**Exercise 3: Stored Procedures**

**Scenario 1:** The bank needs to process monthly interest for all savings accounts.

**Question:** Write a stored procedure **ProcessMonthlyInterest** that calculates and updates the balance of all savings accounts by applying an interest rate of 1% to the current balance.

**Program:**

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

  UPDATE Accounts

  SET Balance = Balance + (Balance \* 0.01)

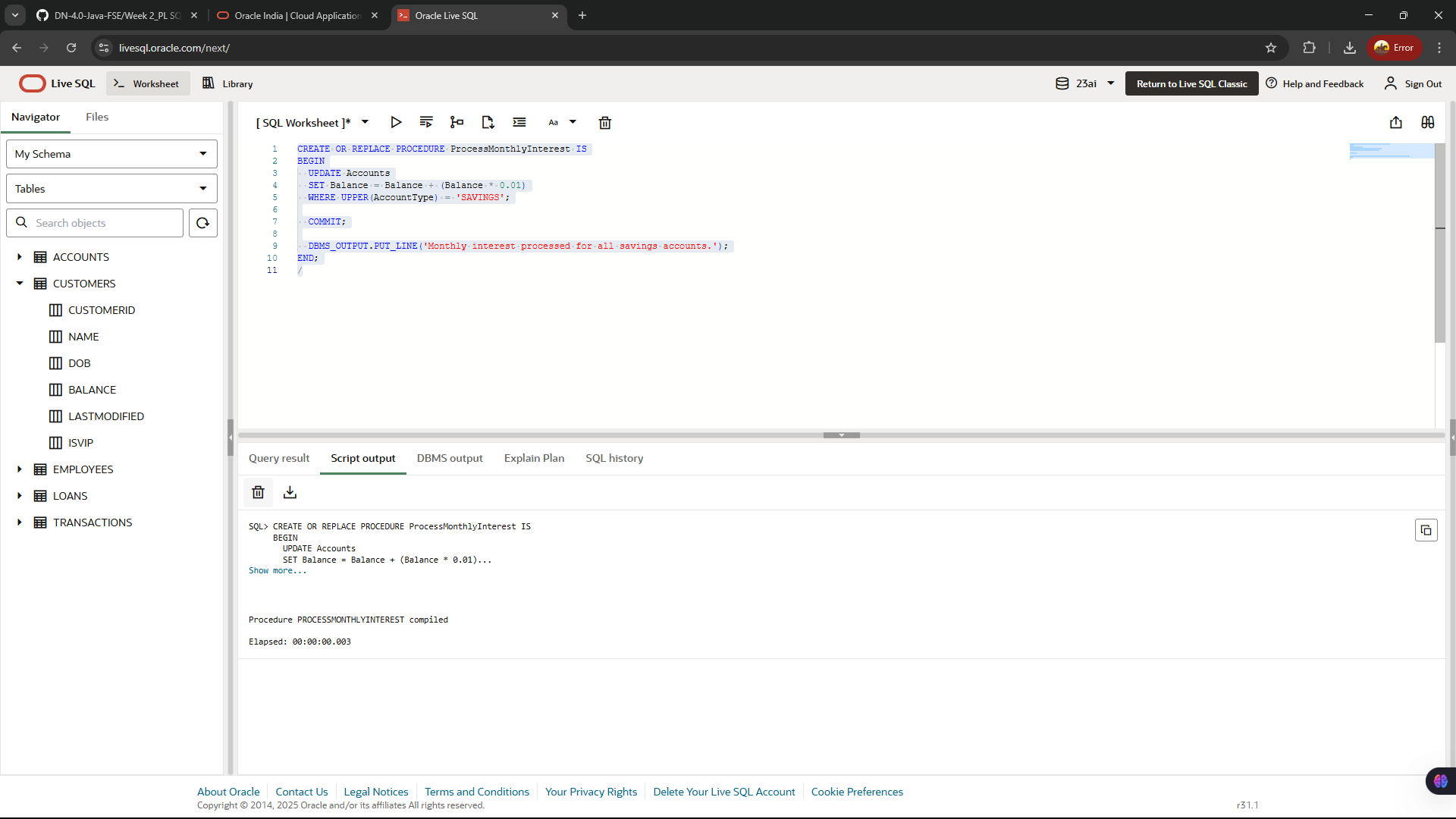
  WHERE UPPER(AccountType) = 'SAVINGS';

  COMMIT;

  DBMS\_OUTPUT.PUT\_LINE('Monthly interest processed for all savings accounts.');

END;

/

**Output:** 

**To Call:**

SET SERVEROUTPUT ON;

BEGIN

ProcessMonthlyInterest;

END;

/

**Scenario 2:** The bank wants to implement a bonus scheme for employees based on their performance.

* + **Question:** Write a stored procedure **UpdateEmployeeBonus** that updates the salary of employees in a given department by adding a bonus percentage passed as a parameter.

**Program:**

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

  p\_department IN VARCHAR2,

  p\_bonus\_percent IN NUMBER

) IS

BEGIN

  UPDATE Employees

  SET Salary = Salary + (Salary \* (p\_bonus\_percent / 100))

  WHERE UPPER(Department) = UPPER(p\_department);

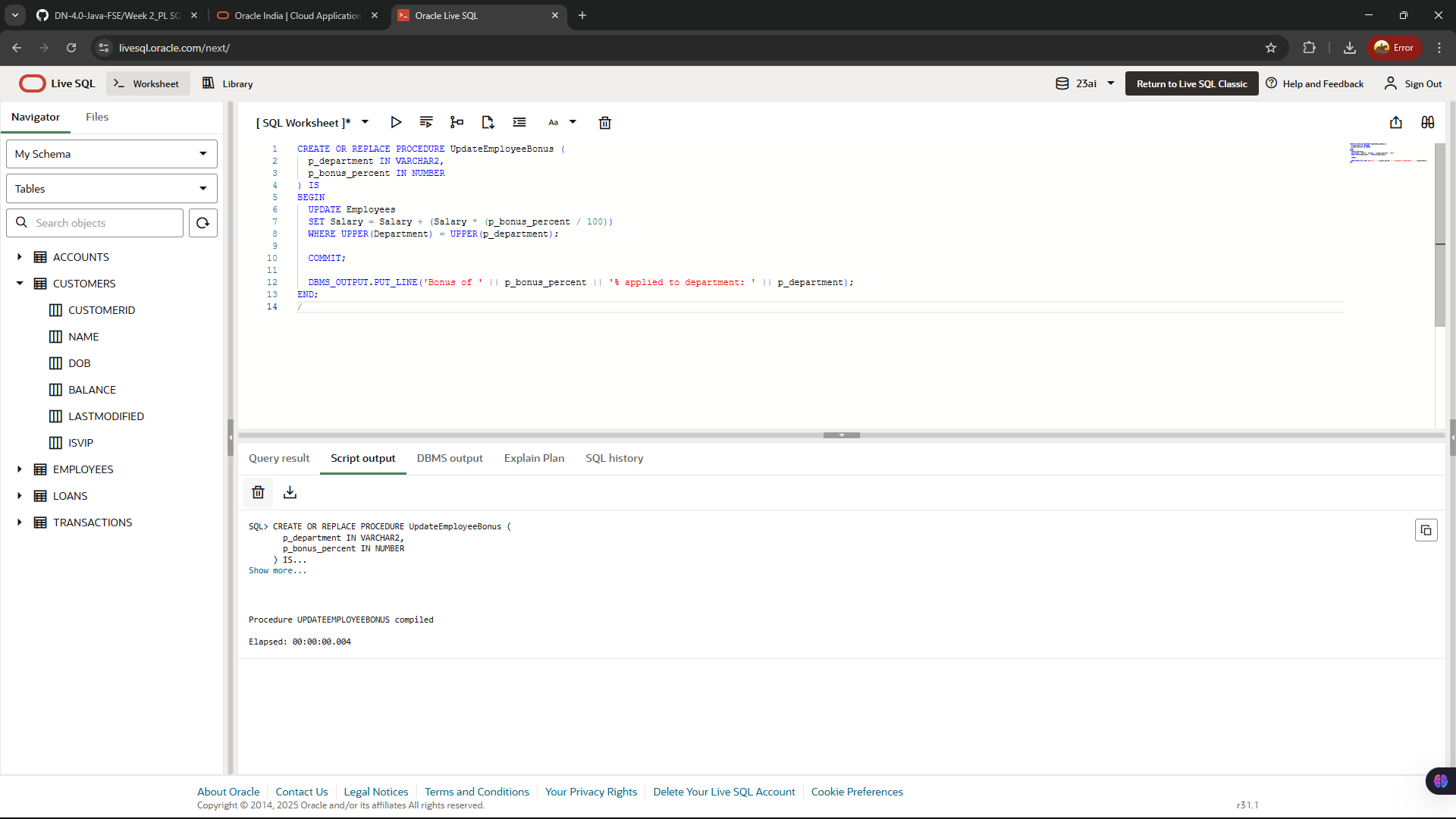
  COMMIT;

  DBMS\_OUTPUT.PUT\_LINE('Bonus of ' || p\_bonus\_percent || '% applied to department: ' || p\_department);

END;

/

**Output:**



**To Call:**

SET SERVEROUTPUT ON;

BEGIN

-- Apply 15% bonus to all employees in the 'Finance' department

UpdateEmployeeBonus('Finance', 15);

END;

/

**Scenario 3:** Customers should be able to transfer funds between their accounts.

* + **Question:** Write a stored procedure **TransferFunds** that transfers a specified amount from one account to another, checking that the source account has sufficient balance before making the transfer.

**Program:**

CREATE OR REPLACE PROCEDURE TransferFunds (

  p\_source\_account\_id      IN NUMBER,

  p\_destination\_account\_id IN NUMBER,

  p\_amount                 IN NUMBER

) IS

  v\_source\_balance NUMBER;

BEGIN

  SELECT Balance

  INTO v\_source\_balance

  FROM Accounts

  WHERE AccountID = p\_source\_account\_id

  FOR UPDATE;

  IF v\_source\_balance < p\_amount THEN

    RAISE\_APPLICATION\_ERROR(-20001, 'Insufficient balance in source account.');

  END IF;

  UPDATE Accounts

  SET Balance = Balance - p\_amount

  WHERE AccountID = p\_source\_account\_id;

  UPDATE Accounts

  SET Balance = Balance + p\_amount

  WHERE AccountID = p\_destination\_account\_id;

  COMMIT;

  DBMS\_OUTPUT.PUT\_LINE('Transferred ' || p\_amount ||

                       ' from Account ' || p\_source\_account\_id ||

                       ' to Account ' || p\_destination\_account\_id);

EXCEPTION

  WHEN NO\_DATA\_FOUND THEN

    RAISE\_APPLICATION\_ERROR(-20002, 'One or both account IDs are invalid.');

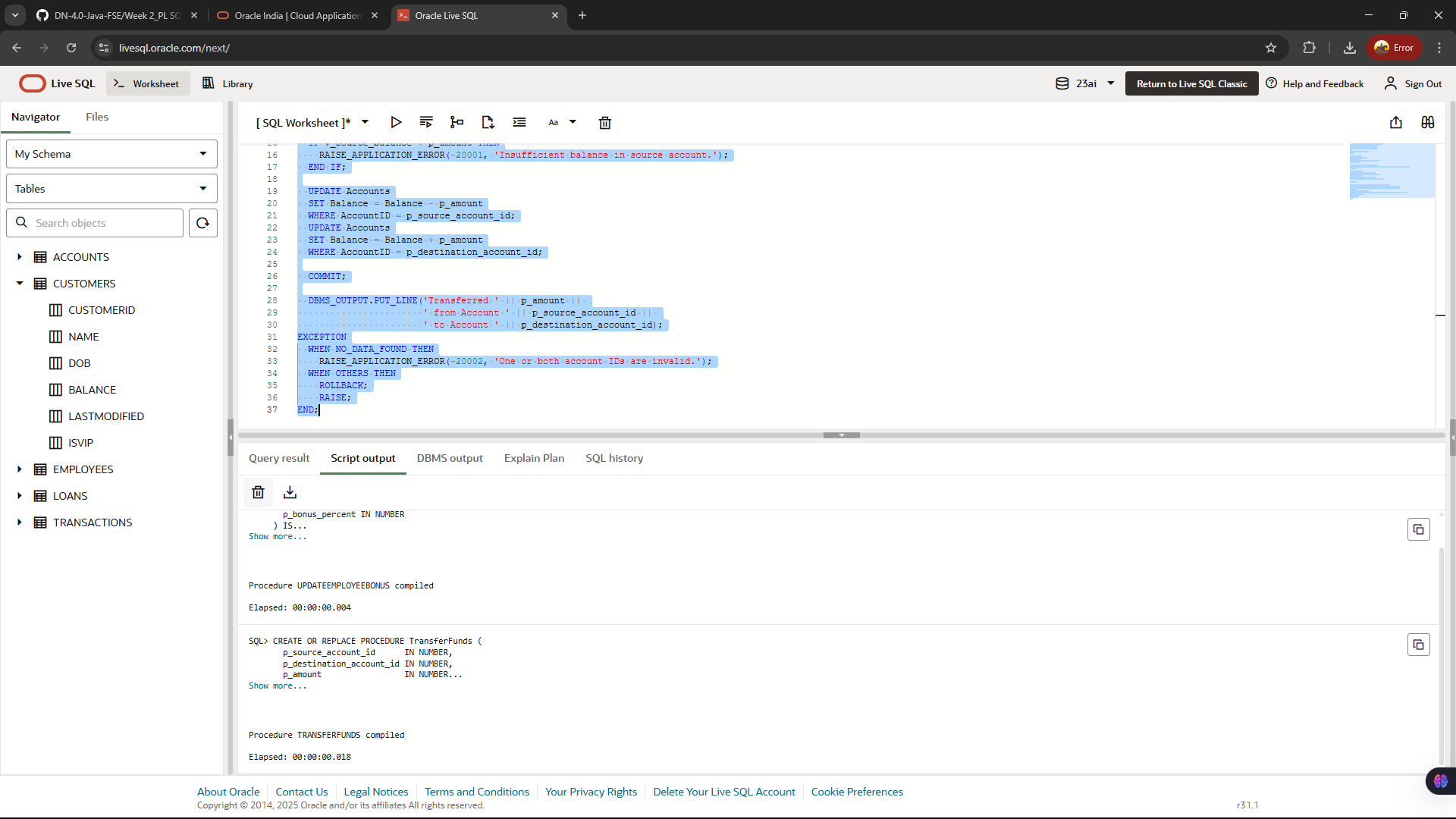
  WHEN OTHERS THEN

    ROLLBACK;

    RAISE;

END;

**Output:**



**To Call:**

SET SERVEROUTPUT ON;

BEGIN

-- Transfer ₹500 from account 101 to account 202

TransferFunds(101, 202, 500);

END;

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