

Exercise 1

Function for the first part without feet's:

```
1 CREATE OR REPLACE FUNCTION send_money_1(from_id INTEGER, to_id INTEGER, delta INTEGER)
2 RETURNS INTEGER LANGUAGE plpgsql AS
3 $$
4 BEGIN
5
6     UPDATE account SET credit = credit - delta WHERE id = from_id;
7     UPDATE account SET credit = credit + delta WHERE id = to_id;
8     RETURN 1;
9 END;
10 $$;
11
12
```

Transactions:

```
1 BEGIN TRANSACTION;
2     SELECT send_money_1(1,3, 500);
3 ROLLBACK;
4
5 BEGIN TRANSACTION;
6     SELECT send_money_1(2,1, 500);
7 ROLLBACK;
8
9 BEGIN TRANSACTION;
10    SELECT send_money_1(2,3, 500);
11 ROLLBACK;
12
13 SELECT sum(credit) FROM accounts;
14
```

Function for the second part with fees:

```
1 CREATE OR REPLACE FUNCTION send_money_2(from_id INTEGER, to_id INTEGER, delta INTEGER)
2 RETURNS INTEGER LANGUAGE plpgsql AS
3 $$
4 BEGIN
5     IF (SELECT bank_name FROM accounts WHERE id = from_id) = (SELECT bank_name FROM accounts WHERE id = from_id)
6     THEN
7         UPDATE accounts SET credit = credit - delta - 30 WHERE id = from_id;
8         UPDATE accounts SET credit = credit + delta WHERE id = to_id;
9         UPDATE accounts SET credit = credit + 30 WHERE name = 'Fees';
10    ELSE
11        UPDATE accounts SET credit = credit - delta WHERE id = from_id;
12        UPDATE accounts SET credit = credit + delta WHERE id = to_id;
13    END IF;
14    RETURN 1;
15 END;
16 $$;
```

List of transaction the same as previous excluding called function. Here it is *send_money_2*

Updated function with inserting transactions

```
1 CREATE OR REPLACE FUNCTION send_money_3(from_id INTEGER, to_id INTEGER, delta INTEGER)
2 RETURNS INTEGER LANGUAGE plpgsql AS
3 $$
4 BEGIN
5     IF (SELECT bank_name FROM accounts WHERE id = from_id) = (SELECT bank_name FROM accounts WHERE id = from_id)
6     THEN
7         UPDATE accounts SET credit = credit - delta - 30 WHERE id = from_id;
8         UPDATE accounts SET credit = credit + delta WHERE id = to_id;
9         UPDATE accounts SET credit = credit + 30 WHERE name = 'Fees';
10        INSERT INTO ledger (fromid, toid, fee, amount, transaction_date_time) VALUES (from_id, to_id, 30, delta, (SELECT LOCALTIMESTAMP));
11    ELSE
12        UPDATE accounts SET credit = credit - delta WHERE id = from_id;
13        UPDATE accounts SET credit = credit + delta WHERE id = to_id;
14        INSERT INTO ledger (fromid, toid, fee, amount, transaction_date_time) VALUES (from_id, to_id, 30, delta, (SELECT LOCALTIMESTAMP));
15    END IF;
16    RETURN 1;
17 END;
18 $$;
```

List of transaction the same as previous excluding called function. Here it is *send_money_2*