**Exercise 3: Stored Procedures**

CREATE TABLE customers (

customer\_id INTEGER PRIMARY KEY,

name VARCHAR(50),

age INTEGER,

balance NUMERIC(12,2),

isvip VARCHAR(5)

);

CREATE TABLE loans (

loan\_id INTEGER PRIMARY KEY,

customer\_id INTEGER REFERENCES customers(customer\_id),

interest\_rate NUMERIC(5,2),

due\_date DATE

);

CREATE TABLE employees (

employee\_id INTEGER PRIMARY KEY,

name VARCHAR(50),

department\_id INTEGER,

salary NUMERIC(10,2)

);

CREATE TABLE accounts (

account\_id INTEGER PRIMARY KEY,

customer\_id INTEGER REFERENCES customers(customer\_id),

account\_type VARCHAR(20),

balance NUMERIC(12,2)

);

INSERT INTO customers VALUES (1, 'Alice', 65, 15000.00, 'FALSE');

INSERT INTO customers VALUES (2, 'Bob', 45, 9500.00, 'FALSE');

INSERT INTO customers VALUES (3, 'Charlie', 70, 12000.00, 'FALSE');

INSERT INTO customers VALUES (4, 'Diana', 30, 10500.00, 'FALSE');

INSERT INTO loans VALUES (101, 1, 8.5, CURRENT\_DATE + 10);

INSERT INTO loans VALUES (102, 2, 7.9, CURRENT\_DATE + 40);

INSERT INTO loans VALUES (103, 3, 9.0, CURRENT\_DATE + 5);

INSERT INTO loans VALUES (104, 4, 7.5, CURRENT\_DATE - 3);

INSERT INTO loans VALUES (105, 1, 8.0, CURRENT\_DATE + 20);

INSERT INTO employees VALUES (201, 'Ravi', 10, 40000.00);

INSERT INTO employees VALUES (202, 'Neha', 10, 45000.00);

INSERT INTO employees VALUES (203, 'Anil', 20, 50000.00);

INSERT INTO accounts VALUES (1001, 1, 'SAVINGS', 5000.00);

INSERT INTO accounts VALUES (1002, 2, 'SAVINGS', 3000.00);

INSERT INTO accounts VALUES (1003, 3, 'CURRENT', 8000.00);

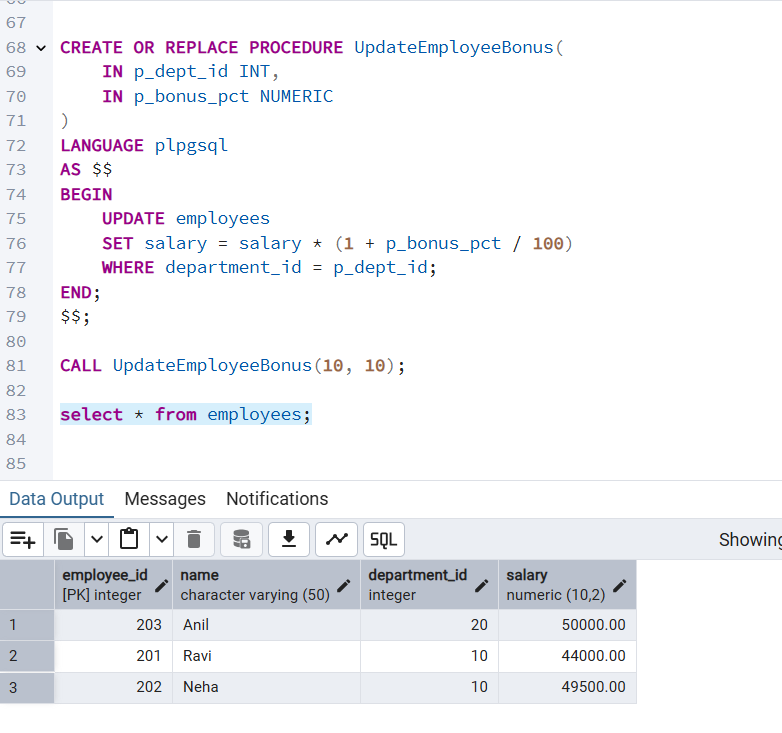
INSERT INTO accounts VALUES (1004, 4, 'SAVINGS', 2000.00);

**Scenario 1:**

A screenshot of a computer

Description automatically generated

**Scenario 2:**



**Scenario 3:**

CREATE OR REPLACE PROCEDURE TransferFunds(

IN p\_from\_acct INT,

IN p\_to\_acct INT,

IN p\_amount NUMERIC

)

LANGUAGE plpgsql

AS $$

DECLARE

v\_balance NUMERIC;

BEGIN

IF p\_amount <= 0 THEN

RAISE EXCEPTION 'Amount must be greater than zero.';

END IF;

SELECT balance INTO v\_balance FROM accounts WHERE account\_id = p\_from\_acct FOR UPDATE;

IF v\_balance < p\_amount THEN

RAISE EXCEPTION 'Insufficient balance in source account.';

END IF;

UPDATE accounts SET balance = balance - p\_amount WHERE account\_id = p\_from\_acct;

UPDATE accounts SET balance = balance + p\_amount WHERE account\_id = p\_to\_acct;

END;

$$;

CALL TransferFunds(1001, 1002, 1000);

select \* from accounts;

