBP',

0,

3.50,

'Percy',

'Benedict',

'0421135672',

'Percy.Benedict@ATS.com',

'1997-03-21',

'AA1 1BV',

'120A',

'St. Peter Street',

0x00,

0x00

);

INSERT INTO Customer VALUES (

1,

NULL,

'GBP',

'John',

'Doe',

'03648318215',

'JohnDoe@gmail.com',

'1965-05-12',

'RG3 2IK',

'233',

'Albert Road',

NULL,

0,

'2023-03-01',

'JohnD'

);

INSERT INTO BlankType VALUES

(444, 'Two leg interline journey.'),

(101, 'Single leg domestic journey.');

INSERT INTO Blank VALUES

(4441023489, 1, 444, 'London to Seoul, Seoul to Manila', 0, 0, '2023-03-03', '2023-03-04', NULL),

(4444343235, 1, 444, 'London to Tokoyo, Tokoyo to Dublin', 0, 0, '2023-03-03', '2023-03-04', NULL),

(4441344491, 1, 444, 'London to Pairs, Paris to Lyon', 0, 0, '2023-03-03', '2023-03-04', NULL),

(1015003455, 1, 101, 'Liverpool to London', 0, 0, '2023-03-04', '2023-03-04', NULL),

(1014044431, 1, 101, 'Manchester to Luton', 0, 0, '2023-03-04', '2023-03-04', NULL);

INSERT INTO Sale VALUES

(4441023489, 1, 'GBP', 1, 3.50, '2023-02-01', '2023-03-02', 1000.50, 200.00, 30.00),

(4444343235, 1, 'GBP', 1, 3.50, '2023-02-04', '2023-03-05', 500.00, 100.00, 56.00),

(4441344491, 1, 'GBP', 1, 3.50, '2023-02-05', '2023-03-06', 350.50, 50.00, 20.00),

(1015003455, 1, 'GBP', 0, 3.50, '2023-02-25', '2023-03-26', 187.40, 65.00, NULL),

(1014044431, 1, 'GBP', 0, 3.50, '2023-02-25', '2023-03-26', 187.00, 75.00, NULL);

INSERT INTO Transcation VALUES

(1, 4441023489, 'GBP', 1230.50, 1501.21, '2023-02-04', 0, NULL, NULL),

(2, 4444343235, 'GBP', 656.00, 800.32, '2023-02-06', 1, 353435218, NULL),

(3, 4441344491, 'GBP', 420.00, 420.00, '2023-02-08', 0, NULL, NULL),

(4, 1015003455, 'GBP', 252.40, 512.40, '2023-02-25', 0, NULL, NULL),

(5, 1014044431, 'GBP', 262.00, 314.04, '2023-02-27', 3, NULL, 978424910);