

Data Bases Laboratory Exercises 4th set

The purpose of the exercise is to implement stored procedures and triggers in a pre-existing database, which was provided in the 3rd practice set (Database for a business registry).

Stored Procedures

1 Create a stored procedure that takes as input the code (id) of a business and prints its name (businessname) and title, as well as the name and title of the parent business, and so on up to the root of the business tree. An example call for this stored procedure is as follows:

```
mysql> CALL getPathToRoot(54879);
+-----+-----+
| bname | btitle |
+-----+-----+
| Kallinani Athanasia | Thalassina Kallinanis Spartis A tonas Sykevastiris |
+-----+-----+
1 row in set (0.00 sec)

+-----+-----+
| bname | btitle |
+-----+-----+
| Kallinani Athanasia | Thalassina Kallinanis Spartis A tonas |
+-----+-----+
1 row in set (0.02 sec)

+-----+-----+
| bname | btitle |
+-----+-----+
| Kallinani Athanasia | Thalassina Kallinanis Spartis |
+-----+-----+
1 row in set (0.03 sec)

+-----+-----+
| bname | btitle |
+-----+-----+
| Kallinani Athanasia | Thalassina Kallinanis |
+-----+-----+
1 row in set (0.05 sec)

Query OK, 0 rows affected (0.06 sec)
```

2 A stored procedure that takes as input the code (id_kataxoris) of a tax office (DOY), prints the code, the name (businessname), and the trade name (title) of each business from this tax office individually, and for each business name, it prints the list of auditors who have audited it (name, afm(person), SOEL number (soel), type). An example call for this stored procedure is as follows:

```
mysql> CALL getAuditorsPerBusiness(3);
```

id	businessname	title
31200	Tzatzadaki Maria	Tzatzadakis

```
1 row in set (0.00 sec)
```

name	afn	soel	type
Xristou Theodora	100000250	122	ANAPLHRWMATIKOS
Papadopoulou Niki	200000333	560	TAKTIKOS

```
2 rows in set (0.01 sec)
```

id	businessname	title
31201	Tzatzadaki Maria	Tzatzadakis Ypokatastima 2

```
1 row in set (0.04 sec)
```

name	afn	soel	type
Xristou Theodora	100000250	122	ANAPLHRWMATIKOS

```
1 row in set (0.06 sec)
```

```
Query OK, 0 rows affected, 1 warning (0.07 sec)
```

3 A stored procedure that takes as input the code (id) of a business to delete it. Before performing the deletion, it transfers the branches of this business to its parent business. An example of the functionality of this stored procedure is as follows:

```
mysql> SELECT child.id AS ChildId, parent.id AS ParentId
-> FROM business AS child
-> LEFT JOIN business AS parent ON child.branch=parent.id;
```

ChildId	ParentId
18777	NULL
20001	NULL
26400	NULL
54874	NULL
00000	NULL
31200	20001
31201	31200
54875	54874
54876	54874
54877	54876
54878	54876
54879	54877

```
12 rows in set (0.00 sec)
```

```
mysql> CALL deleteBusiness(54876);
Query OK, 1 row affected (0.18 sec)
```

```
mysql> SELECT child.id AS ChildId, parent.id AS ParentId
-> FROM business AS child
-> LEFT JOIN business AS parent ON child.branch=parent.id;
```

ChildId	ParentId
18777	NULL
20001	NULL
26400	NULL
54874	NULL
00000	NULL
31200	20001
31201	31200
54875	54874
54877	54874
54878	54874
54879	54877

```
11 rows in set (0.00 sec)
```

A stored procedure that is called with the parameter of a business code (id). It checks all the share percentages entered for this business and determines whether their sum is less than or equal to 100%. If not, it attempts to correct the percentages by deleting the most appropriate share entry. The most appropriate entry is considered to be the one whose deletion will bring the total percentage as close to 100% as possible, regardless of whether the total is above or below 100%. If the total percentage does not drop below 100% after the deletion, it proceeds with a second, third, and so on, until the percentage is less than or equal to 100%.

Note: By convention, the percentage is stored in the percentage field in the form up to two decimal places. For example, 45.00 for 45%, not 0.45.

Below are examples of calling this stored procedure:

```
mysql> select * from share;
+-----+-----+-----+-----+
| bus_id | afn_shareholder | percentage | ds_number |
+-----+-----+-----+-----+
| 18777  | 185200066      | 35.00    | 1         |
| 18777  | 185200067      | 25.00    | 1         |
| 18777  | 185200068      | 40.00    | 1         |
| 18777  | 172638020      | 15.00    | 1         |
| 18777  | 172638021      | 11.00    | 1         |
| 18777  | 172638022      | 5.00     | 1         |
| 18777  | 181560050      | 15.00    | 1         |
| 200001 | 101560050      | 50.00    | 1         |
| 264000 | 172638020      | 10.50    | 0         |
| 264000 | 172638021      | 20.00    | 1         |
| 264000 | 172638022      | 40.00    | 1         |
| 312000 | 172638020      | 120.00   | 1         |
| 54074  | 1000000012     | 25.00    | 1         |
+-----+-----+-----+-----+
13 rows in set (0.00 sec)

mysql> CALL handlePercentage(18777);
+-----+-----+
| Mexiko Symbolika Pozosta |
+-----+-----+
| 146.00 |
+-----+-----+
1 row in set (0.00 sec)

+-----+-----+
| Deleting AFM | Deleting Percentage |
+-----+-----+
| 185200068    | 40.00 |
+-----+-----+
1 row in set (0.01 sec)

+-----+-----+
| Mex Symbolika Pozosta |
+-----+-----+
| 106.00 |
+-----+-----+
1 row in set (0.06 sec)

+-----+-----+
| Deleting AFM | Deleting Percentage |
+-----+-----+
| 172638022    | 5.00 |
+-----+-----+
1 row in set (0.07 sec)

+-----+-----+
| Mex Symbolika Pozosta |
+-----+-----+
| 101.00 |
+-----+-----+
1 row in set (0.12 sec)

+-----+-----+
| Deleting AFM | Deleting Percentage |
+-----+-----+
| 172638021    | 11.00 |
+-----+-----+
1 row in set (0.13 sec)

+-----+-----+
| Mex Symbolika Pozosta |
+-----+-----+
| 90.00 |
+-----+-----+
1 row in set (0.17 sec)

Query OK, 0 rows affected (0.10 sec)
```

Triggers

1. A trigger that, before inserting a person, checks if the email is in the correct format (the simple <something>@<something_else>.<ext>). If not, it prevents the insertion.

2. A trigger that, before inserting a business into a chamber of commerce, checks whether the title is unique among the businesses belonging to that chamber. If it is not unique, it prevents the insertion.
3. A trigger that, before inserting the details of an audit by an auditor, checks whether the start date and end date are at least one week apart. If not, it modifies the end date so that it is exactly one week after the start date.

Note: Refer to MySQL's Date and Time functions ([MySQL Date and Time Functions](#)).