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QUESTION 1: STORED FUNCTION

The code of **creating the table** is as following:

```
DROP TABLE IF EXISTS person;
CREATE TABLE person (
ID CHAR(10),
name CHAR(40),
mother CHAR(10),
father CHAR(10),
PRIMARY KEY (ID),
FOREIGN KEY (father) REFERENCES person,
FOREIGN KEY (mother) REFERENCES person
);
```

The code of **stored function** is as following:

```
CREATE OR REPLACE FUNCTION add_member(id1 CHAR(10),name1 CHAR(10),id2 CHAR(10),name2 CHAR(10),id3 CHAR(10),name3 CHAR(10),id4 CHAR(10)
RETURNS SMALLINT AS $$
DECLARE
cnt SMALLINT;
BEGIN
INSERT INTO person VALUES (id3,name3,NULL,NULL);
INSERT INTO person VALUES (id4,name4,NULL,NULL);
INSERT INTO person VALUES (id1,name1,id4,id3);
INSERT INTO person VALUES (id2,name2,id4,id3);
SELECT COUNT(*) INTO cnt FROM person;
RETURN cnt;
END
$$ LANGUAGE plpgsql;
```

And the results of our function are as following:

1. Function itself

2. Table after using the function

QUESTION 2: TRIGGER

The code of trigger is as following:

```
CREATE OR REPLACE FUNCTION del_parent() RETURNS TRIGGER AS $del_parent$
  BEGIN
    IF OLD.mother NOT IN(SELECT mother FROM person WHERE mother IS NOT NULL) THEN
      DELETE FROM person WHERE id=OLD.mother;
    END IF;
    IF OLD.father NOT IN(SELECT father FROM person WHERE father IS NOT NULL) THEN
      DELETE FROM person WHERE id=OLD.father;
    END IF;
```

```
    RETURN OLD;
  END;
$del_parent$ LANGUAGE plpgsql;

CREATE TRIGGER del_parent AFTER DELETE ON person
FOR EACH ROW EXECUTE FUNCTION del_parent();
```

And the results are as following:

1. We first delete the row of **one of the children** in this family:

```
44   ---selecting
45   SELECT add_member('1','Lily','2','Mickey','3','Papa','4','Mama');
46   DELETE FROM person WHERE id='2';
47   SELECT * FROM person;
```

数据输出　解释　消息　通知

	id [PK] character (10)	name character (40)	mother character (10)	father character (10)	
1	3	Papa ...	[null]	[null]	
2	4	Mama ...	[null]	[null]	
3	1	Lily ...	4	3	

We can see that **the rows of the parents still exists.**

2. Then we delete the row of **the other child** in this family:

```
44   ---selecting
45   SELECT add_member('1','Lily','2','Mickey','3','Papa','4','Mama');
46   DELETE FROM person WHERE id='2';
47   DELETE FROM person WHERE id='1';
48   SELECT * FROM person;
```

数据输出　解释　消息　通知

	id [PK] character (10)	name character (40)	mother character (10)	father character (10)	

We can see that **the row of the child and the rows of two parents are all deleted.**