SQL

Creating tables:

(1) Students

(2) Accounts

(3) Transactions

(4) Transfers

(5) Users

(1) Students

```sql
CREATE TABLE Students
(
        StudentID INTEGER IDENTITY(1002001, 1) NOT NULL,
        FirstName NVARCHAR(50) NOT NULL,
        LastName NVARCHAR(50) NOT NULL,
        Email NVARCHAR(80) NOT NULL,
        PhoneNumber NVARCHAR(30) NOT NULL,
        Address1 NVARCHAR(50) NOT NULL,
        Address2 NVARCHAR(50) NOT NULL,
        City NVARCHAR(50) NOT NULL,
        County NVARCHAR(50) NOT NULL,
        CONSTRAINT PK_Students PRIMARY KEY(StudentID)
)

GO
```

(2) Accounts

```sql
CREATE TABLE Accounts
(
    AccountNumber  INTEGER IDENTITY (10000001, 1) NOT NULL,
    AccountType NVARCHAR (20) NOT NULL,
    SortCode NVARCHAR (10) NOT NULL,
    InitialBalance INTEGER NOT NULL,
    CurrentBalance INTEGER NOT NULL DEFAULT 0,
    OverdraftLimit INTEGER NOT NULL,
    StudentID INTEGER NOT NULL,
    CONSTRAINT PK_Accounts PRIMARY KEY (AccountNumber),
    CONSTRAINT FK_Students FOREIGN KEY (StudentID) REFERENCES Students(StudentID)
);
```

TO ALTER:
```sql
ALTER TABLE [dbo].[Accounts] ADD CurrentBalance INT NOT NULL DEFAULT(0);


CREATE TABLE [dbo].[Accounts] (
    [AccountNumber]  INT          IDENTITY (10000001, 1) NOT NULL,
    [AccountType]    NVARCHAR (20) NOT NULL,
    [SortCode]       NVARCHAR (10) NOT NULL,
    [InitialBalance] INT          NOT NULL,
    [CurrentBalance] INT          DEFAULT ((100)) NOT NULL,
    [OverdraftLimit] INT          NOT NULL,
    [StudentID]      INT          NOT NULL,
```

```sql
        CONSTRAINT [PK_Accounts] PRIMARY KEY CLUSTERED ([AccountNumber] ASC),
        CONSTRAINT [FK_Students] FOREIGN KEY ([StudentID]) REFERENCES [dbo].[Students]
([StudentID])
);
```

(3) Transactions
```sql
CREATE TABLE Transactions
(
        TransactionNumber INTEGER IDENTITY(1, 1) NOT NULL,
        TransactionType NVARCHAR(50) NOT NULL,
        AccountNumber INTEGER NOT NULL,
        DateTimeOfTransaction DATETIME NOT NULL,
        TransactionAmmount INTEGER NOT NULL,
        Balance INTEGER NOT NULL,
        CONSTRAINT PK_Transactions PRIMARY KEY(TransactionNumber),
        CONSTRAINT FK_Accounts FOREIGN KEY(AccountNumber)
        REFERENCES Accounts(AccountNumber)
)
GO
```

(4) Transfers
```sql
CREATE TABLE Transfers
(
        TransferRefNumber INTEGER IDENTITY(1, 1) NOT NULL,
        RecepientName NVARCHAR(100) NOT NULL,
        DebitedAccount INTEGER NOT NULL,
        TransactionNumber INTEGER NOT NULL,
        DestinationSortCode NVARCHAR(10) NOT NULL,
        DestinationAccountNumber INTEGER NOT NULL,
        TransferAmmount INTEGER NOT NULL,
        DateTimeOfTransfer DATETIME NOT NULL,
        TransferDescription NVARCHAR(200) NOT NULL,
        CONSTRAINT PK_Transfers PRIMARY KEY(TransferRefNumber),
        CONSTRAINT FK_AccountsFromTransfers FOREIGN KEY(DebitedAccount)
        REFERENCES Accounts(AccountNumber),
        CONSTRAINT FK_Transactions FOREIGN KEY(TransactionNumber)
        REFERENCES Transactions(TransactionNumber),
        CONSTRAINT FK_AccountsDestination FOREIGN KEY(DestinationAccountNumber)
        REFERENCES Accounts(AccountNumber)
)
GO
```

(5) Users
```sql
CREATE TABLE Users
(
        UserID INTEGER IDENTITY(1, 1) NOT NULL,
        UserName NVARCHAR(40) NOT NULL,
        UserPassword NVARCHAR(40) NOT NULL
        CONSTRAINT PK_Users PRIMARY KEY(UserID)
)
GO
```

Populating tables

(1) Users:
```sql
INSERT INTO Users(UserName, UserPassword)
VALUES
('Vasiok', 'ssd5'),
('Emma', '12345')
```

(2) Students:
```sql
INSERT INTO Students(FirstName, LastName, Email, PhoneNumber, Address1, Address2,
City, County)
VALUES
('Kevin', 'Donohue', 'kevin123@gmail.com', '085-2130214', '51  Foxdene', 'Avenue',
'Lucan', 'Dublin'),
('Michael', 'Duffy', 'mikediver@gmail.com', '087-9217304', '2 Foxborough', 'Road',
'Lucan', 'Dublin'),
('David', 'Kingston', 'dvd12@yahoo.com', '086-2513654', '14 Moy Glass', 'View',
'Clondalin', 'Dublin'),
('Steven', 'Johns', 'stvthestar@gmail.com', '085-3219852', '21 Arthur Griffeen',
'Park', 'Lucan', 'Dublin'),

('Harnaik', 'Dhoot', 'dhoote@gmail.com', '085-2130214', '14 Aungier', 'Street',
'Dublin 2', 'Dublin')
```

(3) Accounts:
```sql
INSERT INTO Accounts(AccountType, SortCode, InitialBalance, CurrentBalance,
OverdraftLimit, StudentID)
VALUES
('current', '101010', 2000, 2500, 5100, 1002015),
('saving', '101010', 20000, 19750, 5100, 1002015),
('current', '101010', 3000, 3300, 5100, 1002016),
('current', '101010', 30000, 29750, 5100, 1002017),
('current', '101010', 25000, 25000, 5100, 1002018),
('external', '101010', 2000, 2000, 5100, 1002019)
```

(4) Transactions:
```sql
INSERT INTO Transactions(TransactionType, AccountNumber, DateTimeOfTransaction,
TransactionAmmount, Balance)
VALUES
('credit', 10000016, '2015-01-12 12:35:29.123', 500, 2500),
('debit', 10000017, '2015-02-10 10:15:19.456', 250, 19750),
('credit', 10000018, '2015-03-02 16:32:28.789', 300, 3300),
('debit', 10000019, '2015-03-10 22:02:42.850', 250, 29750)
```

(5) Transfers:
```sql
INSERT INTO Transfers(RecepientName, DebitedAccount, TransactionNumber,
DestinationSortCode, DestinationAccountNumber, TransferAmmount, DateTimeOfTransfer,
TransferDescription)
VALUES
('Kevin Donohue', 10000019, 74, '101010', 10000016, 10000, '2015-03-16 11:46:55.380',
'Transfer money to my friend')
```

```
('Kevin Donohue', 10000016, 76, '101010', 10000017, 10000, '2015-03-16 11:47:20.923',
'Transfer to my savings')
```

```
('Kevin Donohue', 10000016, 76, '101010', 10000017, 10000, '2015-03-16 11:47:20.923',
'Transfer to my savings')
```