# Data Base Lab04

## Basic Tasks

### 1,2,3

```
1  CREATE TABLE FACULTY(
2      facultyId VARCHAR(20) PRIMARY KEY,
3      facultyName VARCHAR(100),
4      NoOfStaff INT
5  );
6
7  CREATE TABLE STAFF(
8      staffId VARCHAR(20) PRIMARY KEY,
9      staffName varchar(100),
10     staffDOB DATE,
11     staffFaculty VARCHAR(20),
12     FOREIGN KEY (staffFaculty) REFERENCES FACULTY(facultyId)
13 );
14
15 INSERT INTO FACULTY VALUES
16     ('C001','Computing',120),
17     ('E002','Engineering',76),
18     ('M002','Mathematics',56),
19     ('B001','Business',89);
20
21 INSERT INTO STAFF VALUES
22     ('AB9872','Mark White','01-JAN-1978','M002'),
23     ('DL2314','Jas Singh','14-MAR-1982','M002'),
24     ('AF4512','Alison Green','23-DEC-1998','C001'),
25     ('BK2134','Kieran West','16-JAN-1992','B001'),
26     ('FG3124','Lucy Liu','03-AUG-1997','E002');
27
28 SELECT * FROM STAFF;
29
30 SELECT facultyName FROM faculty WHERE NoOfStaff < 75;
31
32 SELECT * FROM staff WHERE staffdob between '01-JAN-1980' and '01-Jan-1990';
33
34 SELECT staffId AS "ID", staffName AS "Name", staffDOB AS "Date of Birth",
    staffFaculty AS "Faculty ID" FROM staff ORDER BY staffName DESC;
35
36 UPDATE STAff SET stafffACULTY = 'E002' WHERE staffName = 'Alison Green'
```

消息   摘要

| 查询 | 消息 | 查询时间 |
|---|---|---|
| CREATE TABLE FACULTY(<br>facultyId VARCHAR(20) PRIMARY KEY,<br> facultyName VARCHAR(100),<br>NoOfStaff INT<br>) | OK | 0.002s |
| CREATE TABLE STAFF(<br>staffId VARCHAR(20) PRIMARY KEY,<br>staffName varchar(100),<br>staffDOB DATE,<br>staffFaculty VARCHAR(20), | OK | 0.002s |
| INSERT INTO FACULTY VALUES<br>('C001','Computing',120),<br>('E002','Engineering',76),<br>('M002','Mathematics',56),<br>('B001','Business',89) | Affected rows: 4 | 0s |
| INSERT INTO STAFF VALUES<br>('AB9872','Mark White','01-JAN-1978','M002'),<br>('DL2314','Jas Singh','14-MAR-1982','M002'), | Affected rows: 5 | 0s |
| | 运行时间: 0.051s | |

### 4

a

| staffid | staffname | staffdob | stafffaculty |
|---|---|---|---|
| AB9872 | Mark White | 1978-01-01 | M002 |
| DL2314 | Jas Singh | 1982-03-14 | M002 |
| AF4512 | Alison Green | 1998-12-23 | C001 |
| BK2134 | Kieran West | 1992-01-16 | B001 |
| FG3124 | Lucy Liu | 1997-08-03 | E002 |

b

```
30   SELECT facultyName FROM faculty WHERE NoOfStaff < 75;
31
32   SELECT * FROM staff WHERE staffdob between '01-JAN-1980' and '01-Jan-1
33
34   SELECT staffId AS "ID", staffName AS "Name", staffDOB AS "Date of Birt
     staffFaculty AS "Faculty ID" FROM staff ORDER BY staffName DESC;
35
36   UPDATE STAff SET stafffACULTY = 'E002' WHERE staffName = 'Alison Green
```

消息　摘要　结果 1

| facultyname |
|---|
| Mathematics |

C .

.

```
29
30   SELECT facultyName FROM faculty WHERE NoOfStaff < 75;
31
32   SELECT * FROM staff WHERE staffdob between '01-JAN-1980' and '01-Jan-1990';
33
34   SELECT staffId AS "ID", staffName AS "Name", staffDOB AS "Date of Birth",
     staffFaculty AS "Faculty ID" FROM staff ORDER BY staffName DESC;
35
36   UPDATE STAff SET stafffACULTY = 'E002' WHERE staffName = 'Alison Green'
```

消息　摘要　结果 1

| staffid | staffname | staffdob | stafffaculty |
|---|---|---|---|
| DL2314 | Jas Singh | 1982-03-14 | M002 |

d

```
33
34  SELECT staffId AS "ID", staffName AS "Name", staffDOB AS "Date of Birth",
    staffFaculty AS "Faculty ID" FROM staff ORDER BY staffName DESC;
35
36  UPDATE STAff SET stafffACULTY = 'E002' WHERE staffName = 'Alison Green'
```

消息　摘要　**结果 1**

| ID | Name | Date of Birth | Faculty ID |
|---|---|---|---|
| AB9872 | Mark White | 1978-01-01 | M002 |
| FG3124 | Lucy Liu | 1997-08-03 | E002 |
| BK2134 | Kieran West | 1992-01-16 | B001 |
| DL2314 | Jas Singh | 1982-03-14 | M002 |
| AF4512 | Alison Green | 1998-12-23 | C001 |

e

| 查询 | 消息 | 查询时间 |
|---|---|---|
| UPDATE STAff SET stafffACULTY = 'E002' WHERE staffName = 'Alison Green' | Affected rows: 1 | 0.004s |

f

| 查询 | 消息 | 查询时间 |
|---|---|---|
| DELETE FROM STAFF WHERE staffName = 'Kieran West' | Affected rows: 1 | 0.001s |

---

# Medium Tasks

6,

a

```
bank=# select 28964 * 1.85;
 ?column?
----------
 53583.40
(1 行记录)


bank=# select 28,964 * 1.85;
 ?column? | ?column?
----------+----------
       28 |  1783.40
(1 行记录)
```

b

```
bank=# select first_name,last_name from employee;
 first_name | last_name
------------+-----------
 Michael    | Smith
 Susan      | Barker
 Robert     | Tyler
 Susan      | Hawthrone
 John       | Gooding
 Helen      | Fleming
 Chris      | Tucker
 Sarah      | Tucker
 Jane       | Grossman
 Paula      | Roberts
 Thomas     | Ziegler
 Samantha   | Jameson
 John       | Blake
 Cindy      | Mason
 Frank      | Portman
 THERESA    | Markham
 Beth       | Fowler
 Rick       | Tulman
(18 行记录)
```

c

```
bank=# select distinct product_type_cd from product;
 product_type_cd
-----------------
 ACCOUNT
 LOAN
(2 行记录)
```

d

```
bank=# select * from product where product_type_cd='LOAN';
 product_cd | date_offered | date_retired |          name           | product_type_cd
------------+--------------+--------------+-------------------------+-----------------
 MRT        | 2000-01-01   |              | home mortgage           | LOAN
 AUT        | 2000-01-01   |              | auto loan               | LOAN
 BUS        | 2000-01-01   |              | business line of credit | LOAN
 SBL        | 2000-01-01   |              | small business loan     | LOAN
(4 行记录)
```

e

| | emp_id [PK] numeric (10) | end_date date | first_name character varying (20) | last_name character varying (20) | start_date date | title character varying (20) | assigned_branch_id numeric (10) | dept_id numeric (10) | superior_emp_id numeric (10) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | [null] | Susan | Barker | 2002-09-12 | Vice President | 1 | 3 | 1 |
| 2 | 4 | [null] | Susan | Hawthrone | 2004-04-24 | Operations Manager | 1 | 1 | 3 |
| 3 | 8 | [null] | Sarah | Tucker | 2002-12-02 | Teller | 1 | 1 | 6 |
| 4 | 12 | [null] | Samantha | Jameson | 2003-01-08 | Teller | 2 | 1 | 10 |

f

| | emp_id [PK] numeric (10) | end_date date | first_name character varying (20) | last_name character varying (20) | start_date date | title character varying (20) | assigned_branch_id numeric (10) | dept_id numeric (10) | superior_emp_id numeric (10) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | [null] | Susan | Hawthrone | 2004-04-24 | Operations Manager | 1 | 1 | 3 |
| 2 | 8 | [null] | Sarah | Tucker | 2002-12-02 | Teller | 1 | 1 | 6 |
| 3 | 12 | [null] | Samantha | Jameson | 2003-01-08 | Teller | 2 | 1 | 10 |
| 4 | 16 | [null] | THERESA | Markham | 2001-03-15 | Head Teller | 4 | 1 | 4 |
| 5 | 11 | 2019-11-01 | Thomas | Ziegler | 2000-10-23 | Teller | 2 | 1 | 10 |

g

| | emp_id [PK] numeric (10) | first_name character varying (20) | last_name character varying (20) |
|---|---|---|---|
| 1 | 2 | Susan | Barker |
| 2 | 4 | Susan | Hawthrone |
| 3 | 6 | Helen | Fleming |
| 4 | 10 | Paula | Roberts |

h

| | emp_id [PK] numeric (10) | end_date date | first_name character varying (20) | last_name character varying (20) | start_date date | title character varying (20) | assigned_branch_id numeric (10) | dept_id numeric (10) | superior_emp_id numeric (10) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | [null] | Michael | Smith | 2001-06-22 | President | 1 | 3 | [null] |
| 2 | 2 | [null] | Susan | Barker | 2002-09-12 | Vice President | 1 | 3 | 1 |
| 3 | 3 | [null] | Robert | Tyler | 2002-02-09 | Treasurer | 1 | 3 | 1 |
| 4 | 8 | [null] | Sarah | Tucker | 2002-12-02 | Teller | 1 | 1 | 6 |
| 5 | 9 | [null] | Jane | Grossman | 2002-05-03 | Teller | 1 | 1 | 6 |
| 6 | 10 | [null] | Paula | Roberts | 2002-07-27 | Head Teller | 2 | 1 | 4 |
| 7 | 14 | [null] | Cindy | Mason | 2002-08-09 | Teller | 3 | 1 | 13 |
| 8 | 16 | [null] | THERESA | Markham | 2001-03-15 | Head Teller | 4 | 1 | 4 |
| 9 | 17 | [null] | Beth | Fowler | 2002-06-29 | Teller | 4 | 1 | 16 |
| 10 | 18 | [null] | Rick | Tulman | 2002-12-12 | Teller | 4 | 1 | 16 |

i

| | cust_id [PK] numeric (10) | address character varying (30) | city character varying (20) | cust_type_cd character varying (1) | fed_id character varying (12) | postal_code character varying (10) | state character varying (20) |
|---|---|---|---|---|---|---|---|
| 1 | 9 | 29 Maple St | Newton | I | 999-99-9999 | 2458 | MA |
| 2 | 8 | 472 Freedom Rd | Salem | I | 888-88-8888 | 3079 | NH |
| 3 | 7 | 29 Admiral Ln | Wilmington | I | 777-77-7777 | 1887 | MA |
| 4 | 6 | 12 Blaylcok Ln | Waltham | I | 666-66-6666 | 2451 | MA |
| 5 | 4 | 12 Bunchanan LN | Waltham | I | 444-44-4444 | 2451 | MA |
| 6 | 3 | 18 Jessup Rd | Quincy | I | 333-33-3333 | 2169 | MA |
| 7 | 2 | 372 Clearwater Blvd | Woburn | I | 222-22-2222 | 1801 | MA |
| 8 | 1 | 47 Mockingbird Ln | Lynnfield | I | 111-11-1111 | 1940 | MA |

j

| | product_cd [PK] character varying (10) | date_offered date | date_retired date | name character varying (50) | product_type_cd character varying (255) |
|---|---|---|---|---|---|
| 1 | SAV | 2000-01-01 | [null] | savings account | ACCOUNT |
| 2 | MM | 2000-01-01 | [null] | money market account | ACCOUNT |
| 3 | CHK | 2000-01-01 | [null] | checking account | ACCOUNT |
| 4 | CD | 2000-01-01 | [null] | certificate of deposit | ACCOUNT |
| 5 | SBL | 2000-01-01 | [null] | small business loan | LOAN |
| 6 | MRT | 2000-01-01 | [null] | home mortgage | LOAN |
| 7 | BUS | 2000-01-01 | [null] | business line of credit | LOAN |
| 8 | AUT | 2000-01-01 | [null] | auto loan | LOAN |

k

| | emp_id [PK] numeric (10) | end_date date | first_name character varying (20) | last_name character varying (20) | start_date date | title character varying (20) | assigned_branch_id numeric (10) | dept_id numeric (10) | superior_emp_id numeric (10) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 7 | [null] | Chris | Tucker | 2004-09-15 | Teller | 1 | 1 | 6 |
| 2 | 15 | [null] | Frank | Portman | 2003-04-01 | Teller | 3 | 1 | 13 |
| 3 | 12 | [null] | Samantha | Jameson | 2003-01-08 | Teller | 2 | 1 | 10 |
| 4 | 18 | [null] | Rick | Tulman | 2002-12-12 | Teller | 4 | 1 | 16 |
| 5 | 8 | [null] | Sarah | Tucker | 2002-12-02 | Teller | 1 | 1 | 6 |
| 6 | 14 | [null] | Cindy | Mason | 2002-08-09 | Teller | 3 | 1 | 13 |
| 7 | 17 | [null] | Beth | Fowler | 2002-06-29 | Teller | 4 | 1 | 16 |
| 8 | 9 | [null] | Jane | Grossman | 2002-05-03 | Teller | 1 | 1 | 6 |
| 9 | 11 | 2019-11-01 | Thomas | Ziegler | 2000-10-23 | Teller | 2 | 1 | 10 |

l

UPDATE ACCOUNT SET AVAIL_BALANCE=AVAIL_BALANCE *
1.02, PENDING_BALANCE=PENDING_BALANCE *1.02 WHERE CUST_ID=1;

SELECT ACCOUNT_ID, PRODUCT_CD, AVAIL_BALANCE, PENDING_BALANCE FROM ACCOUNT WHERE CUST_ID=1;

m

delete from acc_transaction where txn_date='2003/07/30';

SELECT COUNT (*) FROM ACC_TRANSACTION WHERE TXN_DATE='2003/07/30'.

n

| | account_id [PK] integer | cust_id numeric (10) | avail_balance numeric (14,2) |
|---|---|---|---|
| 1 | 23 | 12 | 50000.00 |
| 2 | 22 | 12 | 38552.05 |
| 3 | 20 | 10 | 23575.12 |

O

| | city<br>character varying (20) 🔒 | state<br>character varying (20) 🔒 |
|---|---|---|
| 1 | Salem | NH |
| 2 | Wilmington | NH |

P

| | cust_id<br>[PK] integer | birth_date<br>date | first_name<br>character varying (255) | last_name<br>character varying (255) |
|---|---|---|---|---|
| 1 | 1 | 1972-04-22 | James | Hadley |
| 2 | 2 | 1968-08-15 | Susan | Brown |
| 3 | 3 | 1958-02-06 | Frank | Tucker |
| 4 | 4 | 1966-12-22 | John | Hayward |
| 5 | 5 | 1971-08-25 | Charles | Frasier |
| 6 | 6 | 1962-09-14 | John | Spencer |
| 7 | 7 | 1947-03-19 | Margaret | Young |
| 8 | 8 | 1977-07-01 | Louis | Blake |
| 9 | 9 | 1968-06-16 | Richard | Farley |

q

| | cust_id<br>[PK] integer | birth_date<br>date | first_name<br>character varying (255) | last_name<br>character varying (255) |
|---|---|---|---|---|
| 1 | 1 | 1972-04-22 | James | Hadley |
| 2 | 5 | 1971-08-25 | Charles | Frasier |
| 3 | 8 | 1977-07-01 | Louis | Blake |
| 4 | 9 | 1968-06-16 | Richard | Farley |
| 5 | 2 | 1968-08-15 | Susan | Brown |

## S

| | cust_id [PK] integer | birth_date date | first_name character varying (255) | last_name character varying (255) |
|---|---|---|---|---|
| 1 | 1 | 1972-04-22 | James | Hadley |
| 2 | 5 | 1971-08-25 | Charles | Frasier |
| 3 | 8 | 1977-07-01 | Louis | Blake |
| 4 | 9 | 1968-06-16 | Richard | Farley |
| 5 | 2 | 1968-08-15 | Susan | Brown |

```sql
74
75 CREATE TABLE ACC_TRANSACTION (
76     txinId INT PRIMARY KEY,
77     amount DECIMAL(14, 2) NOT NULL,
78     fundsAvailDate TIMESTAMP NOT NULL,
79     txin_Date TIMESTAMP NOT NULL,
80     txinTypeCd VARCHAR(10),
81     accountId INT,
82     executionBranchId DECIMAL(10),
83     tellerEmpId DECIMAL(10),
84     FOREIGN KEY (accountId) REFERENCES ACCOUNT (accountId),
85     FOREIGN KEY (executionBranchId) REFERENCES BRANCH (branchId),
86     FOREIGN KEY (tellerEmpId) REFERENCES EMPLOYEE (empId)
87 );
88
89 CREATE TABLE BUSINESS (
90     custId DECIMAL(10) PRIMARY KEY NOT NULL,
91     incorpDate DATE,
92     name VARCHAR(255) NOT NULL,
93     stateId VARCHAR(10) NOT NULL,
94     FOREIGN KEY (custId) REFERENCES CUSTOMER (custId)
95 );
96
97 CREATE TABLE INDIVIDUAL (
98     custId DECIMAL(10) PRIMARY KEY,
99     birthDate DATE,
100     firstName VARCHAR(30),
101     lastName VARCHAR(30),
102     FOREIGN KEY (custId) REFERENCES CUSTOMER (custId)
103 );
104
105 CREATE TABLE OFFICER (
106     officerId DECIMAL(10) PRIMARY KEY,
107     endDate DATE,
108     firstName VARCHAR(30) NOT NULL,
109     lastName VARCHAR(30) NOT NULL,
110     startDate DATE NOT NULL,
111     title VARCHAR(20),
112     custId DECIMAL(10),
113     FOREIGN KEY (custId) REFERENCES CUSTOMER (custId)
114 );
115
116 SELECT table_name FROM information_schema.tables WHERE table_schema =
    'public';
```

消息　摘要　结果 1

| table_name |
| --- |
| customer |
| account |
| acc_transaction |
| branch |
| employee |
| department |
| business |
| product_type |
| product |

+ − ✓ ✕