










作业5-10185102142-李泽浩

(1) 定义视图v_customeInfo，要求可以替换同名视图，列出所有客户相关信息，输出属性包括客户编号（CUST_ID）、完整联系地址（PROVINCIAL_REGION、CITY与ADDRESS三个字段拼接）、邮政编码（POSTAL_CODE）、客户名称（类型为I的客户输出在Individual表中对应的姓名，使用LAST_NAME与FIRST_NAME拼接；类型为B的客户输出在business表中对应的NAME

```
CREATE VIEW v_customeInfo AS
(
  (SELECT c.CUST_ID, CONCAT(c.PROVINCIAL_REGION,"-",c.CITY,"-",c.ADDRESS) as
full_address,
      c.POSTAL_CODE, CONCAT(i.LAST_NAME,i.FIRST_NAME,"+") as full_name
FROM customer as c INNER JOIN individual as i on c.CUST_ID = i.CUST_ID
WHERE c.cust_type_cd = "I")
  UNION
  (SELECT c.CUST_ID, CONCAT(c.PROVINCIAL_REGION,c.CITY,c.ADDRESS) as full_address,
      c.POSTAL_CODE, b.`NAME` as name
FROM customer as c INNER JOIN business as b on c.CUST_ID = b.CUST_ID
WHERE c.cust_type_cd = "B")
);
```

对象	 无标题@bank_2 (root)	 v_customeinfo@bank_2...	
<div>      </div>			
CUST_ID	full_address	POSTAL_CODE	full_name
1	上海市-上海市-上海市南京西路11号1021室	027027	尤青 +
2	上海市-上海市-上海市北京东路022号5-1880	089089	许文强 +
3	江苏省-南京市-江苏省南京市人民大道456号1-203室	003003	何婕 +
4	上海市-上海市-上海市中潭路100弄	002002	吕东 +
5	浙江省-杭州市-浙江省杭州市江南大道19号304	030030	施珊珊 +
6	上海市-上海市-上海市真光路962弄	024023	张晓 +
7	上海市-上海市-上海市共富路40号	018018	孔庆东 +
8	浙江省-杭州市-浙江省杭州市明月路303号	030030	曹方 +
9	上海市-上海市-上海市同泰路56号5-44号	024024	严匡 +
10	上海市上海市上海市中山北路3663号	021021	华东师范大学
11	浙江省杭州市浙江省杭州市文一西路969号	001001	阿里巴巴集团有限公司
12	上海市上海市上海市石门一路33号	021021	上海汽车集团股份有限公司
13	江苏省南京市江苏省南京市诚信大道19号	012012	南瑞集团有限公司

(2) 定义视图v_transInfo，从acc_transaction中查出不在于其开户行进行的交易记录信息（即EXECUTION_BRANCH_ID不为该账户对应的OPEN_BRANCH_ID），输出属性包括交易金额（AMOUNT）、交易时间（TXN_DATE）、交易类型（CD显示为现金存入，CW显示为现金取出，TF显示为汇款转出，TT显示为汇款转入，IC显示为利息计入，LI显示为贷款拨入）、执行交易的分支机构名称（EXECUTION_BRANCH_NAME）、开户分支银行名称（OPEN_BRANCH_NAME）

```
CREATE VIEW v_transInfo AS
(
    SELECT c.AMOUNT, c.TXN_DATE, a.OPEN_BRANCH_ID, b.NAME` as
    "OPEN_BRANCH_NAME",
        b1.NAME` as EXECUTION_BRANCH_NAME,
        (CASE WHEN c.TXN_TYPE_CD = "CD" THEN "现金存入"
            WHEN c.TXN_TYPE_CD = "CW" THEN "现金取出"
            WHEN c.TXN_TYPE_CD = "TF" THEN "汇款转出"
            WHEN c.TXN_TYPE_CD = "TT" THEN "汇款转入"
            WHEN c.TXN_TYPE_CD = "IC" THEN "利息计入"
            WHEN c.TXN_TYPE_CD = "LI" THEN "贷款拨入"
        END)
        as Type
    FROM acc_transaction as c INNER JOIN account as a on c.ACCOUNT_ID =
    a.ACCOUNT_ID,
        branch as b, branch as b1
    WHERE c.EXECUTION_BRANCH_ID <> a.OPEN_BRANCH_ID
        AND a.OPEN_BRANCH_ID = b.BRANCH_ID
        AND c.EXECUTION_BRANCH_ID = b1.BRANCH_ID
);
```

(3) 为了备份数据或复制生产数据进行测试，经常会需要把数据从现有的表复制到新的（临时）表中，可以用CREATE TABLE ... AS ...子句进行表的复制。创建存储过程（copyTransactionFrom），该存储过程接收一个参数：起始日期（fDATE），功能是将acc_transaction表中交易日期（TXN_DATE）晚于等于起始日期的记录全部信息复制到新表（acc_transactionNew）中（该表如存在应先删除）。提示：在存储过程中执行DDL语句需要特殊处理。

```

DROP PROCEDURE IF EXISTS copyTransactionFrom;
CREATE PROCEDURE copyTransactionFrom(in fDATE datetime)
BEGIN
    DROP TABLE IF EXISTS acc_transactionNew;
    CREATE TABLE acc_transactionNew AS
        SELECT *
        FROM acc_transaction
        WHERE TXN_DATE >= fDATE;
END;

CALL copyTransactionFrom('2015-12-28 00:00:00')

```

(4) 编写函数func_vipid，接收输入参数after_date，返回开户日期（OPEN_DATE）晚于after_date的、且可用余额最多的账户对应的客户编号（CUST_ID）。

```

set global log_bin_trust_function_creators=TRUE;
DROP FUNCTION IF EXISTS func_vipid;
CREATE FUNCTION func_vipid(after_date date) RETURNS INT
BEGIN
    DECLARE id int;
    SET id=0;
    SELECT CUST_ID INTO id
    FROM account
    WHERE OPEN_DATE > after_date AND AVAIL_BALANCE >=
    ALL(SELECT a1.AVAIL_BALANCE
        FROM account AS a1
        WHERE a1.OPEN_DATE > after_date
        );
    RETURN id;
END;
SELECT func_vipid('2013-12-15');

```

func_vipid('2013-12-15')	
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(5) 编写函数func_rand_email, 随机生成合法的邮箱地址, @之前为长度不超过50的字符串, 字符串中符号可包括a-z、A-Z、0-9; @之后为163.com、hotmail.com或ecnu.edu.cn。

```
DROP FUNCTION IF EXISTS func_rand_email;
CREATE FUNCTION func_rand_email() RETURNS VARCHAR(75)
BEGIN
    DECLARE result VARCHAR(50) DEFAULT '';
    DECLARE front VARCHAR(50) DEFAULT '';
    DECLARE length INT;
    DECLARE back INT DEFAULT 0;
    DECLARE charset VARCHAR(70);
    DECLARE i INT DEFAULT 0;
    SET length=CEILING(RAND()*50);
    SET charset='abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789';
    WHILE i<length DO
        SET front=concat(front,substring(charset,floor(1+RAND()*62),1));
        SET i=i+1;
    END WHILE;
    SELECT RAND()*30 INTO back;
    IF back>=0 AND back<10
        THEN SET result=concat(front,'@163.com');
    ELSEIF back>=10 AND back<20
        THEN SET result=CONCAT(front,'@hotmail.com');
    ELSE
        SET result=concat(front,'@ecnu.edu.cn');
    END IF;
    RETURN result;
END;
SELECT func_rand_email();
```

func_rand_email()
4a32e5569ba11fd28e05e0ae2@hotmail.com

func_rand_email()
f0e@ecnu.edu.cn

(6) 编写函数func_rand_telnum, 可随机生成长度为11为的手机号, 开头为130 131 132 133 134 135 136 137 138 139 186 187 189 151 157。

```
DROP FUNCTION IF EXISTS func_rand_telnum;
CREATE FUNCTION func_rand_telnum() RETURNS VARCHAR(11)
BEGIN
    DECLARE res VARCHAR(11) DEFAULT('');
```

```

DECLARE random INT;
SET random = floor(RAND()*15);

SELECT substring(floor(RAND()*10000),1,9) INTO res;
SET res = CONCAT(res,substring(floor(RAND()*10000),1,9));

IF random = 0 THEN
    SET res = CONCAT('130',res);
ELSEIF random = 1 THEN
    SET res = CONCAT('131',res);
ELSEIF random = 2 THEN
    SET res = CONCAT('132',res);
ELSEIF random = 3 THEN
    SET res = CONCAT('133',res);
ELSEIF random = 4 THEN
    SET res = CONCAT('134',res);
ELSEIF random = 5 THEN
    SET res = CONCAT('135',res);
ELSEIF random = 6 THEN
    SET res = CONCAT('136',res);
ELSEIF random = 7 THEN
    SET res = CONCAT('137',res);
ELSEIF random = 9 THEN
    SET res = CONCAT('139',res);
ELSEIF random = 10 THEN
    SET res = CONCAT('187',res);
ELSEIF random = 11 THEN
    SET res = CONCAT('186',res);
ELSEIF random = 12 THEN
    SET res = CONCAT('189',res);
ELSEIF random = 13 THEN
    SET res = CONCAT('151',res);
ELSEIF random = 14 THEN
    SET res = CONCAT('157',res);
END IF;

RETURN res;

END;
SELECT func_rand_telnum();

```

func_rand_telnum()	
15740591343	

func_rand_telnum()

13686619692
