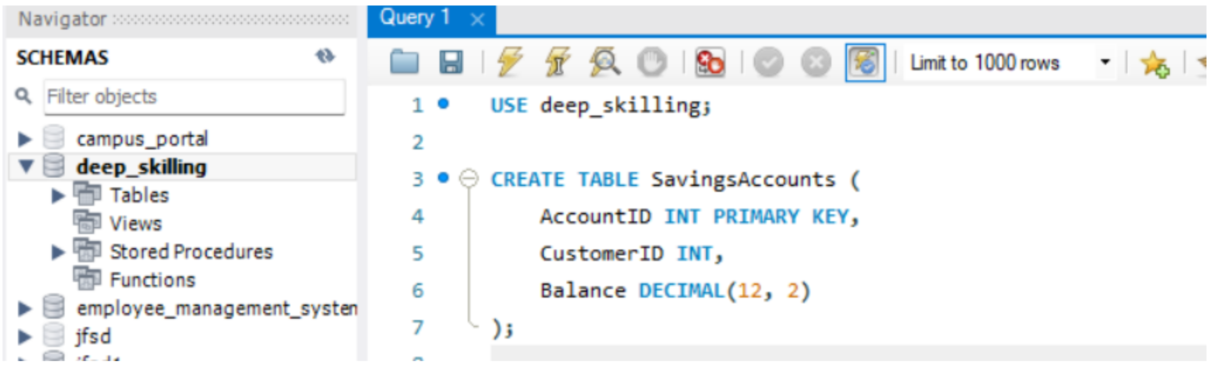
Exercise 3: Stored Procedures
FROM FILE PLSQL Exercises

Create table Savingaccount:

Code:

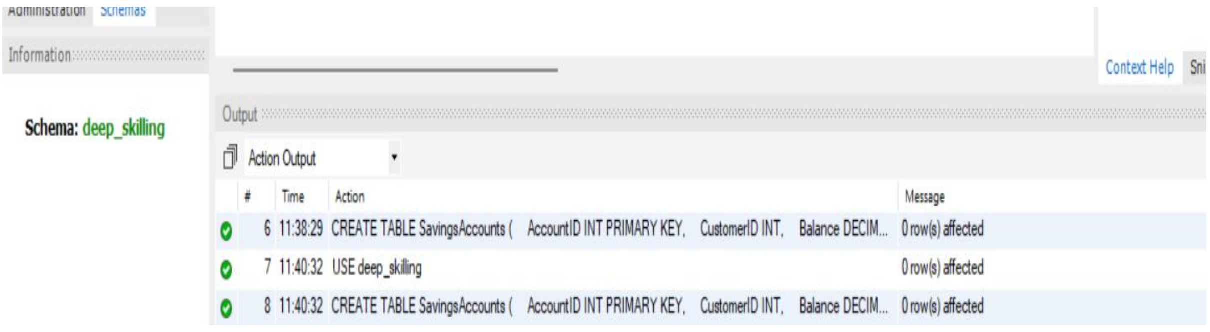
```
CREATE TABLE SavingsAccounts (
    AccountID INT PRIMARY KEY,
    CustomerID INT,
    Balance DECIMAL(12, 2)
);
```

Practice screen from Mysql workbench



```
USE deep_skilling;

CREATE TABLE SavingsAccounts (
    AccountID INT PRIMARY KEY,
    CustomerID INT,
    Balance DECIMAL(12, 2)
);
```

Output screen:



```
#  Time      Action                                                                                    Message
6  11:38:29  CREATE TABLE SavingsAccounts (   AccountID INT PRIMARY KEY,   CustomerID INT,   Balance DECIM...  0 row(s) affected
7  11:40:32  USE deep_skilling                                                                         0 row(s) affected
8  11:40:32  CREATE TABLE SavingsAccounts (   AccountID INT PRIMARY KEY,   CustomerID INT,   Balance DECIM...  0 row(s) affected
```

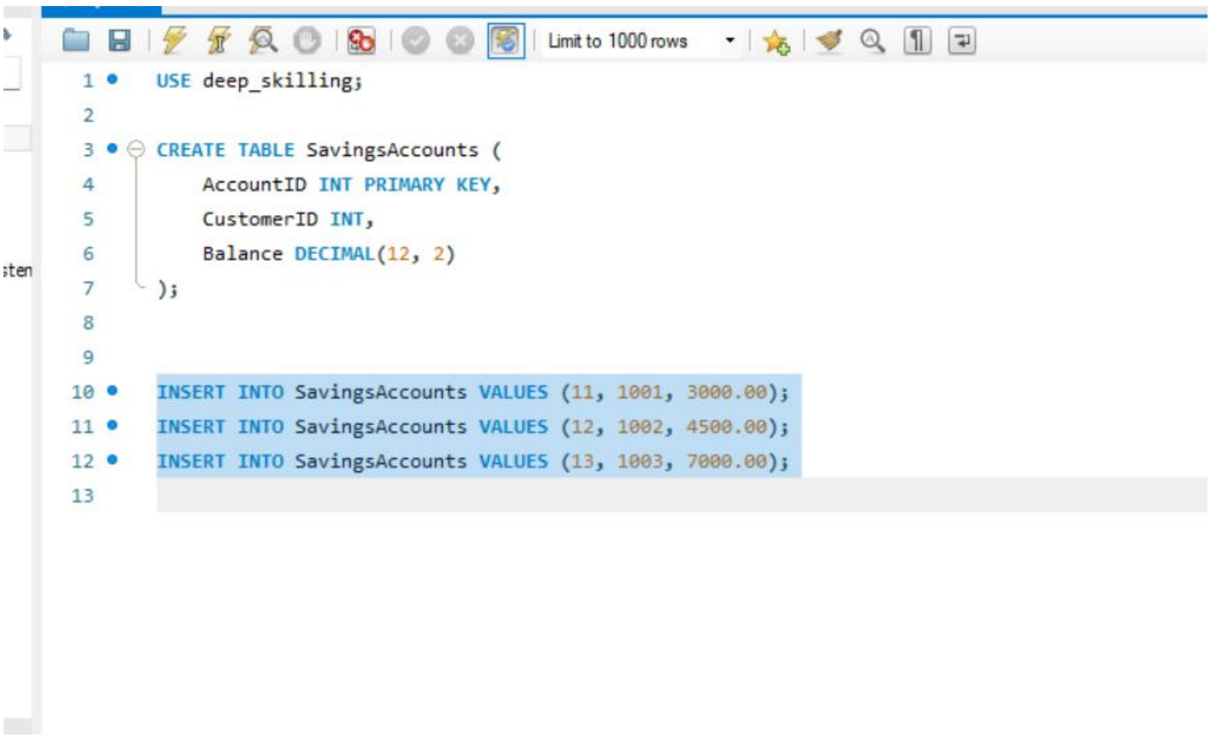
Insert the data into table code:

INSERT INTO SavingsAccounts VALUES (11, 1001, 3000.00);

INSERT INTO SavingsAccounts VALUES (12, 1002, 4500.00);

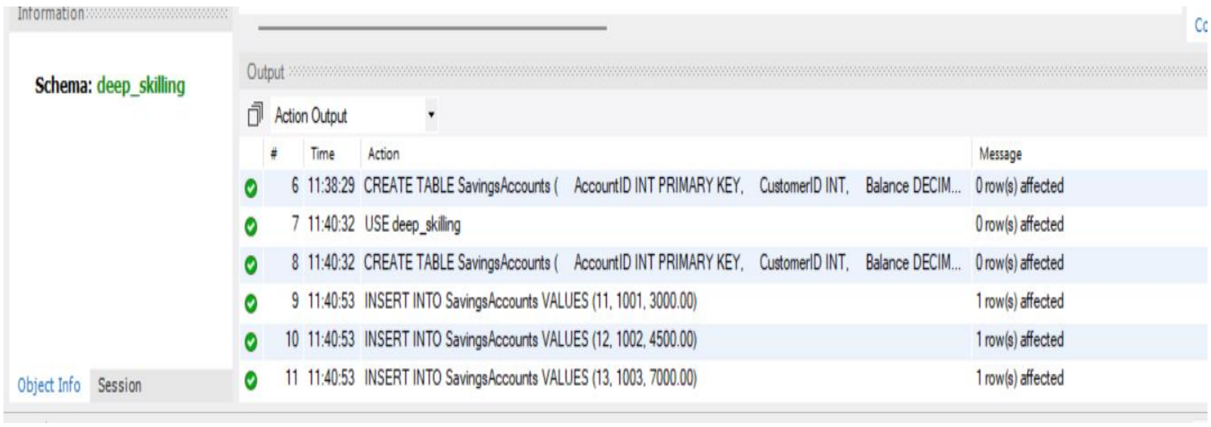
INSERT INTO SavingsAccounts VALUES (13, 1003, 7000.00);

Practice screen from Mysql workbench:



```
USE deep_skilling;

CREATE TABLE SavingsAccounts (
    AccountID INT PRIMARY KEY,
    CustomerID INT,
    Balance DECIMAL(12, 2)
);


INSERT INTO SavingsAccounts VALUES (11, 1001, 3000.00);
INSERT INTO SavingsAccounts VALUES (12, 1002, 4500.00);
INSERT INTO SavingsAccounts VALUES (13, 1003, 7000.00);
```

Output screen:



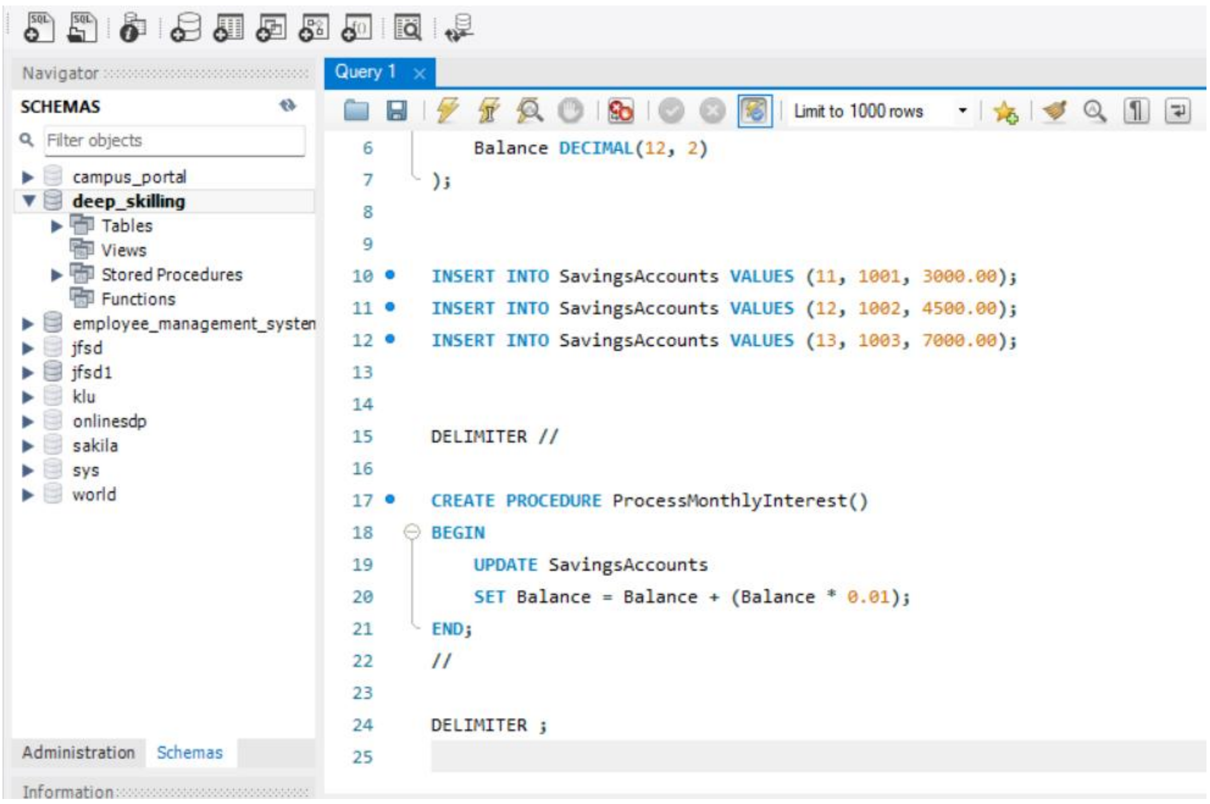
Schema: deep_skilling

	#	Time	Action	Message
✓	6	11:38:29	CREATE TABLE SavingsAccounts (AccountID INT PRIMARY KEY, CustomerID INT, Balance DECIM...	0 row(s) affected
✓	7	11:40:32	USE deep_skilling	0 row(s) affected
✓	8	11:40:32	CREATE TABLE SavingsAccounts (AccountID INT PRIMARY KEY, CustomerID INT, Balance DECIM...	0 row(s) affected
✓	9	11:40:53	INSERT INTO SavingsAccounts VALUES (11, 1001, 3000.00)	1 row(s) affected
✓	10	11:40:53	INSERT INTO SavingsAccounts VALUES (12, 1002, 4500.00)	1 row(s) affected
✓	11	11:40:53	INSERT INTO SavingsAccounts VALUES (13, 1003, 7000.00)	1 row(s) affected

In Stored procedures :

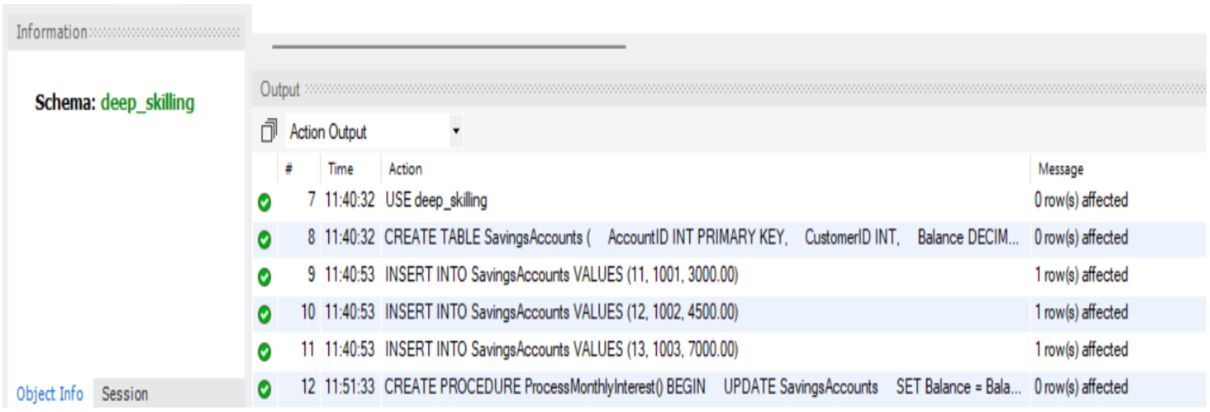
```
DELIMITER //

CREATE PROCEDURE ProcessMonthlyInterest()

BEGIN

    UPDATE SavingsAccounts

    SET Balance = Balance + (Balance * 0.01);

END;

//

DELIMITER ;
```

Practice screen from Mysql workbench:



```
    Balance DECIMAL(12, 2)
);


INSERT INTO SavingsAccounts VALUES (11, 1001, 3000.00);
INSERT INTO SavingsAccounts VALUES (12, 1002, 4500.00);
INSERT INTO SavingsAccounts VALUES (13, 1003, 7000.00);


DELIMITER //

CREATE PROCEDURE ProcessMonthlyInterest()
BEGIN
    UPDATE SavingsAccounts
    SET Balance = Balance + (Balance * 0.01);
END;
//

DELIMITER ;
```

Output screen:



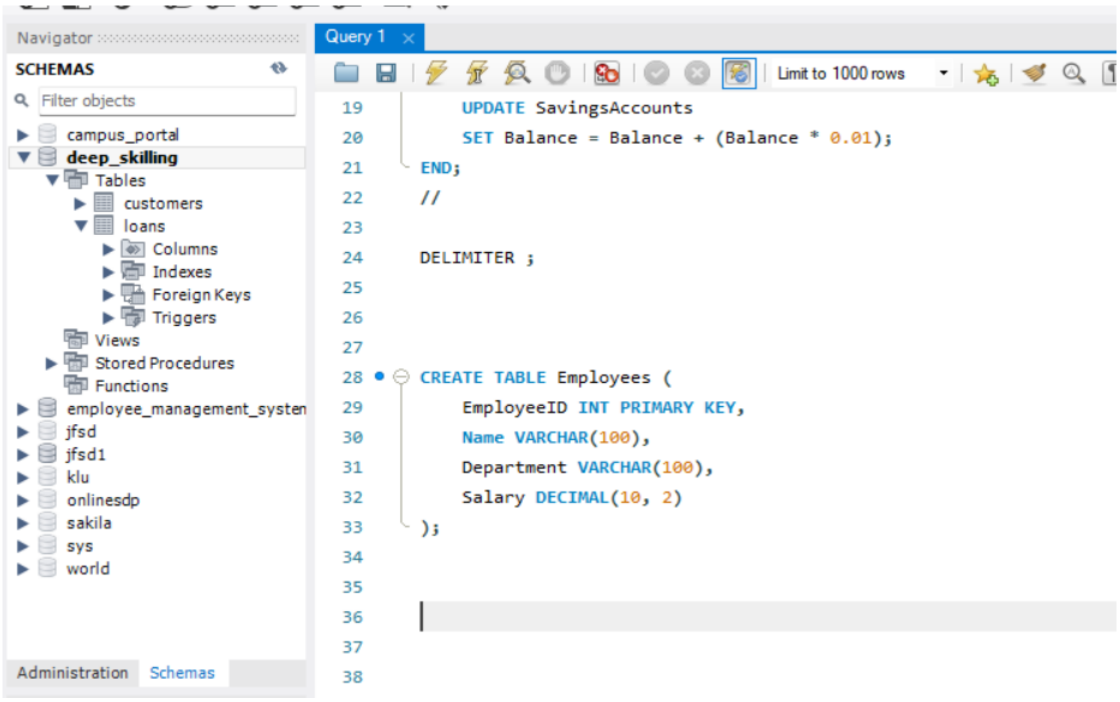
Schema: deep_skilling

```
#   Time      Action                                                                                              Message
7   11:40:32  USE deep_skilling                                                                                   0 row(s) affected
8   11:40:32  CREATE TABLE SavingsAccounts (    AccountID INT PRIMARY KEY,    CustomerID INT,    Balance DECIM...  0 row(s) affected
9   11:40:53  INSERT INTO SavingsAccounts VALUES (11, 1001, 3000.00)                                              1 row(s) affected
10  11:40:53  INSERT INTO SavingsAccounts VALUES (12, 1002, 4500.00)                                              1 row(s) affected
11  11:40:53  INSERT INTO SavingsAccounts VALUES (13, 1003, 7000.00)                                              1 row(s) affected
12  11:51:33  CREATE PROCEDURE ProcessMonthlyInterest() BEGIN    UPDATE SavingsAccounts    SET Balance = Bala...  0 row(s) affected
```

Create Employees table

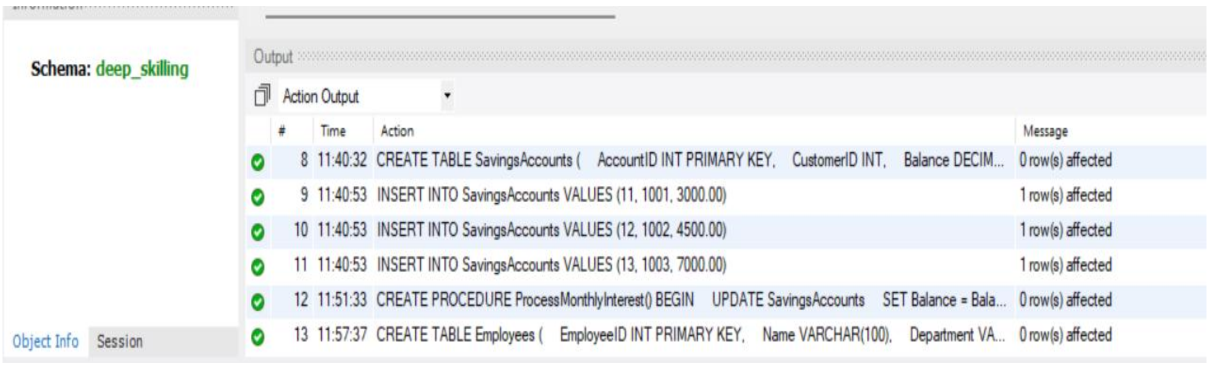
Code:

```
CREATE TABLE Employees (
    EmployeeID INT PRIMARY KEY,
    Name VARCHAR(100),
    Department VARCHAR(100),
    Salary DECIMAL(10, 2));
```



```
    UPDATE SavingsAccounts
    SET Balance = Balance + (Balance * 0.01);
END;
//

DELIMITER ;



CREATE TABLE Employees (
    EmployeeID INT PRIMARY KEY,
    Name VARCHAR(100),
    Department VARCHAR(100),
    Salary DECIMAL(10, 2)
);
```

Output screen:



Schema: deep_skilling

Object Info Session

Output

Action Output

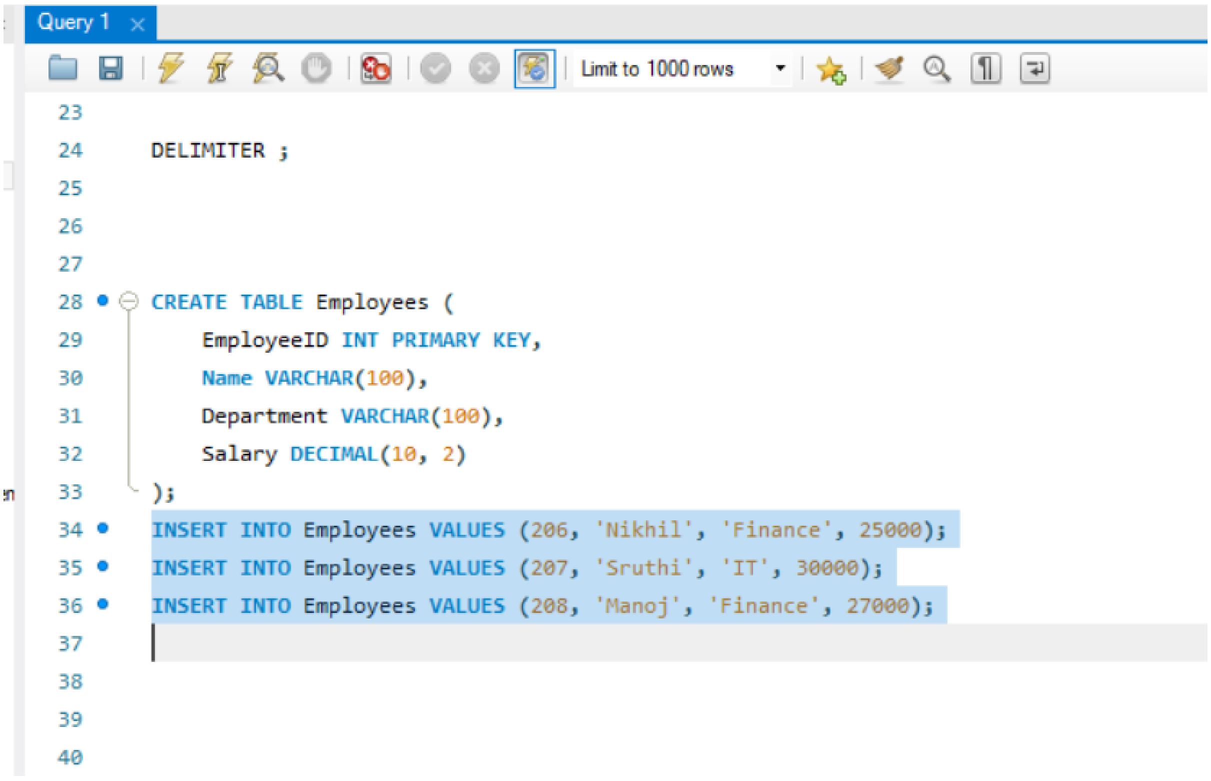
```
#   Time      Action                                                                                              Message
8   11:40:32  CREATE TABLE SavingsAccounts (   AccountID INT PRIMARY KEY,   CustomerID INT,   Balance DECIM...   0 row(s) affected
9   11:40:53  INSERT INTO SavingsAccounts VALUES (11, 1001, 3000.00)                                              1 row(s) affected
10  11:40:53  INSERT INTO SavingsAccounts VALUES (12, 1002, 4500.00)                                              1 row(s) affected
11  11:40:53  INSERT INTO SavingsAccounts VALUES (13, 1003, 7000.00)                                              1 row(s) affected
12  11:51:33  CREATE PROCEDURE ProcessMonthlyInterest() BEGIN   UPDATE SavingsAccounts   SET Balance = Bala...   0 row(s) affected
13  11:57:37  CREATE TABLE Employees (   EmployeeID INT PRIMARY KEY,   Name VARCHAR(100),   Department VA...      0 row(s) affected
```

Inser data:

INSERT INTO Employees VALUES (201, 'Nikhil', 'Finance', 25000);

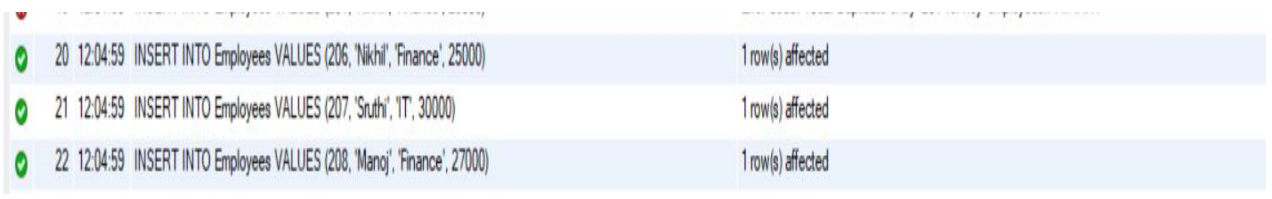
INSERT INTO Employees VALUES (202, 'sruthi', 'IT', 30000);

INSERT INTO Employees VALUES (203, 'Manoj', 'Finance', 27000);



```sql
DELIMITER ;



CREATE TABLE Employees (
    EmployeeID INT PRIMARY KEY,
    Name VARCHAR(100),
    Department VARCHAR(100),
    Salary DECIMAL(10, 2)
);
INSERT INTO Employees VALUES (206, 'Nikhil', 'Finance', 25000);
INSERT INTO Employees VALUES (207, 'Sruthi', 'IT', 30000);
INSERT INTO Employees VALUES (208, 'Manoj', 'Finance', 27000);
```

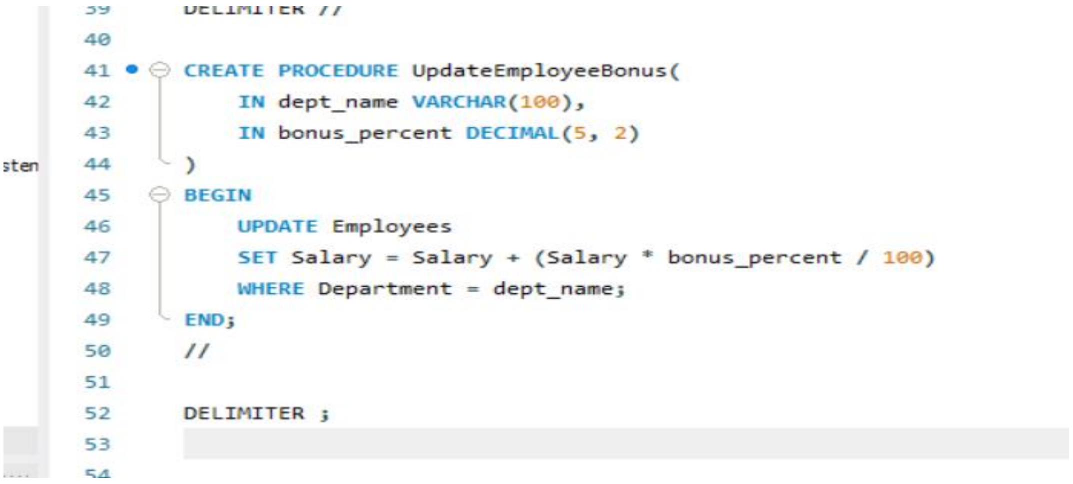
Output screen:



```
20  12:04:59  INSERT INTO Employees VALUES (206, 'Nikhil', 'Finance', 25000)    1 row(s) affected
21  12:04:59  INSERT INTO Employees VALUES (207, 'Sruthi', 'IT', 30000)         1 row(s) affected
22  12:04:59  INSERT INTO Employees VALUES (208, 'Manoj', 'Finance', 27000)     1 row(s) affected
```

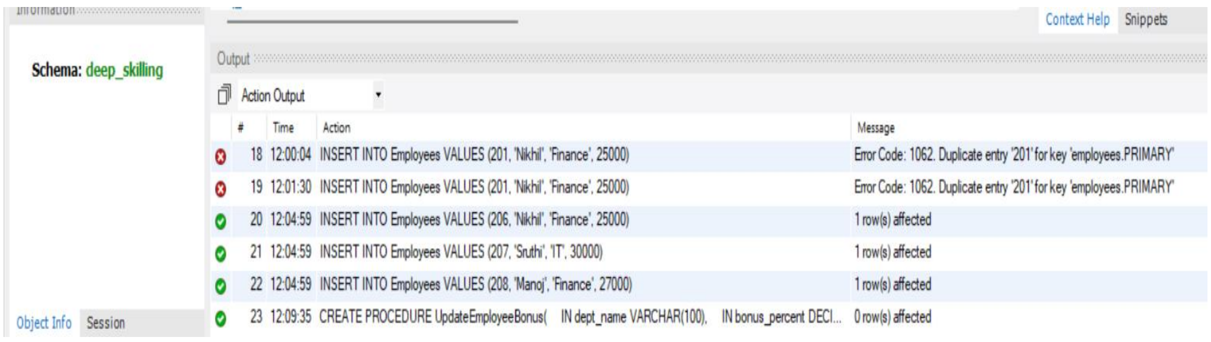
Stored procedures code:

```
DELIMITER //


CREATE PROCEDURE UpdateEmployeeBonus(
    IN dept_name VARCHAR(100),
    IN bonus_percent DECIMAL(5, 2)
)
BEGIN
    UPDATE Employees
    SET Salary = Salary + (Salary * bonus_percent / 100)
    WHERE Department = dept_name;
END;
//


DELIMITER ;
```



```
DELIMITER //

CREATE PROCEDURE UpdateEmployeeBonus(
    IN dept_name VARCHAR(100),
    IN bonus_percent DECIMAL(5, 2)
)
BEGIN
    UPDATE Employees
    SET Salary = Salary + (Salary * bonus_percent / 100)
    WHERE Department = dept_name;
END;
//

DELIMITER ;
```

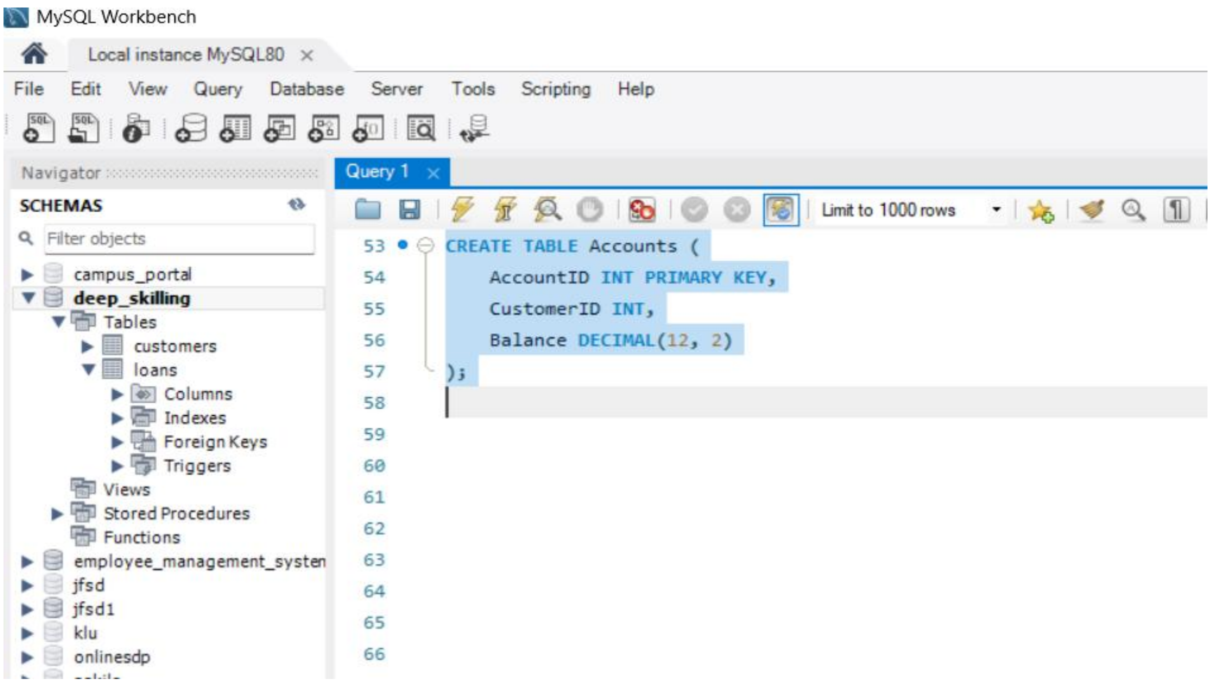
Output screen:



	#	Time	Action	Message
✗	18	12:00:04	INSERT INTO Employees VALUES (201, 'Nikhil', 'Finance', 25000)	Error Code: 1062. Duplicate entry '201' for key 'employees.PRIMARY'
✗	19	12:01:30	INSERT INTO Employees VALUES (201, 'Nikhil', 'Finance', 25000)	Error Code: 1062. Duplicate entry '201' for key 'employees.PRIMARY'
✓	20	12:04:59	INSERT INTO Employees VALUES (206, 'Nikhil', 'Finance', 25000)	1 row(s) affected
✓	21	12:04:59	INSERT INTO Employees VALUES (207, 'Sruthi', 'IT', 30000)	1 row(s) affected
✓	22	12:04:59	INSERT INTO Employees VALUES (208, 'Manoj', 'Finance', 27000)	1 row(s) affected
✓	23	12:09:35	CREATE PROCEDURE UpdateEmployeeBonus(IN dept_name VARCHAR(100), IN bonus_percent DECI...	0 row(s) affected

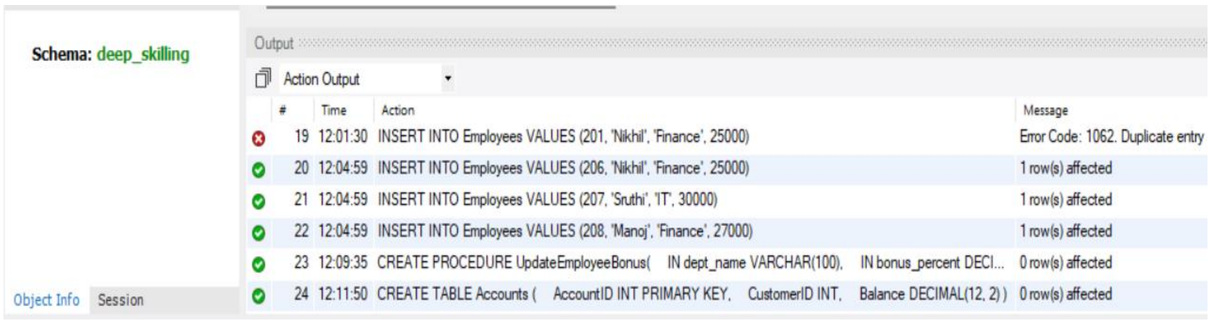
Account table code:

```
CREATE TABLE Accounts (
    AccountID INT PRIMARY KEY,
    CustomerID INT,
    Balance DECIMAL(12, 2)
);
```



```
CREATE TABLE Accounts (
    AccountID INT PRIMARY KEY,
    CustomerID INT,
    Balance DECIMAL(12, 2)
);
```

Output screen



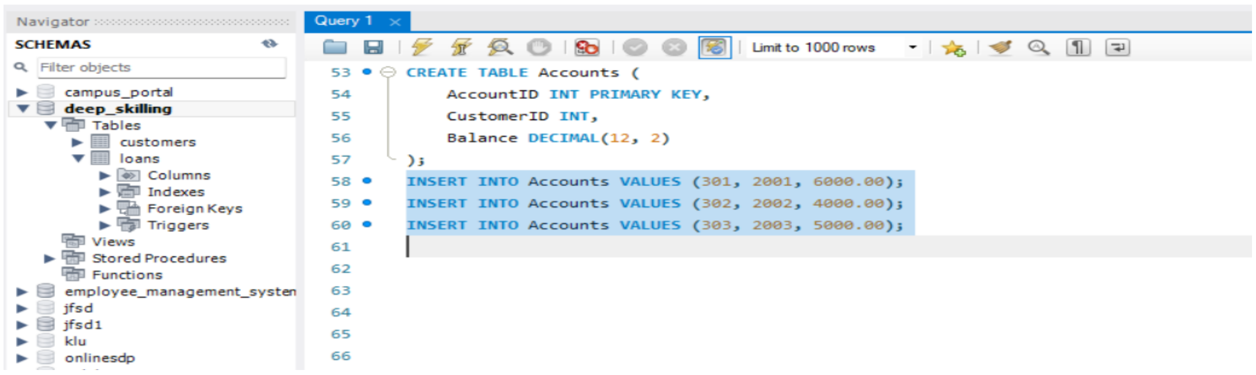
```
    #   Time      Action                                                                                                  Message
✗  19  12:01:30  INSERT INTO Employees VALUES (201, 'Nikhil', 'Finance', 25000)                                           Error Code: 1062. Duplicate entry
✓  20  12:04:59  INSERT INTO Employees VALUES (206, 'Nikhil', 'Finance', 25000)                                           1 row(s) affected
✓  21  12:04:59  INSERT INTO Employees VALUES (207, 'Sruthi', 'IT', 30000)                                                1 row(s) affected
✓  22  12:04:59  INSERT INTO Employees VALUES (208, 'Manoj', 'Finance', 27000)                                            1 row(s) affected
✓  23  12:09:35  CREATE PROCEDURE UpdateEmployeeBonus(    IN dept_name VARCHAR(100),    IN bonus_percent DECI...     0 row(s) affected
✓  24  12:11:50  CREATE TABLE Accounts (    AccountID INT PRIMARY KEY,    CustomerID INT,    Balance DECIMAL(12, 2) )   0 row(s) affected
```

Insert the data in account table

INSERT INTO Accounts VALUES (301, 2001, 6000.00);

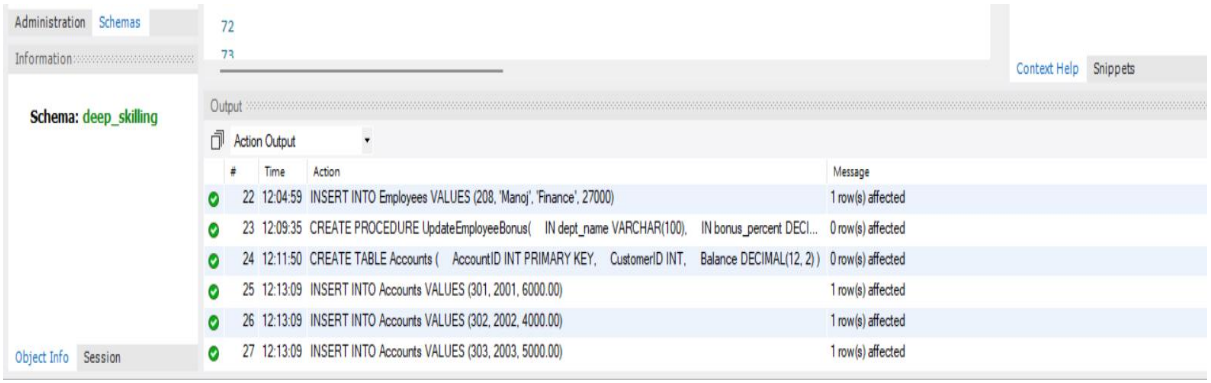
INSERT INTO Accounts VALUES (302, 2002, 4000.00);

INSERT INTO Accounts VALUES (303, 2003, 5000.00);



```
CREATE TABLE Accounts (
    AccountID INT PRIMARY KEY,
    CustomerID INT,
    Balance DECIMAL(12, 2)
);
INSERT INTO Accounts VALUES (301, 2001, 6000.00);
INSERT INTO Accounts VALUES (302, 2002, 4000.00);
INSERT INTO Accounts VALUES (303, 2003, 5000.00);
```

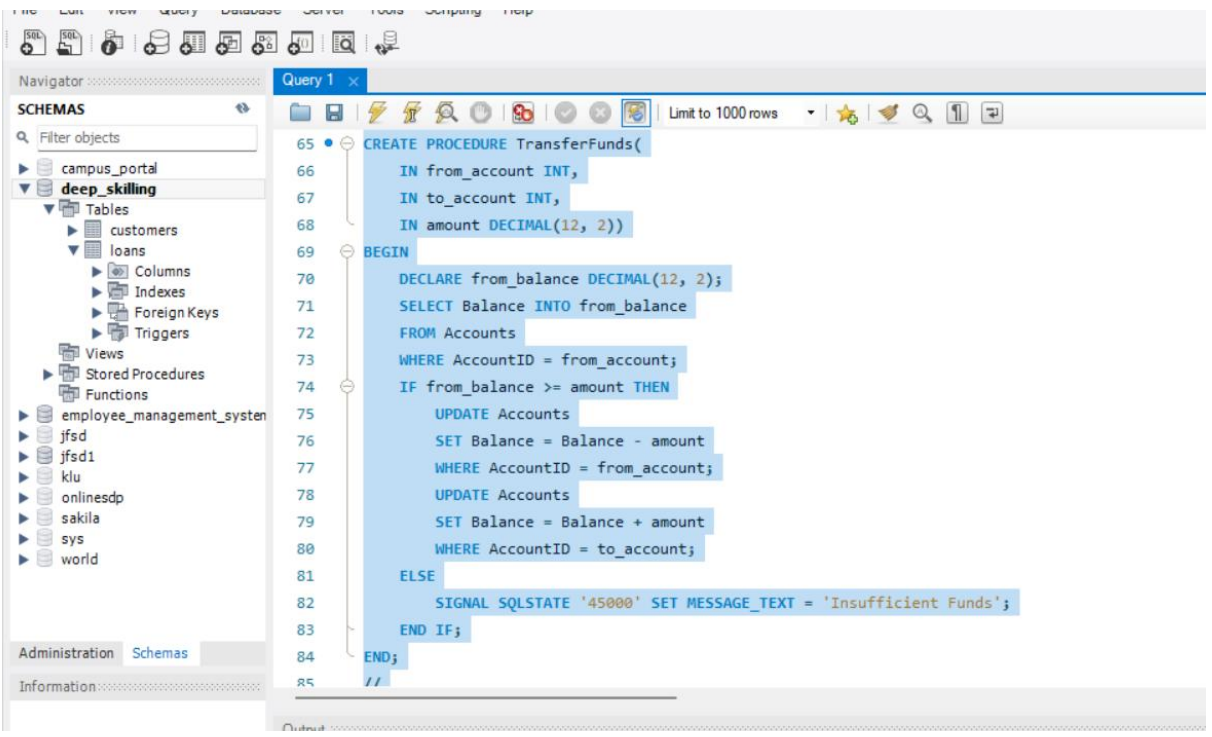
Output screen:



#	Time	Action	Message
22	12:04:59	INSERT INTO Employees VALUES (208, 'Manoj', 'Finance', 27000)	1 row(s) affected
23	12:09:35	CREATE PROCEDURE UpdateEmployeeBonus(IN dept_name VARCHAR(100), IN bonus_percent DECI...	0 row(s) affected
24	12:11:50	CREATE TABLE Accounts (AccountID INT PRIMARY KEY, CustomerID INT, Balance DECIMAL(12, 2))	0 row(s) affected
25	12:13:09	INSERT INTO Accounts VALUES (301, 2001, 6000.00)	1 row(s) affected
26	12:13:09	INSERT INTO Accounts VALUES (302, 2002, 4000.00)	1 row(s) affected
27	12:13:09	INSERT INTO Accounts VALUES (303, 2003, 5000.00)	1 row(s) affected

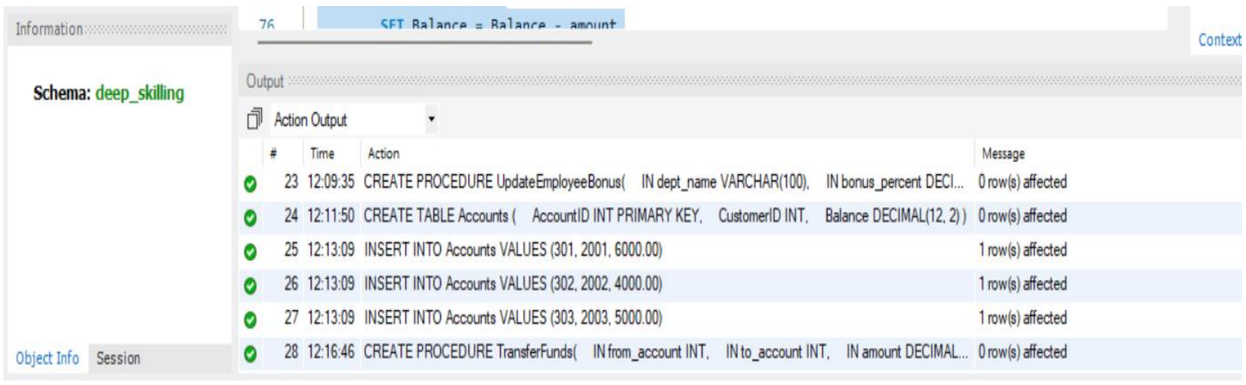
Stored procedures code:

```
DELIMITER //

CREATE PROCEDURE TransferFunds(

    IN from_account INT,

    IN to_account INT,

    IN amount DECIMAL(12, 2)

)

BEGIN

    DECLARE from_balance DECIMAL(12, 2);


    SELECT Balance INTO from_balance

    FROM Accounts

    WHERE AccountID = from_account;


    IF from_balance >= amount THEN

        UPDATE Accounts

        SET Balance = Balance - amount
        WHERE AccountID = from_account;
        UPDATE Accounts
        SET Balance = Balance + amount
        WHERE AccountID = to_account;
    ELSE
        SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Insufficient
Funds';
    END IF;
END;
//
DELIMITER ;
```



```
CREATE PROCEDURE TransferFunds(
    IN from_account INT,
    IN to_account INT,
    IN amount DECIMAL(12, 2))
BEGIN
    DECLARE from_balance DECIMAL(12, 2);
    SELECT Balance INTO from_balance
    FROM Accounts
    WHERE AccountID = from_account;
    IF from_balance >= amount THEN
        UPDATE Accounts
        SET Balance = Balance - amount
        WHERE AccountID = from_account;
        UPDATE Accounts
        SET Balance = Balance + amount
        WHERE AccountID = to_account;
    ELSE
        SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Insufficient Funds';
    END IF;
END;
//
```

Output screen:



```
SET Balance = Balance - amount
```

Schema: deep_skilling

```
#   Time      Action                                                                                      Message
23  12:09:35  CREATE PROCEDURE UpdateEmployeeBonus(   IN dept_name VARCHAR(100),   IN bonus_percent DECI...  0 row(s) affected
24  12:11:50  CREATE TABLE Accounts (   AccountID INT PRIMARY KEY,   CustomerID INT,   Balance DECIMAL(12, 2) )  0 row(s) affected
25  12:13:09  INSERT INTO Accounts VALUES (301, 2001, 6000.00)                                                1 row(s) affected
26  12:13:09  INSERT INTO Accounts VALUES (302, 2002, 4000.00)                                                1 row(s) affected
27  12:13:09  INSERT INTO Accounts VALUES (303, 2003, 5000.00)                                                1 row(s) affected
28  12:16:46  CREATE PROCEDURE TransferFunds(   IN from_account INT,   IN to_account INT,   IN amount DECIMAL...  0 row(s) affected
```

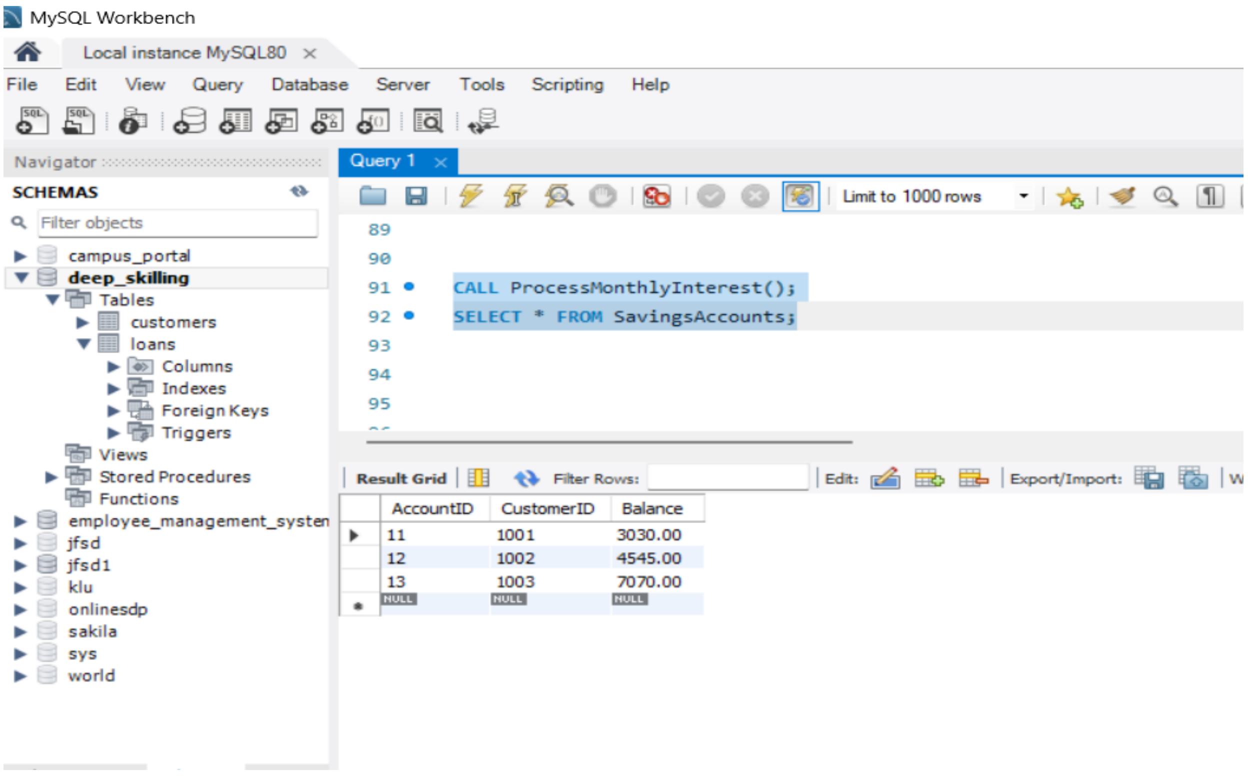
Question: Write a stored procedure **ProcessMonthlyInterest** that calculates and updates the balance of all savings accounts by applying an interest rate of 1% to the current balance.

Code:

CALL ProcessMonthlyInterest();

SELECT * FROM SavingsAccounts;

Output Screen:



```
CALL ProcessMonthlyInterest();
SELECT * FROM SavingsAccounts;
```

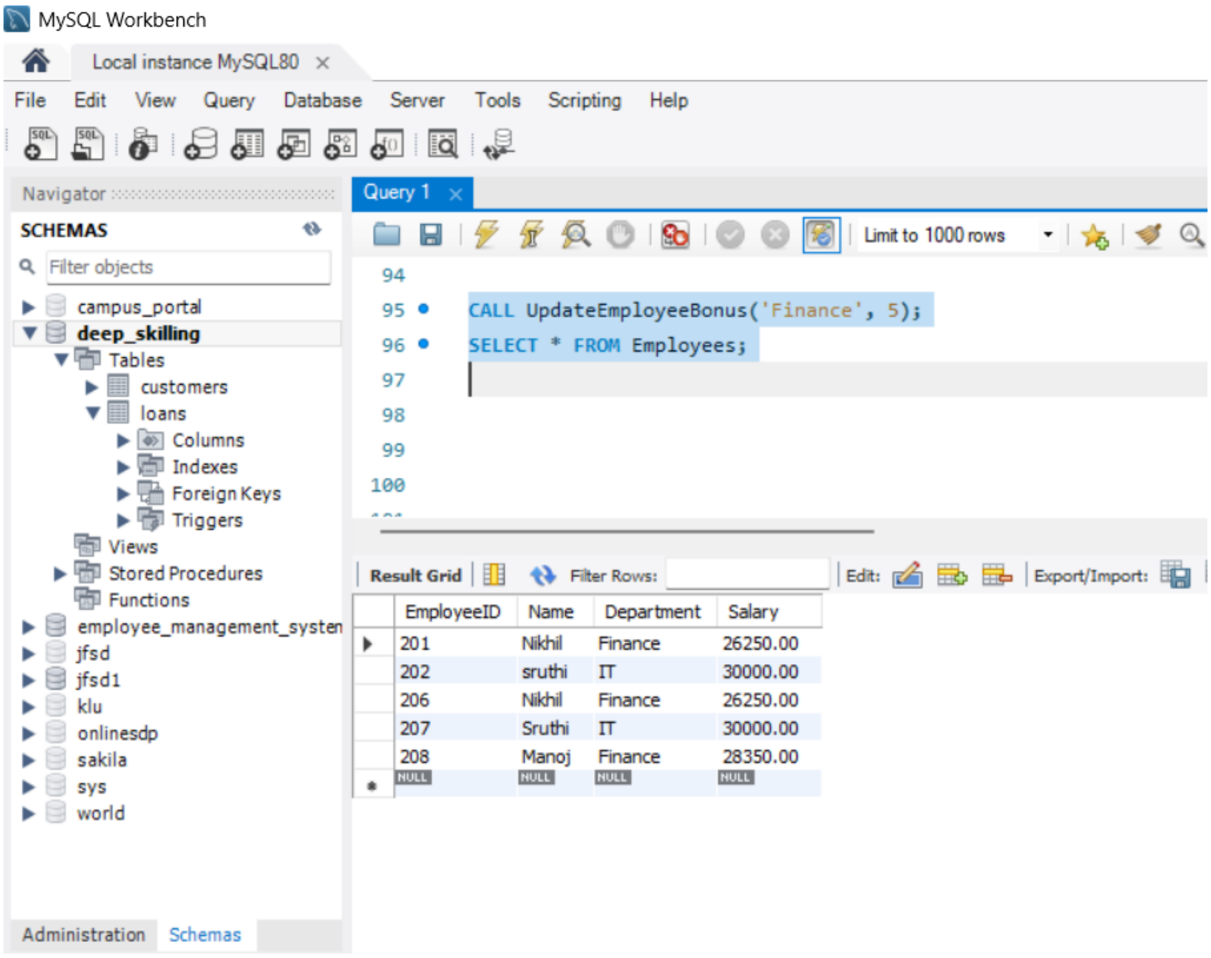
AccountID	CustomerID	Balance
11	1001	3030.00
12	1002	4545.00
13	1003	7070.00
NULL	NULL	NULL

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.

A) **Code:**

CALL UpdateEmployeeBonus('Finance', 5);
SELECT * FROM Employees;

Output Screen:



```
CALL UpdateEmployeeBonus('Finance', 5);
SELECT * FROM Employees;
```

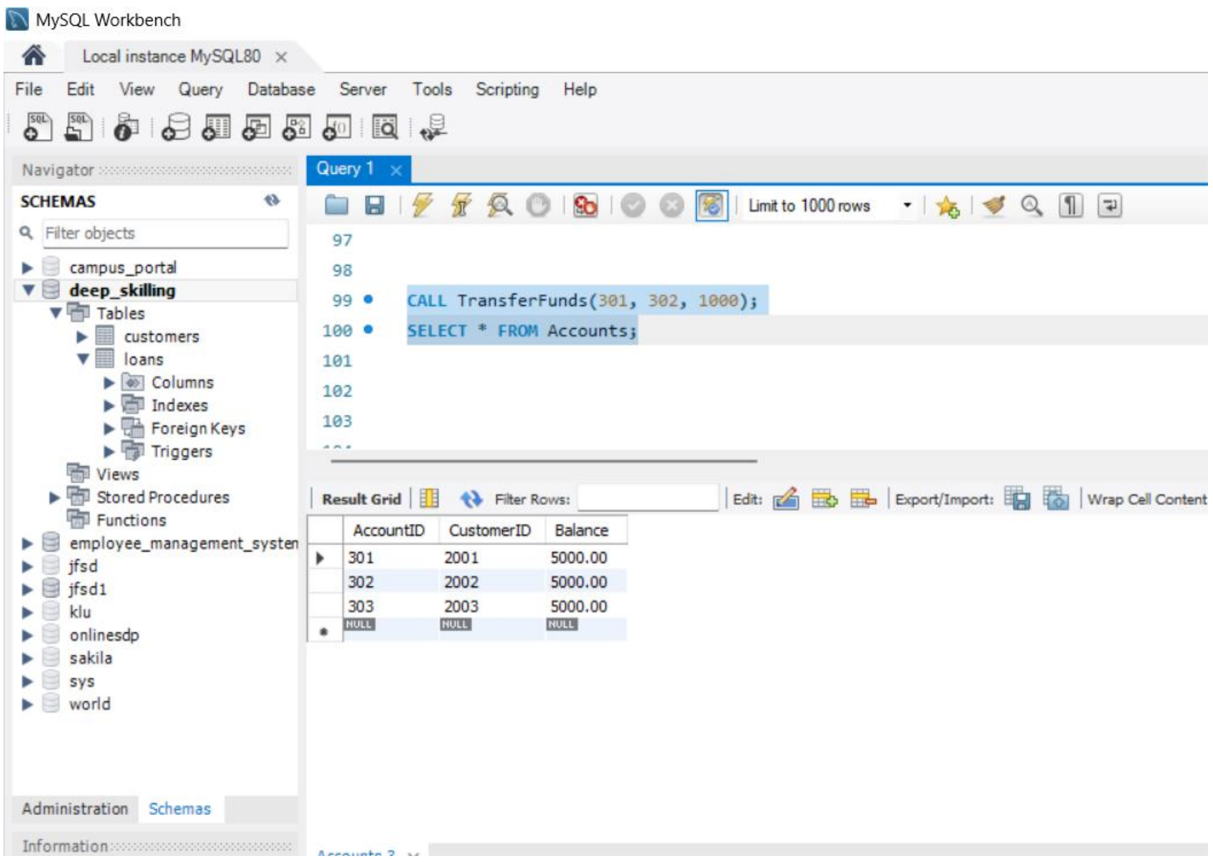
EmployeeID	Name	Department	Salary
201	Nikhil	Finance	26250.00
202	sruthi	IT	30000.00
206	Nikhil	Finance	26250.00
207	Sruthi	IT	30000.00
208	Manoj	Finance	28350.00
NULL	NULL	NULL	NULL

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.

A) **Code**

```
CALL TransferFunds(301, 302, 1000);
SELECT * FROM Accounts;
```

OUTPUT SCREEN:



```
CALL TransferFunds(301, 302, 1000);
SELECT * FROM Accounts;
```

AccountID	CustomerID	Balance
301	2001	5000.00
302	2002	5000.00
303	2003	5000.00
NULL	NULL	NULL