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# PROJECT ΕΡΓΑΣΤΗΡΙΟΥ ΒΑΣΕΩΝ ΔΕΔΟΜΕΝΩΝ

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ΚΥΡΙΑΚΗ 3 ΔΕΚΕΜΒΡΙΟΥ 2023

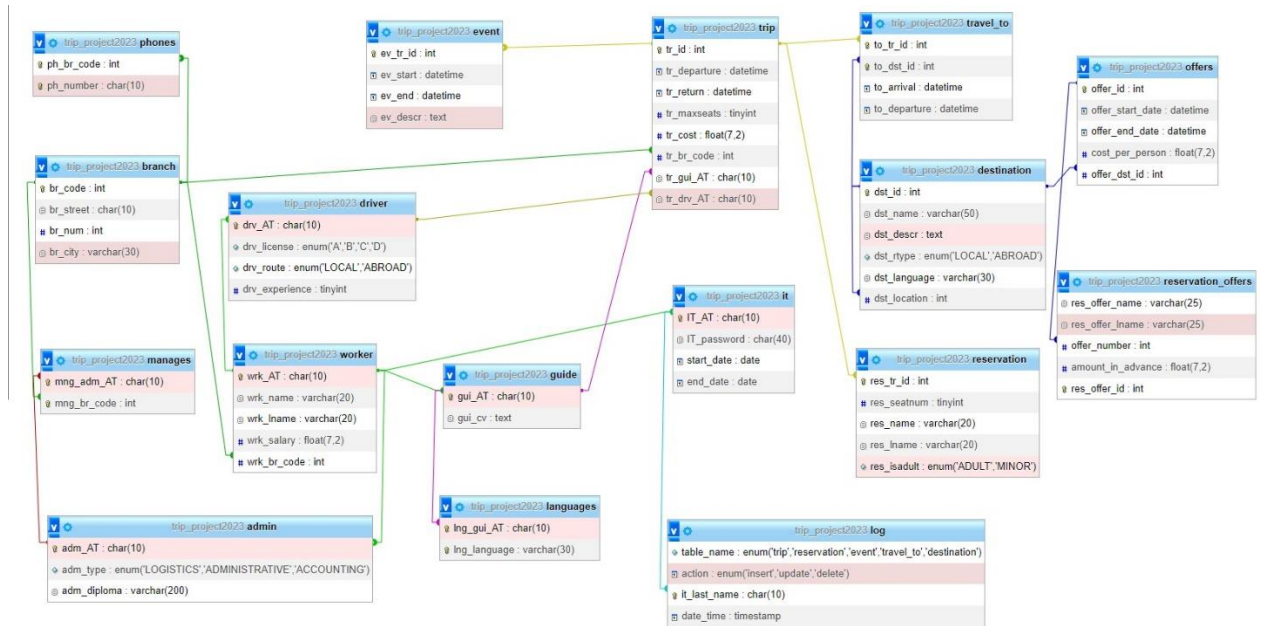
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# ΚΕΦΑΛΑΙΟ 1

## 1.1 Σχεσιακό διάγραμμα της συνολικής αναθεωρημένης ΒΔ.

Το ζητούμενο σχεσιακό διάγραμμα φαίνεται παρακάτω:



Οι νέοι πίνακες που δημιουργήθηκαν ήταν οι **it**, **log**, **offers** και **reservation\_offers**.

- Ο πίνακας **it** εκφράζει τον Υπεύθυνο Πληροφορικής, σύμφωνα με τις προδιαγραφές του ερωτήματος 3.1.2.1.
- Ο πίνακας **log** εκφράζει τις ενέργειες του Υπεύθυνου Πληροφορικής, σύμφωνα με τις προδιαγραφές του ερωτήματος 3.2.1. Το πεδίο **it\_last\_name** συσχετίζεται με το πεδίο **IT\_AT** του πίνακα **it** και περιέχει τα επίθετα των Υπεύθυνων Πληροφορικής, τα οποία θα αποτελέσουν και το **username** του καθενός στο σύστημα.
- Ο πίνακας **offers** εκφράζει τις προσφορές ταξιδιών που καταχωρούνται, σύμφωνα με τις προδιαγραφές του ερωτήματος 3.1.2.3. Το πεδίο **offer\_dst\_id** συσχετίζεται με το πεδίο **dst\_id** του πίνακα **destination**.
- Ο πίνακας **reservation\_offers** εκφράζουν τις κρατήσεις σε προσφορές ταξιδιών που καταχωρούνται, σύμφωνα με τις προδιαγραφές του ερωτήματος 3.1.2.3. Το πεδίο **offer\_number** συσχετίζεται με το πεδίο **offer\_id** του πίνακα **offers**, καθώς έτσι οι προσφορές ταξιδιών που θα υπάρχουν, θα έχουν και τον ανάλογο κωδικό για κράτηση.

## 1.2 Σύνολο εντολών για τη δημιουργία της ΒΔ.

Πρώτα, οι εντολές create φαίνονται παρακάτω:

```
create table branch(  
    br_code int(11) not null auto_increment,  
    br_street char(10) not null,  
    br_num int(4) not null,  
    br_city varchar(30) not null,  
    primary key(br_code)  
)engine=InnoDB;
```

```
create table phones(  
    ph_br_code int(11) not null auto_increment,  
    ph_number char(10) not null,  
    primary key(ph_br_code, ph_number),  
    foreign key(ph_br_code) references branch(br_code)  
        on delete cascade on update cascade  
)engine=InnoDB;
```

```
create table destination(  
    dst_id int(11) not null auto_increment,  
    dst_name varchar(50) not null,  
    dst_descr text,  
    dst_rtype enum('LOCAL','ABROAD'),
```

```
dst_language varchar(30) not null,  
dst_location int(11) not null,  
primary key(dst_id),  
foreign key(dst_location) references destination(dst_id)  
on delete cascade on update cascade  
)engine=InnoDB;
```

```
create table worker(  
wrk_AT char(10) not null,  
wrk_name varchar(20) default 'unknown' not null,  
wrk_lname varchar(20) default 'unknown' not null,  
wrk_salary float(7,2) not null,  
wrk_br_code int(11) not null,  
primary key(wrk_AT),  
foreign key(wrk_br_code) references branch(br_code)  
on delete cascade on update cascade  
)engine=InnoDB;
```

```
create table IT(  
IT_AT CHAR(10) DEFAULT 'Username',  
IT_password CHAR(40) DEFAULT 'Password',  
start_date DATE NOT NULL,  
end_date DATE,  
primary key(IT_AT),  
foreign key(IT_AT) references worker(wrk_AT)
```

```

        on delete cascade on update cascade
    )engine=InnoDB;

create table log (
    table_name enum('trip', 'reservation', 'event', 'travel_to', 'destination'),
    action enum('insert', 'update', 'delete'),
    it_last_name char(10),
    date_time TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    primary key(it_last_name),
    foreign key(it_last_name) references IT(IT_AT)
        on delete cascade on update cascade
    )engine=InnoDB;

```

```

create table guide(
    gui_AT char(10) not null,
    gui_cv text,
    primary key(gui_AT),
    foreign key(gui_AT) references worker(wrk_AT)
        on delete cascade on update cascade
    )engine=InnoDB;

```

```

create table languages(
    lng_gui_AT char(10) not null,
    lng_language varchar(30) not null,
    primary key(lng_gui_AT, lng_language),

```

```
foreign key(lng_gui_AT) references guide(gui_AT)
on delete cascade on update cascade
)engine=InnoDB;
```

```
create table driver(
drv_AT char(10) not null,
drv_license enum('A','B','C','D'),
drv_route enum('LOCAL','ABROAD'),
drv_experience tinyint(4) not null,
primary key(drv_AT),
foreign key(drv_AT) references worker(wrk_AT)
on delete cascade on update cascade
)engine=InnoDB;
```

```
create table admin(
adm_AT char(10) not null,
adm_type enum('LOGISTICS','ADMINISTRATIVE','ACCOUNTING'),
adm_diploma varchar(200) not null,
primary key(adm_AT),
foreign key(adm_AT) references worker(wrk_AT)
on delete cascade on update cascade
)engine=InnoDB;
```

```

create table manages(
    mng_adm_AT char(10) not null,
    mng_br_code int(11) not null,
    primary key(mng_adm_AT, mng_br_code),
    foreign key(mng_adm_AT) references admin(adm_AT)
        on delete cascade on update cascade,
    foreign key(mng_br_code) references branch(br_code)
        on delete cascade on update cascade
)engine=InnoDB;

```

```

create table trip(
    tr_id int(11) not null auto_increment,
    tr_departure datetime not null,
    tr_return datetime not null,
    tr_maxseats tinyint(4) not null,
    tr_cost float(7,2) not null,
    tr_br_code int(11) not null,
    tr_gui_AT char(10) not null,
    tr_drv_AT char(10) not null,
    primary key(tr_id),
    foreign key(tr_br_code) references branch(br_code)
        on delete cascade on update cascade,
    foreign key(tr_gui_AT) references guide(gui_AT)
        on delete cascade on update cascade,
    foreign key(tr_drv_AT) references driver(drv_AT)
        on delete cascade on update cascade
)

```



```
)engine=InnoDB;
```

```
create table event(  
  ev_tr_id int(11) not null auto_increment,  
  ev_start datetime not null,  
  ev_end datetime not null,  
  ev_descr text,  
  primary key(ev_tr_id),  
  foreign key(ev_tr_id) references trip(tr_id)  
    on delete cascade on update cascade  
)engine=InnoDB;
```

```
create table travel_to(  
  to_tr_id int(11) not null auto_increment,  
  to_dst_id int(11) not null,  
  to_arrival datetime not null,  
  to_departure datetime not null,  
  primary key(to_tr_id, to_dst_id),  
  foreign key(to_tr_id) references trip(tr_id)  
    on delete cascade on update cascade,  
  foreign key(to_dst_id) references destination(dst_id)  
    on delete cascade on update cascade  
)engine=InnoDB;
```

```

create table reservation(
    res_tr_id int(11) not null auto_increment,
    res_seatnum tinyint(4) not null,
    res_name varchar(20) default 'unknown' not null,
    res_lname varchar(20) default 'unknown' not null,
    res_isadult enum('ADULT','MINOR'),
    primary key(res_tr_id),
    foreign key(res_tr_id) references trip(tr_id)
        on delete cascade on update cascade
)engine=InnoDB;

```

```

create table offers(
    offer_id int(11) not null auto_increment,
    offer_start_date datetime,
    offer_end_date datetime,
    cost_per_person float(7,2),
    offer_dst_id int(11) not null,
    primary key(offer_id),
    foreign key(offer_dst_id) references destination(dst_id)
        on delete cascade on update cascade
)engine=InnoDB;

```

```

create table reservation_offers(
    res_offer_name varchar(25) default 'unknown' not null,
    res_offer_lname varchar(25) default 'unknown' not null,
    offer_number int(11) not null,

```

```

amount_in_advance float(7,2),
res_offer_id int(11) not null auto_increment,
primary key(res_offer_id),
foreign key(offer_number) references offers(offer_id)
on delete cascade on update cascade
)engine=InnoDB;

```

Έπειτα, οι εντολές για τα insert σε κάθε πίνακα φαίνονται παρακάτω:

### **Πίνακας branch**

```

insert into branch (br_code, br_street, br_num, br_city) values (3354, ' Moulton ', 2481, '
Yujin ');

insert into branch (br_code, br_street, br_num, br_city) values (1701, ' Dottie ', 2271, '
Dadamtu ');

insert into branch (br_code, br_street, br_num, br_city) values (2619, ' Vera ', 529, ' Bell Ville
');

insert into branch (br_code, br_street, br_num, br_city) values (3586, ' East ', 2060, '
Gostovići ');

insert into branch (br_code, br_street, br_num, br_city) values (3721, ' Sunfield ', 1722, ' El
Pao ');

insert into branch (br_code, br_street, br_num, br_city) values (2372, ' Derek ', 325, '
Śródmieście ');

insert into branch (br_code, br_street, br_num, br_city) values (1050, ' Trailsway ', 1200, '
Xiyang ');

insert into branch (br_code, br_street, br_num, br_city) values (3459, ' Towne ', 462, ' Puerta
de Corral Quemado ');

insert into branch (br_code, br_street, br_num, br_city) values (2057, ' Main ', 2554, ' Tan
Sum ');

insert into branch (br_code, br_street, br_num, br_city) values (1013, ' Lunder ', 81, '
Zhongxi ');

```

insert into branch (br\_code, br\_street, br\_num, br\_city) values (3727, ' Warner ', 145, ' Siak Sri Indrapura ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (3067, ' Bultman ', 2036, ' Kiboga ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (2236, ' Paget ', 26, ' Zafarwāl ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (3600, ' 3rd ', 1480, ' Hetou ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1546, ' Dawn ', 1001, ' Dhromolaxia ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (2154, ' Eggendart ', 2388, ' Moosomin ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (3626, ' Alpine ', 376, ' Frederico Westphalen ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (3429, ' Graceland ', 187, ' Shangping ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (2212, ' Memorial ', 2135, ' Klwów ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1349, ' Emmet ', 700, ' Saint-Rémi ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (3743, ' Huxley ', '160', ' El Pao ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1021, ' Packers ', '898', ' Luleå ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (0728, ' Hanson ', '784', ' Mamanguape ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1933, ' Mesta ', '749', ' Sūq al Khamīs ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (6340, ' Melvin ', '191', ' Changning ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (2566, ' Ronald Regan ', '494', ' Xiangdong ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1720, ' Blaine ', '667', ' Gominhães ');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (6804, 'Mayer', '948', 'Pasinan Barat');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (6729, 'Erie', '180', 'Garko');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (6101, 'Merry', '597', 'Praia da Barra');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (7528, 'Moland', '981', 'Xingfu');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1547, 'Dottie', '051', 'East End');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (2945, 'Pearson', '308', 'Balilā');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (5061, 'Tomscot', '771', 'Ibicaraí');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (2369, 'Milwaukee', '470', 'Sison');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (2278, 'Victoria', '252', 'Poitiers');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (0616, 'Monica', '178', 'Karlskrona');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (0029, 'Fallview', '764', 'Sâmraông');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (3597, 'Di Loreto', '683', 'Aygestan');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1192, 'Meadow Valley', '493', 'Rushankou');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1000, 'McCormick', 1, 'Nguluhan');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1001, 'Becker', 2, 'Bella Vista');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1002, 'Armistice', 3, 'Krajan Timur Suger Kidul');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1003, 'Lake View', 4, 'Halmstad');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1004, 'Pierstorff', 5, 'Caldono');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1005, 'Butterfield', 6, 'San Joaquin');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1006, 'Lakewood', 7, 'Mora');

insert into branch (br\_code, br\_street, br\_num, br\_city) values (1007, 'American Ash', 8, 'Jagüey Grande');

### **Πίνακας phones**

insert into phones values (3354, '694753689');

insert into phones values (1701, '698205739');

insert into phones values (2619, '693178290');

insert into phones values (3586, '697623904');

insert into phones values (3721, '694150893');

insert into phones values (2372, '698472031');

insert into phones values (1050, '697412589');

insert into phones values (3459, '694782016');

insert into phones values (2057, '698301467');

insert into phones values (1013, '693549821');

insert into phones values (3727, '697860124');

insert into phones values (3067, '694753689');

insert into phones values (2236, '693902476');

insert into phones values (3600, '697315084');

insert into phones values (1546, '698650231');

insert into phones values (2154, '693718294');

insert into phones values (3626, '697123580' );

insert into phones values (3429, '694328719');

insert into phones values (2212, '698916740' );

insert into phones values (1349, '693450812');

### Πίνακας destination

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (1, 'Moldova', 'Moldova, officially known as the Republic of Moldova, is a landlocked country located in Eastern Europe. It shares borders with Romania to the west and Ukraine to the north, east, and south. Despite being one of the smaller countries in Europe, Moldova boasts a rich history, unique cultural heritage, and picturesque landscapes.', 'LOCAL', 'Romanian', 1);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (2, 'Sweden', 'Sweden, officially known as the Kingdom of Sweden, is a captivating Scandinavian country situated in Northern Europe. It is known for its stunning natural beauty, rich history, progressive social policies, and a high standard of living. From vibrant cities to pristine landscapes, Sweden offers a diverse range of experiences for travelers to explore.', 'ABROAD', 'Swedish', 2);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (3, 'Indonesia', 'Indonesia, officially known as the Republic of Indonesia, is the world's largest archipelago nation, stretching between the Indian and Pacific Oceans. It is located between mainland Southeast Asia and Australia, and it shares borders with Malaysia, Papua New Guinea, Timor-Leste, and several other countries. Indonesia's diverse geography ranges from lush rainforests to active volcanoes, pristine beaches, and thriving coral reefs.', 'LOCAL', 'Indonesian', 3);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (4, 'Portugal', 'Portugal, officially known as the Portuguese Republic, is a captivating country located on the westernmost edge of the Iberian Peninsula in Southern Europe. Renowned for its rich history, stunning coastline, vibrant cities, and warm hospitality, Portugal has become an increasingly popular destination for travelers from around the world.', 'ABROAD', 'Portuguese', 4);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (5, 'France', 'France, officially known as the French Republic, is a country that holds a special place in the hearts of travelers and is often referred to as the "Hexagon" due to its distinctive shape. The country shares borders with several European nations, including Belgium, Luxembourg, Germany, Switzerland, Italy, Spain, and Andorra. Its extensive coastline faces the Atlantic Ocean to the west and the Mediterranean Sea to the south.', 'LOCAL', 'French', 5);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (6, 'Spain', 'Spain, officially known as the Kingdom of Spain, is a vibrant and diverse country located on the Iberian Peninsula in southwestern Europe. With a rich history, a

unique blend of cultures, and a wide range of landscapes, Spain has become one of the most popular tourist destinations in the world.', 'ABROAD', 'Swedish', 6);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (7, 'China', 'China, officially known as the Peoples Republic of China, is an ancient and vast country located in East Asia. With a history that spans thousands of years, China is one of the worlds oldest civilizations, known for its remarkable cultural heritage, diverse landscapes, and modern developments.', 'ABROAD', 'Cantonese', 7);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (8, 'Malaysia', 'Malaysia is a captivating and diverse country located in Southeast Asia, known for its vibrant cultural blend, stunning landscapes, and modern cities. The country is divided into two regions, Peninsular Malaysia and East Malaysia, which are separated by the South China Sea.', 'LOCAL', 'Malay', 8);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (9, 'Japan', 'Japan is a captivating island nation located in East Asia, known for its rich cultural heritage, cutting-edge technology, stunning natural landscapes, and unique blend of tradition and modernity. Comprising four main islands and thousands of smaller ones, Japan offers a diverse range of experiences for travelers.', 'ABROAD', 'Japanese', 9);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (10, 'United States', 'The United States, often referred to as the USA or America, is a vast and diverse country located in North America. It is the worlds third-largest country by land area and is known for its cultural melting pot, dynamic cities, natural wonders, and significant global influence.', 'LOCAL', 'English', 10);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (11, 'Greece', 'Greece is a mesmerizing country located in southeastern Europe, known for its ancient history, picturesque islands, stunning coastlines, and influential contributions to art, philosophy, and civilization. It is often referred to as the cradle of Western civilization, as it was the birthplace of democracy, theater, and the Olympic Games.', 'LOCAL', 'greek', 11);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (12, 'Russia', 'Russia is the largest country in the world, spanning both Eastern Europe and Northern Asia. It is a land of vast landscapes, rich history, and diverse cultures. From its imperial past to its significant contributions to literature, arts, and science, Russia holds a unique place in global affairs.', 'ABROAD', 'russian', 12);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location) values (13, 'Morocco', 'Morocco is a captivating country located in North Africa, boasting a unique blend of ancient traditions, diverse landscapes, and vibrant culture. From its bustling markets and vibrant cities to its stunning desert landscapes and beautiful coastline, Morocco offers a rich tapestry of experiences for travelers.', 'LOCAL', 'Darija', 13);



insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location)  
values (14, 'Armenia', 'Armenia is a fascinating and ancient country located in the South  
Caucasus region of Eurasia. As one of the oldest civilizations in the world, Armenia has a rich  
history, unique culture, and breathtaking landscapes.', 'ABROAD', 'armenian', 14);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location)  
values (15, 'Brazil', 'Brazil is the largest country in South America, covering nearly half of the  
continent's land area. It is a land of contrasts, offering a wide range of experiences for  
travelers. From the bustling metropolises of Rio de Janeiro and São Paulo to the serene  
Amazon rainforest and pristine beaches, Brazil is a destination that caters to a variety of  
interests.', 'ABROAD', 'brazilian', 15);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location)  
values (16, 'Kazakhstan', 'Kazakhstan is the world's largest landlocked country, situated in the  
heart of Central Asia. With a history that stretches back to ancient times and a mix of  
ethnicities and cultures, Kazakhstan offers a fascinating blend of tradition and modernity.',  
'ABROAD', 'Kazakh', 16);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location)  
values (17, 'Egypt', 'Egypt is an enchanting and historically significant country located in the  
northeastern corner of Africa, with a small portion of its territory extending into Southwest  
Asia, known as the Sinai Peninsula. Renowned for its ancient civilization and iconic  
landmarks, Egypt offers travelers a captivating journey through time and culture.', 'LOCAL',  
'arabic', 17);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location)  
values (18, 'Ireland', 'Ireland, also known as the Republic of Ireland, is a charming and  
picturesque island country located in Northwestern Europe. It is known for its stunning  
landscapes, rich cultural heritage, friendly people, and captivating folklore.', 'ABROAD',  
'irish', 18);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location)  
values (19, 'Iceland', 'Iceland is a captivating and otherworldly country located in the North  
Atlantic Ocean, near the Arctic Circle. Known for its dramatic landscapes, geothermal  
wonders, and vibrant cultural scene, Iceland has become a popular destination for travelers  
seeking unique experiences.', 'LOCAL', 'Icelandic', 19);

insert into destination (dst\_id, dst\_name, dst\_descr, dst\_rtype, dst\_language, dst\_location)  
values (20, 'Canada', 'Canada is a vast and diverse country located in North America, known  
for its stunning natural beauty, friendly people, and vibrant multicultural cities. As the  
second-largest country in the world by land area, Canada offers a wide range of experiences  
for travelers.', 'LOCAL', 'english', 20);

### Πίνακας worker

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('1Qru0', 'Rudyard', 'Mouncey', 1065.0, 3354);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('1c', 'Sky', 'Dybell', 1129.8, 1701);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('1Lco3', 'Carlie', 'Zamorrano', 2477.5, 2619);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('2o3w', 'Sebastian', 'Postins', 1940.0, 3586);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('1e3b', 'Nikos', 'Roseby', 1786.0, 3721);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('1h1u', 'Port', 'Pettus', 1784.5, 2372);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('6e4j', 'Amy', 'Larway', 1135.1, 1050);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('1t5r', 'Claude', 'Mander', 2155.0, 3459);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('6u5v', 'Dedra', 'Coaker', 2328.5, 2057);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('8b5k', 'Maurice', 'Ioanna', 1313.1, 1013);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('9o9m', 'Frannie', 'Wickwarth', 1229.2, 3727);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('5v4t', 'Carissa', 'Tyce', 2357.4, 3067);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('1t0i', 'Gwendolyn', 'Lordon', 2013.5, 2236);

insert into worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code) values ('4k3a', 'Rowland', 'Hoff', 1292.5, 3600);

```

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('8u0l',
'Dev', 'Iddons', 1740.0, 1546);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('4z3u',
'Jocelin', 'Walklot', 1040.5, 2154);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('3h2t',
'Olivette', 'Blakes', 1294.2, 3626);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('6x5d',
'Miriam', 'Gilbeart', 1489.7, 3429);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('6u2s',
'Rich', 'Mapledoram', 1146.3, 2212);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('0p4i',
'Wat', 'Hatchell', 1418.3, 1349);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('1p8c',
'Carola', 'Kerner', 1577.2, 3743);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('0o3o', 'Stefan', 'Cosley', 1212.5, 1021);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('6m0s', 'Yasmeen', 'Casbourne', 1544.1, 0728);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('5q5e', 'Kristos', 'Kilmary', 1208.4, 1933);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('3r3x',
'Alika', 'Blaxeland', 1885.6, 6340);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('2kh4',
'Bobbette', 'Rushbrook', 1471.5, 2566);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values ('7z5j',
'Barb', 'Beevers', 1289.0, 1720);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('5p9w', 'Alaster', 'Freeth', 1751.5, 6804);

```

```

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('8q9p', 'Lonna', 'O' Cuolahan', 1166.4, 6729);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('0Jyn5', 'Eleni', 'Mitchinson', 2472.0, 6101);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('1m2j', 'Marjy', 'Bannister', 1966.5, 7528);

insert into worker (wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('9Qub5', 'Gussie', 'Mainwaring', 1144.0, 1547);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('1d6q', 'Lyssa', 'Ledley', 1472.8, 2945);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('4q0f', 'Spenser', 'Staley', 1254.1, 5061);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('8z6a', 'Steward', 'Jopp', 1008.9, 2369);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('9g2o', 'Tawsha', 'Troy', 1317.0, 2278);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('1d7q', 'Gabbie', 'Nuscha', 1505.0, 0616);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('1j6v', 'Wynny', 'Gollin', 1604.1, 0029);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('7y2w', 'Noemi', 'Stanton', 1006.2, 3597);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('8v3m', 'Jennie', 'Bennis', 1930.6, 1192);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('6t4p', 'Milo', 'Spitell', 1610.8, 1000);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('1i4r', 'Alexio', 'Lifton', 1119.2, 1001);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('0z3x', 'Boigie', 'Halshaw', 1960.4, 1002);

insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values
('6d3l', 'Melody', 'Orgel', 1257.3, 1003);

```

```
insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values  
( '2u2p', 'Timmy', 'Raith', 1870.6, 1004);
```

```
insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values  
( '3j5e', 'Marve', 'Raunds', 1570.6, 1005);
```

```
insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values  
( '4e4m', 'Timofei', 'Ongin', 1414.8, 1006);
```

```
insert into worker ( wrk_AT, wrk_name, wrk_lname, wrk_salary, wrk_br_code) values  
( '8i9q', 'Balduin', 'Norvel', 1213.8, 1007);
```

### **Πίνακας it**

```
insert into it (IT_AT, IT_password, start_date, end_date) values ('0Jyn5', 'mforb181jFpKmL',  
'2023-05-18', '2023-10-18' );
```

```
insert into it (IT_AT, IT_password, start_date, end_date) values ('1c', 'glppu439?(l#2sE',  
'2023-10-15', '');
```

```
insert into it (IT_AT, IT_password, start_date, end_date) values ('1e3b', 'kqklq7364/bUQ*',  
'2022-11-02', '');
```

### **Πίνακας log**

```
insert into it (IT_AT, IT_password, start_date, end_date) values ('0Jyn5', 'mforb181jFpKmL',  
'2023-05-18', '2023-10-18' );
```

```
insert into it (IT_AT, IT_password, start_date, end_date) values ('1c', 'glppu439?(l#2sE',  
'2023-10-15', '');
```

```
insert into it (IT_AT, IT_password, start_date, end_date) values ('1e3b', 'kqklq7364/bUQ*',  
'2022-11-02', '');
```

### **Πίνακας guide**

```
insert into guide (gui_AT, gui_cv) values ('6u5v', 'Demonstrated exceptional multilingual  
abilities, offering guided tours in English, Spanish, and French to accommodate diverse  
international travelers.');
```

insert into guide (gui\_AT, gui\_cv) values ('8b5k', 'Provided language assistance and cultural context to non-English-speaking travelers, facilitating meaningful interactions with local communities.');

insert into guide (gui\_AT, gui\_cv) values ('9o9m', 'Developed language-focused itineraries and language learning materials to enhance the linguistic experience of travelers during the trip.');

insert into guide (gui\_AT, gui\_cv) values ('5v4t', 'In-depth knowledge of multiple destinations, including historical, cultural, and geographical highlights.');

insert into guide (gui\_AT, gui\_cv) values ('1t0i', 'Excellent communication and presentation skills');

insert into guide (gui\_AT, gui\_cv) values ('4k3a', 'Strong leadership and problem-solving abilities in various travel scenarios.');

insert into guide (gui\_AT, gui\_cv) values ('8u0l', 'Cultural sensitivity and ability to promote cross-cultural understanding.');

insert into guide (gui\_AT, gui\_cv) values ('4z3u', 'Customer-oriented approach and commitment to providing exceptional travel experiences.');

insert into guide (gui\_AT, gui\_cv) values ('3h2t', 'Led and organized adventure tours for groups of up to 15 travelers, ensuring seamless travel logistics and a memorable experience.');

insert into guide (gui\_AT, gui\_cv) values ('6x5d', 'Provided in-depth knowledge of destinations, including historical, cultural, and natural highlights, enhancing travelers understanding and appreciation of each location.');

insert into guide (gui\_AT, gui\_cv) values ('6u2s', 'Adapted tour itineraries to accommodate diverse traveler preferences and unforeseen circumstances, maintaining a high level of customer satisfaction.');

insert into guide (gui\_AT, gui\_cv) values ('0p4i', 'Demonstrated strong leadership and problem-solving skills during challenging situations, ensuring the safety and well-being of the group.');

insert into guide (gui\_AT, gui\_cv) values ('1p8c', 'Conducted educational and cultural tours for international groups, showcasing the rich heritage and traditions of various destinations.');

insert into guide (gui\_AT, gui\_cv) values ('0o3o', 'Delivered engaging and informative presentations on historical landmarks, art, architecture, and local customs, receiving positive feedback from travelers.');

insert into guide (gui\_AT, gui\_cv) values ('6m0s', 'Facilitated cross-cultural interactions and encouraged meaningful exchanges between travelers and locals to promote cultural understanding.');

insert into guide (gui\_AT, gui\_cv) values ('5q5e', 'Managed logistics, including transportation, accommodation, and restaurant reservations, ensuring a smooth and enjoyable travel experience.');

insert into guide (gui\_AT, gui\_cv) values ('3r3x', 'Proficient in travel logistics and itinerary planning.');

insert into guide (gui\_AT, gui\_cv) values ('7z5j', 'Delivered engaging and informative presentations on historical landmarks, art, architecture, and local customs, receiving positive feedback from travelers.');

insert into guide (gui\_AT, gui\_cv) values ('5p9w', 'Managed logistics, including transportation, accommodation, and restaurant reservations, ensuring a smooth and enjoyable travel experience.');

### **Πίνακας languages**

insert into languages (lng\_gui\_AT, lng\_language) values ('6u5v', 'Sotho');

insert into languages (lng\_gui\_AT, lng\_language) values ('8b5k', 'Burmese');

insert into languages (lng\_gui\_AT, lng\_language) values ('9o9m', 'Arabic');

insert into languages (lng\_gui\_AT, lng\_language) values ('5v4t', 'Icelandic');

insert into languages (lng\_gui\_AT, lng\_language) values ('1t0i', 'Japanese');

insert into languages (lng\_gui\_AT, lng\_language) values ('4k3a', 'Quechua');

insert into languages (lng\_gui\_AT, lng\_language) values ('8u0l', 'Pashto');

insert into languages (lng\_gui\_AT, lng\_language) values ('4z3u', 'Moldovan');

### **Πίνακας driver**

insert into driver (drv\_AT, drv\_license, drv\_route, drv\_experience) values ('8q9p', 'A', 'ABROAD', 1);

insert into driver (drv\_AT, drv\_license, drv\_route, drv\_experience) values ('0Jyn5', 'C', 'ABROAD', 3);

```

insert into driver (drv_AT, drv_license, drv_route, drv_experience) values ('1m2j', 'A',
'LOCAL', 2);

insert into driver (drv_AT, drv_license, drv_route, drv_experience) values ('9Qub5', 'D',
'ABROAD', 6);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('1d6q', 'A',
'LOCAL', 1);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('4q0f', 'B',
'ABROAD', 4);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('8z6a', 'C',
'LOCAL', 3);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('9g2o', 'D',
'LOCAL', 4);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('1d7q', 'A',
'ABROAD', 5);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('1j6v', 'B',
'ABROAD', 6);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('7y2w', 'C',
'LOCAL', 7);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('8v3m', 'D',
'ABROAD', 8);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('6t4p', 'A',
'ABROAD', 9);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('1i4r', 'B',
'LOCAL', 10);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('0z3x', 'C',
'ABROAD', 11);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('6d3l', 'D',
'LOCAL', 12);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('2u2p', 'A',
'ABROAD', 13);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('3j5e', 'B',
'LOCAL', 14);

insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('4e4m', 'C',
'ABROAD', 15);

```



```
insert into driver ( drv_AT, drv_license, drv_route, drv_experience) values ('8i9q', 'D',  
'LOCAL', 16);
```

### **Πίνακας admin**

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('1Qru0', 'ACCOUNTING',  
'JKL987');
```

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('1c', 'ACCOUNTING', 'GHI321');
```

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('1Lco3', 'LOGISTICS', 'JKL988');
```

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('2o3w', 'LOGISTICS', 'DEF789');
```

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('1e3b', 'LOGISTICS', 'DEF785');
```

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('1h1u', 'ACCOUNTING',  
'DEF786');
```

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('6e4j', 'ACCOUNTING',  
'XYZ456');
```

```
insert into admin (adm_AT, adm_type, adm_diploma) values ('1t5r', 'ADMINISTRATIVE',  
'DEF787');
```

### **Πίνακας manages**

```
insert into manages (mng_adm_AT, mng_br_code) values ('1Qru0', 3354 );
```

```
insert into manages (mng_adm_AT, mng_br_code) values ('1c', 1701);
```

```
insert into manages (mng_adm_AT, mng_br_code) values ('1Lco3', 2619);
```

```
insert into manages (mng_adm_AT, mng_br_code) values ('2o3w', 3586);
```

```
insert into manages (mng_adm_AT, mng_br_code) values ('1e3b', 3721);
```

```
insert into manages (mng_adm_AT, mng_br_code) values ('1h1u', 2372);
```

```
insert into manages (mng_adm_AT, mng_br_code) values ('6e4j', 1050);
```

```
insert into manages (mng_adm_AT, mng_br_code) values ('1t5r', 3459);
```

### Πίνακας trip

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (681, '2022-08-25', '2023-04-25', 1, 50.01, 3354, '6u5v', '8q9p');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (288, '2023-04-12', '2023-05-21', 2, 203.72, 1701, '8b5k', '0Jyn5');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (571, '2022-10-16', '2023-03-11', 3, 547.4, 2619, '9o9m', '1m2j');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (744, '2023-02-08', '2023-02-21', 4, 414.23, 3586, '5v4t', '9Qub5');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (614, '2023-06-10', '2023-06-11', 5, 588.83, 3721, '1t0i', '1d6q');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (554, '2022-10-02', '2023-03-10', 6, 521.08, 2372, '4k3a', '4q0f');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (576, '2023-02-26', '2023-02-14', 7, 211.7, 1050, '8u0l', '8z6a');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (257, '2023-05-14', '2023-04-08', 8, 153.31, 3459, '4z3u', '9g2o');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (219, '2023-03-05', '2023-03-17', 9, 229.04, 2057, '3h2t', '1d7q');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (205, '2022-10-26', '2022-08-10', 10, 157.25, 1013, '6x5d', '1j6v');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (665, '2022-11-09', '2023-01-31', 11, 161.83, 3727, '6u2s', '7y2w');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (694, '2022-11-04', '2023-04-30', 12, 577.65, 3067, '0p4i', '8v3m');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (272, '2022-11-03', '2023-02-26', 13, 569.24, 2236, '1p8c', '6t4p');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (303, '2023-07-13', '2023-06-07', 14, 414.96, 3600, '0o3o', '1i4r');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (627, '2023-03-09', '2022-08-13', 15, 537.12, 1546, '6m0s', '0z3x');

insert into trip (tr\_id, tr\_departure, tr\_return, tr\_maxseats, tr\_cost, tr\_br\_code, tr\_gui\_AT, tr\_drv\_AT) values (970, '2022-09-13', '2023-02-22', 16, 147.84, 2154, '5q5e', '6d3l');

```
insert into trip (tr_id, tr_departure, tr_return, tr_maxseats, tr_cost, tr_br_code, tr_gui_AT, tr_drv_AT) values (484, '2022-11-05', '2023-05-14', 17, 559.07, 3626, '3r3x', '2u2p');
```

```
insert into trip (tr_id, tr_departure, tr_return, tr_maxseats, tr_cost, tr_br_code, tr_gui_AT, tr_drv_AT) values (827, '2023-06-13', '2022-12-27', 19, 514.98, 2212, '7z5j', '4e4m');
```

```
insert into trip (tr_id, tr_departure, tr_return, tr_maxseats, tr_cost, tr_br_code, tr_gui_AT, tr_drv_AT) values (407, '2023-07-10', '2023-06-11', 20, 438.36, 1349, '5p9w', '8i9q');
```

### **Πίνακας event**

```
insert into event (ev_tr_id, ev_start, ev_end, ev_descr) values (681, '2023-05-30', '2023-07-08', 'By the River:
```

Slowly and amidst dense trees, the river water flows smoothly towards the sea. On the bank, the stones provide a comfortable throne for visitors to sit and enjoy the serenity of nature.');

```
insert into event (ev_tr_id, ev_start, ev_end, ev_descr) values (288, '2023-05-23', '2023-07-03', 'By the River:
```

Slowly and amidst dense trees, the river water flows smoothly towards the sea. On the bank, the stones provide a comfortable throne for visitors to sit and enjoy the serenity of nature.');

```
insert into event (ev_tr_id, ev_start, ev_end, ev_descr) values (571, '2023-05-03', '2023-07-16', 'In the Mountains:
```

We hike amidst tall mountains and dense forests. The breeze blows coolly, and birds chirp above our heads. The view from the summit is breathtaking, and we realize how small we are in this magnificent world.');

```
insert into event (ev_tr_id, ev_start, ev_end, ev_descr) values (744, '2023-05-12', '2023-07-10', 'At the Beach:
```

The waves roll onto the sandy shore, and our feet enjoy the sensation of relaxation. The sunset offers a unique spectacle with its changing colors in the sky. Its the perfect moment to savor the boundless beauty of nature.');

```
insert into event (ev_tr_id, ev_start, ev_end, ev_descr) values (614, '2023-05-14', '2023-07-16', 'In the City:
```

The streets are bustling with people in a hurry. Stores and cafes come alive with activity. Numerous towers on the horizon remind us of the citys past and future.');

```
insert into event (ev_tr_id, ev_start, ev_end, ev_descr) values (554, '2023-05-18', '2023-07-11', 'By the River:
```

Slowly and amidst dense trees, the river water flows smoothly towards the sea. On the bank, the stones provide a comfortable throne for visitors to sit and enjoy the serenity of nature.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (576, '2023-05-07', '2023-07-22', 'In the Mountains:

We hike amidst tall mountains and dense forests. The breeze blows coolly, and birds chirp above our heads. The view from the summit is breathtaking, and we realize how small we are in this magnificent world.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (257, '2023-05-16', '2023-07-13', 'In the Mountains:

We hike amidst tall mountains and dense forests. The breeze blows coolly, and birds chirp above our heads. The view from the summit is breathtaking, and we realize how small we are in this magnificent world.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (219, '2023-05-20', '2023-07-28', 'In the City:

The streets are bustling with people in a hurry. Stores and cafes come alive with activity. Numerous towers on the horizon remind us of the city's past and future.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (205, '2023-05-19', '2023-07-22', 'In the Mountains:

We hike amidst tall mountains and dense forests. The breeze blows coolly, and birds chirp above our heads. The view from the summit is breathtaking, and we realize how small we are in this magnificent world.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (665, '2023-05-01', '2023-07-21', 'In the City:

The streets are bustling with people in a hurry. Stores and cafes come alive with activity. Numerous towers on the horizon remind us of the city's past and future.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (694, '2023-05-28', '2023-07-07', 'In the City:

The streets are bustling with people in a hurry. Stores and cafes come alive with activity. Numerous towers on the horizon remind us of the city's past and future.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (272, '2023-05-04', '2023-07-07', 'At the Beach:

The waves roll onto the sandy shore, and our feet enjoy the sensation of relaxation. The sunset offers a unique spectacle with its changing colors in the sky. It's the perfect moment to savor the boundless beauty of nature.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (303, '2023-05-04', '2023-07-16', 'At the Beach:

The waves roll onto the sandy shore, and our feet enjoy the sensation of relaxation. The sunset offers a unique spectacle with its changing colors in the sky. Its the perfect moment to savor the boundless beauty of nature.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (627, '2023-05-04', '2023-07-12', 'By the River:

Slowly and amidst dense trees, the river water flows smoothly towards the sea. On the bank, the stones provide a comfortable throne for visitors to sit and enjoy the serenity of nature.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (970, '2023-05-20', '2023-07-24', 'At the Beach:

The waves roll onto the sandy shore, and our feet enjoy the sensation of relaxation. The sunset offers a unique spectacle with its changing colors in the sky. Its the perfect moment to savor the boundless beauty of nature.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (484, '2023-05-13', '2023-07-26', 'In the Mountains:

We hike amidst tall mountains and dense forests. The breeze blows coolly, and birds chirp above our heads. The view from the summit is breathtaking, and we realize how small we are in this magnificent world.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (827, '2023-05-27', '2023-07-26', 'In the Mountains:

We hike amidst tall mountains and dense forests. The breeze blows coolly, and birds chirp above our heads. The view from the summit is breathtaking, and we realize how small we are in this magnificent world.');

insert into event (ev\_tr\_id, ev\_start, ev\_end, ev\_descr) values (407, '2023-05-01', '2023-07-24', 'At the Beach:

The waves roll onto the sandy shore, and our feet enjoy the sensation of relaxation. The sunset offers a unique spectacle with its changing colors in the sky. Its the perfect moment to savor the boundless beauty of nature.');

### **Πίνακας travel\_to**

insert into travel\_to (to\_tr\_id, to\_dst\_id, to\_arrival, to\_departure) values (681, 1, '2022-10-27', '2022-08-31');

insert into travel\_to (to\_tr\_id, to\_dst\_id, to\_arrival, to\_departure) values (288, 2, '2022-08-11', '2022-12-11');

insert into travel\_to (to\_tr\_id, to\_dst\_id, to\_arrival, to\_departure) values (571, 3, '2023-04-10', '2022-10-19');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (744, 4, '2023-02-24', '2022-08-18');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (614, 5, '2022-10-05', '2022-08-30');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (554, 6, '2022-11-25', '2023-07-04');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (576, 7, '2023-03-09', '2022-10-08');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (257, 8, '2023-03-09', '2022-10-27');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (219, 9, '2023-04-02', '2023-01-21');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (205, 10, '2023-01-15', '2022-11-08');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (665, 11, '2022-10-16', '2022-08-28');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (694, 12, '2023-04-03', '2022-12-23');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (272, 13, '2023-03-02', '2022-08-09');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (303, 14, '2023-07-31', '2023-07-27');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (627, 15, '2022-12-16', '2023-05-15');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (970, 16, '2022-11-21', '2023-02-02');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (484, 17, '2022-08-27', '2023-04-24');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (827, 19, '2022-12-19', '2023-01-17');

insert into travel\_to(to\_tr\_id,to\_dst\_id,to\_arrival,to\_departure) values (407, 20, '2023-07-09', '2023-05-08');

### Πίνακας reservation

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(681, 1, 'Ladonna', 'Kaveney', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(288, 1, 'Libbey', 'Jefferson', 'MINOR');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(571, 3, 'Ermin', 'Bodd', 'MINOR');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(744, 1, 'Waneta', 'Uzzell', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(614, 3, 'Ingrim', 'Kemston', 'MINOR');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(554, 2, 'Wenonah', 'Glazzard', 'MINOR');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(576, 1, 'Fidelia', 'Rennock', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(257, 2, 'Adelle', 'Ellinor', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(219, 1, 'Jone', 'Baunton', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(205, 1, 'Perry', 'Drackford', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(665, 1, 'Roarke', 'Lamping', 'MINOR');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(694, 3, 'Gabriel', 'Gaspar', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(272, 2, 'Coop', 'Luchetti', 'MINOR');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(303, 1, 'Mariya', 'Kayzer', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(627, 3, 'Cacilia', 'Benedidick', 'ADULT');

insert into reservation(res\_tr\_id, res\_seatnum, res\_name, res\_lname, res\_isadult) values  
(970, 3, 'Robb', 'Lestor', 'MINOR');

```
insert into reservation(res_tr_id, res_seatnum, res_name, res_lname, res_isadult) values  
(484, 3, 'Hanna', 'Fleming', 'MINOR');
```

```
insert into reservation(res_tr_id, res_seatnum, res_name, res_lname, res_isadult) values  
(827, 2, 'Sheree', 'Lubeck', 'MINOR');
```

```
insert into reservation(res_tr_id, res_seatnum, res_name, res_lname, res_isadult) values  
(407, 1, 'Cyb', 'Busher', 'ADULT');
```

### Πίνακας reservation\_offers

Επειδή οι εγγραφές ήταν πάρα πολλές, τις έχουμε συμπεριλάβει στο zip αρχείο σε 3 txt αρχεία(ένα για κάθε κωδικό).

### Πίνακας offers

```
insert into offers (offer_id, offer_start_date, offer_end_date, cost_per_person, offer_dst_id)  
values (1, '2022-08-22', '2023-01-10', 784.43, 1);
```

```
insert into offers (offer_id, offer_start_date, offer_end_date, cost_per_person, offer_dst_id)  
values (2, '2022-11-09', '2023-04-12', 852.23, 2);
```

```
insert into offers (offer_id, offer_start_date, offer_end_date, cost_per_person, offer_dst_id)  
values (3, '2022-11-24', '2023-03-16', 789.74, 3);
```

Μερικές παραδοχές για τα insert είναι οι εξής:

- Ο πίνακας worker περιλαμβάνει 48 εγγραφές και όχι 20, καθώς θέλαμε να ισομοιάσουμε τις εγγραφές στους πίνακες admin, guide και driver ώστε να μην υπάρχει θέμα με τις εγγραφές στον πίνακα trip(ο admin πήρε 8 εγγραφές με τα πρώτα 8 wrk\_AT του worker, ο guide 19 και ο driver 20). Επειδή και ο πίνακας branch συσχετίζεται με τον worker, εισάγαμε και σε αυτόν 48 εγγραφές, ώστε να μην εμφανίζονται σχετικά errors.
- Οι 60000 εγγραφές στον πίνακα reservation\_offers εισήχθησαν με τον εξής τρόπο: το αρχείο που υπήρχε στο eclass με τα ονόματα το μετατρέψαμε σε excel. Ύστερα, οι τιμές 1, 2, 3(οι κωδικοί του πίνακα offers) εισήχθησαν ως σταθερές σε κάθε περίπτωση και τα ποσά υπολογίστηκαν με την χρήση της συνάρτησης RANDBETWEEN(50, 200).

**ΣΗΜΕΙΩΣΗ:** Τόσο τα create όσο και τα insert, έχουν δημιουργηθεί με την απαιτούμενη σειρά, ώστε να μην επηρεάζονται οι συσχετίσεις μεταξύ των πινάκων.



## ΚΕΦΑΛΑΙΟ 2

### Κώδικας των stored procedures και παραδείγματα.

- Ο κώδικας του stored για το ερώτημα 3.1.3.1 είναι ο εξής:

```
DELIMITER $

create procedure AddDriver (

    IN d_id char(10),

    IN d_first_name VARCHAR(20),

    IN d_last_name VARCHAR(20),

    IN d_salary FLOAT(7,2),

    IN d_license_type ENUM('A', 'B', 'C', 'D'),

    IN d_route_type ENUM('LOCAL', 'ABROAD'),

    IN d_months_of_experience TINYINT(4)

)

BEGIN

    -- Declare variables

    DECLARE v_min_drivers INT;

    DECLARE v_min_drivers_branch_code INT;

    -- Find the branch with the fewest drivers

    SELECT br_code, COUNT(*) AS num_drivers

    FROM branch

    INNER JOIN worker ON wrk_br_code = br_code

    INNER JOIN driver ON drv_AT = wrk_AT

    GROUP BY br_code

    ORDER BY num_drivers ASC
```

LIMIT 1

INTO v\_min\_drivers\_branch\_code, v\_min\_drivers;

-- Insert the new driver into the worker table

INSERT INTO worker (wrk\_AT, wrk\_name, wrk\_lname, wrk\_salary, wrk\_br\_code)

VALUES (d\_id, d\_first\_name, d\_last\_name, d\_salary, v\_min\_drivers\_branch\_code);

-- Insert the new driver into the driver table

INSERT INTO driver (drv\_AT, drv\_license, drv\_route, drv\_experience)

VALUES (d\_id, d\_license\_type, d\_route\_type, d\_months\_of\_experience);

END\$

Αρχικά, δείχνουμε τον αριθμό των εγγραφών στους πίνακες worker και driver, όπως φαίνεται στα παρακάτω screenshots:

```
mysql> select * from worker;
```

wrk_AT	wrk_name	wrk_lname	wrk_salary	wrk_br_code
0Jyn5	Eleni	Mitchinson	2472.00	6101
0o3o	Stefan	Cosley	1212.50	1021
0p4i	Wat	Hatchell	1418.30	1349
0z3x	Boigie	Halshaw	1960.40	1002
1c	Sky	Dybell	1129.80	1701
1d6q	Lyssa	Ledley	1472.80	2945
1d7q	Gabbie	Nuscha	1505.00	616
1e3b	Nikos	Roseby	1786.00	3721
1h1u	Port	Pettus	1784.50	2372
1i4r	Alexio	Lifton	1119.20	1001
1j6v	Wynny	Gollin	1604.10	29
1lco3	Charlie	Zamorrano	2477.50	2619
1m2j	Marjy	Bannister	1966.50	7528
1p8c	Carola	Kerner	1577.20	3743
1Qru0	Rudyard	Mouncey	1065.00	3354
1t0i	Gwendolyn	London	2013.50	2236
1t5r	Claude	Mander	2155.00	3459
2kh4	Bobbette	Rushbrook	1471.50	2566
2o3w	Sebastian	Postins	1940.00	3586
2u2p	Timmy	Raith	1870.60	1004
3h2t	Olivette	Blakes	1294.20	3626
3j5e	Marve	Raunds	1570.60	1005
3r3x	Alika	Blaxeland	1885.60	6340
4e4m	Timofei	Ongin	1414.80	1006
4k3a	Rowland	Hoff	1292.50	3600
4q0f	Spenser	Staley	1254.10	5061
4z3u	Jocelin	Walklot	1040.50	2154
5p9w	Alaster	Freeth	1751.50	6804
5q5e	Kristos	Kilmory	1208.40	1933
5v4t	Carissa	Tyce	2357.40	3067
6d3l	Melody	Orgel	1257.30	1003
6e4j	Amy	Larway	1135.10	1050
6m0s	Yasmeen	Casbourne	1544.10	728
6t4p	Milo	Spitell	1610.80	1000
6u2s	Rich	Mapledoram	1146.30	2212
6u5v	Dedra	Coaker	2328.50	2057
6x5d	Miriam	Gilbeart	1489.70	3429
7y2w	Noemi	Stanton	1006.20	3597
7z5j	Barb	Beevers	1289.00	1720
8b5k	Maurice	Ioanna	1313.10	1013
8i0q	Balduin	Norvel	1213.80	1007
8q0p	Lonna	O' Cuolahan	1166.40	6729
8u0l	Dev	Iddons	1740.00	1546
8v3m	Jennie	Bennis	1930.60	1192
8z6a	Steward	Jopp	1008.90	2369
9g2o	Tawsha	Troy	1317.00	2278
9o9m	Frannie	Wickwarth	1229.20	3727
9Qub5	Gussie	Mainwaring	1144.00	1547

48 rows in set (0.00 sec)

```
mysql> select * from driver;
```

drv_AT	drv_license	drv_route	drv_experience
0Jyn5	C	ABROAD	3
0z3x	C	ABROAD	11
1d6q	A	LOCAL	1
1d7q	A	ABROAD	5
1i4r	B	LOCAL	10
1j6v	B	ABROAD	6
1m2j	A	LOCAL	2
2u2p	A	ABROAD	13
3j5e	B	LOCAL	14
4e4m	C	ABROAD	15
4q0f	B	ABROAD	4
6d3l	D	LOCAL	12
6t4p	A	ABROAD	9
7y2w	C	LOCAL	7
8i9q	D	LOCAL	16
8q9p	A	ABROAD	1
8v3m	D	ABROAD	8
8z6a	C	LOCAL	3
9g2o	D	LOCAL	4
9Qub5	D	ABROAD	6

20 rows in set (0.00 sec)

Μετά, με το **SELECT br\_code, COUNT(\*) AS num\_driver FROM branch INNER JOIN worker ON wrk\_br\_code = br\_code INNER JOIN driver ON drv\_AT = wrk\_AT GROUP BY br\_code ORDER BY num\_drivers ASC** από των κώδικα της procedure, δείχνουμε τον αριθμό των οδηγών που έχει κάθε υποκατάστημα, όπως φαίνεται στο παρακάτω screenshot:

```
mysql> SELECT br_code, COUNT(*) AS num_drivers
-> FROM branch
-> JOIN worker ON wrk_br_code = br_code
-> JOIN driver ON drv_AT = wrk_AT
-> GROUP BY br_code
-> ORDER BY num_drivers ASC
-> ;
```

br_code	num_drivers
6101	1
1002	1
2945	1
616	1
1001	1
29	1
7528	1
1004	1
1005	1
1006	1
5061	1
1003	1
1000	1
3597	1
1007	1
6729	1
1192	1
2369	1
2278	1
1547	1

20 rows in set (0.00 sec)

Η stored θα εντοπίσει το υποκατάστημα με τους λιγότερους οδηγούς(εδώ έτυχε να έχουν όλα από έναν οδηγό). Όταν καλούμε την stored με την εντολή και τα αντίστοιχα ορίσματα **call AddDriver('9gke', 'Dennis', 'Kapelles', 1065.00, 'D', 'ABROAD', 30)**; δείχνει ότι η αλλαγή έχει πραγματοποιηθεί. Για να το επαληθεύσουμε, με τις αντίστοιχες εντολές **select** επιλέγουμε όλες τις εγγραφές των πινάκων worker και driver για να δούμε τελικά ότι έχει προστεθεί επιτυχώς ο νέος οδηγός, όπως φαίνεται και στα παρακάτω screenshots:

```
mysql> call AddDriver('9gke', 'Dennis', 'Kapelles', 1065.00, 'D', 'ABROAD')
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from worker;
```

wrk_AT	wrk_name	wrk_lname	wrk_salary	wrk_br_code
0Jyn5	Eleni	Mitchinson	2472.00	6101
0o3o	Stefan	Cosley	1212.50	1021
0p4i	Wat	Hatchell	1418.30	1349
0z3x	Boigie	Halshaw	1908.40	1002
1c	Sky	Dybell	1129.80	1701
1d6q	Lyssa	Ledley	1472.80	2945
1d7q	Gabbie	Nuscha	1505.00	616
1e3b	Nikos	Roseby	1786.00	3721
1h1u	Port	Pettus	1784.50	2372
1i4r	Alexio	Lifton	1119.20	1001
1j6v	Wynny	Gollin	1604.10	29
1lco3	Carlie	Zamorran	2477.50	2619
1m2j	Marjy	Bannister	1966.50	7528
1p0c	Carola	Kerner	1577.20	3743
1Qw0	Rudyard	Mouncey	1005.00	3354
1t0i	Gwendolyn	London	2013.50	2236
1t5r	Claude	Mander	2155.00	3459
2kh4	Bobette	Rushbrook	1471.50	2566
2o3w	Sebastian	Postins	1940.00	3586
2u2p	Timmy	Raith	1878.60	1004
3h2t	Olivette	Blakes	1294.20	3626
3j5e	Marve	Raunds	1570.60	1005
3r3x	Alika	Blaxland	1885.60	6340
4e4m	Timofei	Ongin	1414.00	1006
4k3a	Rowland	Hoff	1292.50	3600
4q0f	Spenser	Staley	1254.10	5061
4z3u	Jocelin	Walklot	1040.50	2154
5p9w	Alaster	Freeth	1751.50	6804
5q5e	Kristos	Kilmory	1200.40	1933
5ydt	Carlissa	Tyce	2357.40	3807
6d3l	Melody	Orgel	1257.30	1003
6e4j	Amy	Larway	1135.10	1050
6m0s	Yasmeen	Casbourne	1544.10	728
6t4p	Milo	Spittell	1610.80	4000
6u2s	Rich	Mepledoram	1146.30	2212
6u5v	Dedra	Coaker	2328.50	2057
6x5d	Miriam	Gilbeart	1489.70	3429
7y2w	Noemi	Stanton	1006.20	3597
7z5j	Barb	Beavers	1200.60	1720
8b3k	Maurice	Ioanna	1313.10	1013
8i9q	Baldwin	Norvel	1213.80	1007
8q9p	Lonna	O' Cuolahan	1166.40	6729
8u0l	Dev	Iddons	1740.00	1546
8v2m	Jennie	Dennis	1920.60	1192
8z6a	Steward	Jopp	1008.90	2369
9g2o	Tawsha	Troy	1317.00	2278
9gke	Dennis	Kapelles	1065.00	6101
9o9m	Frannie	Wickwarth	1229.20	3727
9Qub5	Gussie	Mainwaring	1144.00	1547

49 rows in set (0.00 sec)

```
mysql> select * from driver;
```

drv_AT	drv_license	drv_route	drv_experience
0Jyn5	C	ABROAD	3
0z3x	C	ABROAD	11
1d6q	A	LOCAL	1
1d7q	A	ABROAD	5
1i4r	B	LOCAL	10
1j6v	B	ABROAD	6
1m2j	A	LOCAL	2
2u2p	A	ABROAD	13
3j5e	B	LOCAL	14
4e4m	C	ABROAD	15
4q0f	B	ABROAD	4
6d3l	D	LOCAL	12
6t4p	A	ABROAD	9
7y2w	C	LOCAL	7
8i9q	D	LOCAL	16
8q9p	A	ABROAD	1
8v3m	D	ABROAD	8
8z6a	C	LOCAL	3
9g2o	D	LOCAL	4
9gke	D	ABROAD	30
9Qub5	D	ABROAD	6

21 rows in set (0.00 sec)

Αν δείξουμε πάλι τον αριθμό των οδηγών με τις ίδιες εντολές, θα παρατηρήσουμε ότι το τελευταίο υποκατάστημα έχει 2 οδηγούς, που σημαίνει ότι η stored λειτουργεί πλήρως:

```
mysql> SELECT br_code, COUNT(*) AS num_drivers
-> FROM branch
-> JOIN worker ON wrk_br_code = br_code
-> JOIN driver ON drv_AT = wrk_AT
-> GROUP BY br_code
-> ORDER BY num_drivers ASC ;
```

br_code	num_drivers
1002	1
2945	1
616	1
1001	1
29	1
7528	1
1004	1
1005	1
1006	1
5061	1
1003	1
1000	1
3597	1
1007	1
6729	1
1192	1
2369	1
2278	1
1547	1
6101	2

20 rows in set (0.00 sec)

➤ Ο κώδικας του stored για το ερώτημα 3.1.3.2 είναι ο εξής:

DELIMITER \$

```
create procedure get_trips_by_branch_and_dates(IN code int(11), IN start_date DATE, IN
end_date DATE)
```

BEGIN

```
SELECT tr_cost, tr_maxseats, count(*) AS num_reservations, tr_maxseats - count(*) AS
vacant_seats, tr_maxseats, worker1.wrk_name AS driver_name, worker1.wrk_lname AS
driver_lname, worker2.wrk_name AS guide_name, worker2.wrk_lname AS guide_lname,
tr_departure, tr_return
```

```
FROM trip
```

```
INNER JOIN driver on drv_AT=tr_drv_AT
```

```
INNER JOIN guide on gui_AT=tr_gui_AT
```

```
INNER JOIN worker AS worker1 on (worker1.wrk_AT=drv_AT)
```

```
INNER JOIN worker AS worker2 on (worker2.wrk_AT=gui_AT)
```

```
WHERE tr_br_code=code AND tr_departure BETWEEN start_date AND end_date;
```

END\$

Όταν καλούμε την stored με την εντολή και τα αντίστοιχα ορίσματα **call** **get\_trips\_by\_branch\_and\_dates(1013, '2022-01-01', '2023-01-01');** εμφανίζει τα ζητούμενα του ερωτήματος, όπως φαίνεται και στο παρακάτω screenshot:

```
mysql> call get_trips_by_branch_and_dates(1013, '2022-01-01', '2023-01-01');
```

tr_cost	tr_maxseats	count(*)	vacant_seats	tr_maxseats	driver_name	driver_lname	guide_name	guide_lname	tr_departure	tr_return
157.25	10	1	9	10	Wynny	Gollin	Miriam	Gilbeart	2022-10-26 00:00:00	2022-08-10 00:00:00

```
1 row in set (0.01 sec)
Query OK, 0 rows affected (0.01 sec)
```

Αν στο προηγούμενο **call** αλλάξουμε την πρώτη ημερομηνία και η ημερομηνία αναχώρησης δεν είναι μέσα στο διάστημα που δόθηκε, θα εμφανιστεί το εξής:

```
mysql> call get_trips_by_branch_and_dates(1013, '2022-10-27', '2023-01-01');
```

tr_cost	tr_maxseats	count(*)	vacant_seats	tr_maxseats	driver_name	driver_lname	guide_name	guide_lname	tr_departure	tr_return
NULL	NULL	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
1 row in set (0.00 sec)
Query OK, 0 rows affected (0.01 sec)
```

Που σημαίνει, ότι δεν υπάρχει ταξίδι με τα δεδομένα που εισήχθησαν στο **call**.

Σημείωση: Για να δούμε το σύνολο των κρατήσεων σε κάθε ταξίδι, χρησιμοποιούμε το παρακάτω block κώδικα:

```
select count(*) AS num_reservations
from reservation
inner join trip on tr_id=res_tr_id
group by tr_id
order by num_reservations;
```

- Ο κώδικας του stored για το ερώτημα 3.1.3.3 είναι ο εξής:

```
DELIMITER $
```

```
create procedure delete_employee(
```

```
    first_name VARCHAR(20),
```

```
    last_name VARCHAR(20)
```

```
)
```

```
BEGIN
```

```
-- Check if the employee is administrative
```

```
IF EXISTS (
```

```
    SELECT *
```

```

FROM worker

INNER JOIN admin on wrk_AT=adm_AT

WHERE wrk_name = first_name

AND wrk_lname = last_name

AND adm_type = 'ADMINISTRATIVE'

) THEN

-- Delete the employee

DELETE FROM worker

WHERE wrk_name = first_name

AND wrk_lname = last_name;

ELSE IF EXISTS

-- Check if the employee is a manager

(

SELECT *

FROM worker

INNER JOIN admin on wrk_AT=adm_AT

INNER JOIN manages on adm_AT=mng_adm_AT

WHERE wrk_name = first_name

AND wrk_lname = last_name

AND adm_AT = mng_adm_AT

) THEN

-- Display a message that the employee is a manager and cannot be deleted

SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'The employee is a manager and cannot
be deleted.';

ELSE

SELECT 'No action available';

END IF;

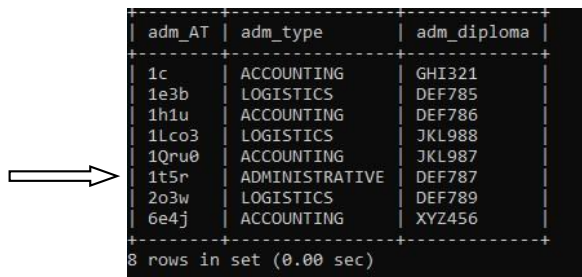
END IF;

```

END\$

Η συγκεκριμένη stored θέλαμε να επιτυγχάνει δύο λειτουργίες, ανάλογα με τα ορίσματα που είχε.

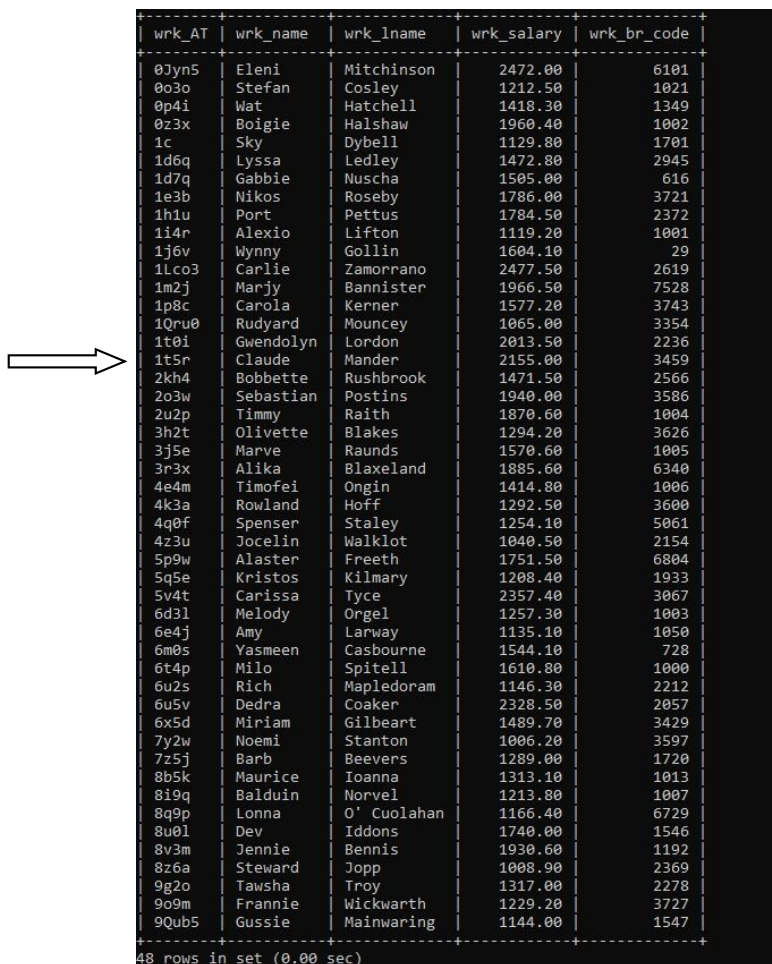
- ✓ Η πρώτη λειτουργία, δηλαδή να σβήνει έναν διοικητικό υπάλληλο επιτυγχάνεται με το `call delete_employee('Claude', 'Mander');`. Η συγκεκριμένη υπάλληλος, έχει wrk\_AT το 1t5r και είναι διοικητικός όπως φαίνεται στο παρακάτω screenshot:



adm_AT	adm_type	adm_diploma
1c	ACCOUNTING	GHI321
1e3b	LOGISTICS	DEF785
1h1u	ACCOUNTING	DEF786
1Lco3	LOGISTICS	JKL988
1Qru0	ACCOUNTING	JKL987
1t5r	ADMINISTRATIVE	DEF787
2o3w	LOGISTICS	DEF789
6e4j	ACCOUNTING	XYZ456

8 rows in set (0.00 sec)

Επίσης υπάρχει και στον πίνακα worker όπως φαίνεται παρακάτω:



wrk_AT	wrk_name	wrk_lname	wrk_salary	wrk_br_code
0Jyn5	Eleni	Mitchinson	2472.00	6101
0o3o	Stefan	Cosley	1212.50	1021
0p4i	Wat	Hatchell	1418.30	1349
0z3x	Boigie	Halshaw	1960.40	1002
1c	Sky	Dybell	1129.80	1701
1d6q	Lyssa	Ledley	1472.80	2945
1d7q	Gabbie	Nuscha	1505.00	616
1e3b	Nikos	Roseby	1786.00	3721
1h1u	Port	Pettus	1784.50	2372
1i4r	Alexio	Lifton	1119.20	1001
1j6v	Wynny	Gollin	1604.10	29
1Lco3	Carlie	Zamorrano	2477.50	2619
1m2j	Marjy	Bannister	1966.50	7528
1p8c	Carola	Kerner	1577.20	3743
1Qru0	Rudyard	Mouncey	1065.00	3354
1t0i	Gwendolyn	London	2013.50	2236
1t5r	Claude	Mander	2155.00	3459
2kh4	Bobbette	Rushbrook	1471.50	2566
2o3w	Sebastian	Postins	1940.00	3586
2u2p	Timmy	Raith	1870.60	1004
3h2t	Olivette	Blakes	1294.20	3626
3j5e	Marve	Raunds	1570.60	1005
3r3x	Alika	Blaxeland	1885.60	6340
4e4m	Timofei	Ongin	1414.80	1006
4k3a	Rowland	Hoff	1292.50	3600
4q0f	Spenser	Staley	1254.10	5061
4z3u	Jocelin	Walklot	1040.50	2154
5p9w	Alaster	Freeth	1751.50	6804
5q5e	Kristos	Kilmary	1208.40	1933
5v4t	Carissa	Tyce	2357.40	3067
6d3l	Melody	Orgel	1257.30	1003
6e4j	Amy	Larway	1135.10	1050
6m0s	Yasmeen	Casbourne	1544.10	728
6t4p	Milo	Spitell	1610.80	1000
6u2s	Rich	Mapledoram	1146.30	2212
6u5v	Dedra	Coaker	2328.50	2057
6x5d	Miriam	Gilbeart	1489.70	3429
7y2w	Noemi	Stanton	1006.20	3597
7z5j	Barb	Beevers	1289.00	1720
8b5k	Maurice	Ioanna	1313.10	1013
8i9q	Balduin	Norvel	1213.80	1007
8q9p	Lonna	O' Cuolahan	1166.40	6729
8u0l	Dev	Iddons	1740.00	1546
8v3m	Jennie	Bennis	1930.60	1192
8z6a	Steward	Jopp	1008.90	2369
9g2o	Tawsha	Troy	1317.00	2278
9o9m	Frannie	Wickwarth	1229.20	3727
9Qub5	Gussie	Mainwaring	1144.00	1547

48 rows in set (0.00 sec)

Όταν καλούμε την stored με το `call delete_employee('Claude', 'Mander');` διαγράφεται επιτυχώς και από τους δύο πίνακες όπως φαίνεται στα παρακάτω screenshots:



```
mysql> call delete_employee('Claude', 'Mander');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from admin;
```

adm_AT	adm_type	adm_diploma
1c	ACCOUNTING	GHI321
1e3b	LOGISTICS	DEF785
1h1u	ACCOUNTING	DEF786
1Lco3	LOGISTICS	JKL988
1Qru0	ACCOUNTING	JKL987
2o3w	LOGISTICS	DEF789
6e4j	ACCOUNTING	XYZ456

7 rows in set (0.00 sec)

```
mysql> select * from worker;
```

wrk_AT	wrk_name	wrk_lname	wrk_salary	wrk_br_code
0Jyn5	Eleni	Mitchinson	2472.00	6101
0o3o	Stefan	Cosley	1212.50	1021
0p4i	Wat	Hatchell	1418.30	1349
0z3x	Boigie	Halshaw	1960.40	1002
1c	Sky	Dybell	1129.80	1701
1d6q	Lyssa	Ledley	1472.80	2945
1d7q	Gabbie	Nuscha	1505.00	616
1e3b	Nikos	Roseby	1786.00	3721
1h1u	Port	Pettus	1784.50	2372
1i4r	Alexio	Lifton	1119.20	1001
1j6v	Wynny	Gollin	1604.10	29
1Lco3	Carlie	Zamorrano	2477.50	2619
1m2j	Marjy	Bannister	1966.50	7528
1p8c	Carola	Kerner	1577.20	3743
1Qru0	Rudyard	Mouncey	1065.00	3354
1t0i	Gwendolyn	London	2013.50	2236
2kh4	Bobbette	Rushbrook	1471.50	2566
2o3w	Sebastian	Postins	1940.00	3586
2u2p	Timmy	Raith	1870.60	1004
3h2t	Olivette	Blakes	1294.20	3626
3j5e	Marve	Raunds	1570.60	1005
3r3x	Alika	Blaxeland	1885.60	6340
4e4m	Timofei	Ongin	1414.80	1006
4k3a	Rowland	Hoff	1292.50	3600
4q0f	Spenser	Staley	1254.10	5061
4z3u	Jocelin	Walklot	1040.50	2154
5p9w	Alaster	Freeth	1751.50	6804
5q5e	Kristos	Kilmory	1208.40	1933
5v4t	Carissa	Tyce	2357.40	3067
6d3l	Melody	Ongel	1257.30	1003
6e4j	Amy	Larway	1135.10	1050
6m0s	Yasmeen	Casbourne	1544.10	728
6t4p	Milo	Spitell	1610.80	1000
6u2s	Rich	Mapledoram	1146.30	2212
6u5v	Dedra	Coaker	2328.50	2057
6x5d	Miriam	Gilbeart	1489.70	3429
7y2w	Noemi	Stanton	1006.20	3597
7z5j	Barb	Beevers	1289.00	1720
8b5k	Maurice	Ioanna	1313.10	1013
8i9q	Balduin	Norvel	1213.80	1007
8q9p	Lonna	O' Cuolahan	1166.40	6729
8u0l	Dev	Iddons	1740.00	1546
8v3m	Jennie	Bennis	1930.60	1192
8z6a	Steward	Jopp	1008.90	2369
9g2o	Tawsha	Troy	1317.00	2278
9o9m	Frannie	Wickwarth	1229.20	3727
9Qub5	Gussie	Mainwaring	1144.00	1547

47 rows in set (0.00 sec)

- ✓ Η δεύτερη λειτουργία, δηλαδή να μην επιτρέπει την διαγραφή ενός διευθυντή υποκαταστήματος και να εμφανίζει και αντίστοιχο μήνυμα, επιτυγχάνεται με το **call delete\_employee('Rudyard', 'Mouncey');**. Ο συγκεκριμένος υπάλληλος, έχει wrk\_AT το 1Qru0 και είναι διευθυντής όπως φαίνεται στα παρακάτω screenshots:



wrk_AT	wrk_name	wrk_lname	wrk_salary	wrk_br_code
0Jyn5	Eleni	Mitchinson	2472.00	6101
0o3o	Stefan	Cosley	1212.50	1021
0p4i	Wat	Hatchell	1418.30	1349
0z3x	Boigie	Halshaw	1960.40	1002
1c	Sky	Dybell	1129.80	1701
1d6q	Lyssa	Ledley	1472.80	2945
1d7q	Gabbie	Nuscha	1505.00	616
1e3b	Nikos	Roseby	1786.00	3721
1h1u	Port	Pettus	1784.50	2372
1i4r	Alexio	Lifton	1119.20	1001
1j6v	Wynny	Gollin	1604.10	29
1Lco3	Charlie	Zamorrano	2477.50	2619
1m2j	Marjy	Bannister	1966.50	7528
1p8c	Carola	Kerner	1577.20	3743
1Qru0	Rudyard	Mouncey	1065.00	3354

```
mysql> select * from manages;
+-----+-----+
| mng_adm_AT | mng_br_code |
+-----+-----+
| 6e4j      | 1050        |
| 1c        | 1701        |
| 1h1u      | 2372        |
| 1Lco3     | 2619        |
| 1Qru0     | 3354        |
| 2o3w      | 3586        |
| 1e3b      | 3721        |
+-----+-----+
7 rows in set (0.00 sec)
```

Όταν καλούμε την stored με το **call delete\_employee('Rudyard', 'Mouncey');** εμφανίζει μήνυμα στα αγγλικά ότι είναι διευθυντής και δεν μπορεί να διαγραφεί, όπως φαίνεται στο παρακάτω screenshot:

```
mysql> call delete_employee('Rudyard', 'Mouncey');
ERROR 1644 (45000): The employee is a manager and cannot be deleted.
```

- ✓ Μία έξτρα λειτουργία που προσθέσαμε είναι όταν θα καλούμε οποιοδήποτε άλλο όνομα μέσω της stored, είτε ανήκει στον πίνακα worker είτε όχι, θα εμφανίζεται μήνυμα που θα λέει ότι δεν υπάρχει κάποια διαθέσιμη ενέργεια, όπως φαίνεται παρακάτω (το όρισμα Stefan ανήκει στον worker, ενώ το όρισμα Nikos είναι άσχετο):

```
mysql> call delete_employee('Stefan', 'Cosley');
+-----+
| No action available |
+-----+
| No action available |
+-----+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql> call delete_employee('Nikos', 'Giannopoulos');
+-----+
| No action available |
+-----+
| No action available |
+-----+
1 row in set (0.00 sec)
```

Σχετικά με τα ευρετήρια στην Mysql: Η Mysql χρησιμοποιεί by default ευρετήριο υβριδικής δομής από B-trees και Hash, αλλά κυρίως B-tree.

- Στο ερώτημα 3.1.3.4.α χρησιμοποιούμε ευρετήριο από B-tree, καθώς αναζητούμε ένα εύρος(όλα τα άτομα που πλήρωσαν μεταξύ δύο συγκεκριμένων ποσών) και η τοπικότητα που υπάρχει στα δένδρα(το τι στοιχείο υπάρχει δηλαδή κοντά στο άλλο), είναι η πιο κατάλληλη για να υλοποιηθεί η αναζήτηση θεωρητικά πιο γρήγορα.
- Στο ερώτημα 3.1.3.4.β χρησιμοποιούμε ευρετήριο από Hash, καθώς ψάχνουμε συγκεκριμένα ονόματα και το hashing “καταστρέφει” την τοπικότητα, άρα η αναζήτηση θα γίνει θεωρητικά πιο γρήγορα με χρήση Hash.

Γενικότερα, τα δεδομένα πρέπει να είναι ήδη ταξινομημένα για να λειτουργήσει σωστά το index. Για αυτό χρησιμοποιούμε και το order by ή το group by. Ουσιαστικά, το index κάνει το order by ή το group by να λειτουργεί σωστά.

- Ο κώδικας του stored για το ερώτημα 3.1.3.4.α είναι ο εξής:

DELIMITER \$

create procedure advanceInBetween(IN minAmount float(7,2),IN maxAmount float(7,2) )

BEGIN

SELECT res\_offer\_name, res\_offer\_lname

FROM reservation\_offers

WHERE amount\_in\_advance BETWEEN minAmount AND maxAmount

ORDER BY amount\_in\_advance;

END\$

- ✓ Όταν καλούμε την stored με το call **advanceInBetween(150.00, 180.00)**; εμφανίζει επιτυχώς όσους έχουν πληρώσει προκαταβολή ανάμεσα στα δύο ποσά που αναφέρονται ως ορίσματα, όπως φαίνεται στο παρακάτω screenshot(για πρακτικούς λόγους παραθέτουμε μερικούς εξ αυτών):

```
mysql>
mysql> call advanceInBetween(150.00, 180.00);
```

res_offer_name	res_offer_lname
Myla	Craig
Tristin	Banks
Joselyn	Curtis
Ishaan	Moss
Urijah	Hood
Amara	Barr
Kaelyn	Rangel
Turner	Schmidt
Franklin	Friedman
Marcy	Cruz
Reed	Foster
Mauricio	Wiggins
Lorelai	Willis
Kadyn	Gentry
Sofia	Perry
Amir	Fuller
Dario	Escobar
Jaycee	Berg
Marcel	Pennington
Asa	Sherman

Ο χρόνος εκτέλεσης της stored χωρίς ευρετήριο και για τα ορίσματα **call advanceInBetween(50.00, 150.00)**; φαίνεται παρακάτω:

```
40288 rows in set (0.09 sec)
Query OK, 0 rows affected (28.99 sec)
```

- ✓ Για να επιταχύνουμε την stored procedure, δημιουργούμε ένα ευρετήριο με όνομα **advance\_fast** στον πίνακα **reservation\_offers** που σχετίζεται με το **amount\_in\_advance** με την εντολή **CREATE INDEX advance\_fast ON reservation\_offers (amount\_in\_advance)**; και ο χρόνος εκτέλεσης φαίνεται παρακάτω:

```
40288 rows in set (0.05 sec)
Query OK, 0 rows affected (25.28 sec)
```

Παρατηρούμε ότι η stored όντως έχει επιταχύνει για μερικά δευτερόλεπτα.

- Ο κώδικας του stored για το ερώτημα 3.1.3.4.β είναι ο εξής:

```
DELIMITER $
```

```
create procedure GetCustomersByLastName(IN customer_lastname VARCHAR(25))
```

```
BEGIN
```

```
SELECT res_offer_name, res_offer_lname, offer_number, count(*) AS num_people
```

```
FROM reservation_offers
```

```
WHERE res_offer_lname = customer_lastname
```

```
GROUP BY offer_number, res_offer_name;
```

```
END$
```

Όταν καλούμε την stored με την εντολή **call GetCustomersByLastName('Moyer');** εμφανίζει επιτυχώς τα ονόματα και τα επίθετα των ανθρώπων με επίθετο Moyer, την προσφορά ταξιδιού που έχουν κάνει εγγραφή (το offer\_number δηλαδή) καθώς και το πλήθος των ατόμων με το συγκεκριμένο επίθετο ανά κωδικό προσφορά ταξιδιού όπως φαίνεται στο παρακάτω screenshot:

```
mysql> call GetCustomersByLastName('Moyer ');
```

res_offer_name	res_offer_lname	offer_number	num_people
Itzel	Moyer	1	2
Joel	Moyer	1	2
Cornelius	Moyer	1	2
Emmett	Moyer	1	2
Jayson	Moyer	1	2
Denise	Moyer	1	2
Damarion	Moyer	1	2
Libby	Moyer	1	2
Laila	Moyer	1	2
Christina	Moyer	1	2
Tyrone	Moyer	1	2
Itzel	Moyer	2	2
Joel	Moyer	2	2
Cornelius	Moyer	2	2
Emmett	Moyer	2	2
Jayson	Moyer	2	2
Denise	Moyer	2	2
Damarion	Moyer	2	2
Libby	Moyer	2	2
Laila	Moyer	2	2
Christina	Moyer	2	2
Tyrone	Moyer	2	2
Itzel	Moyer	3	2
Joel	Moyer	3	2
Cornelius	Moyer	3	2
Emmett	Moyer	3	2
Jayson	Moyer	3	2
Denise	Moyer	3	2
Damarion	Moyer	3	2
Libby	Moyer	3	2
Laila	Moyer	3	2
Christina	Moyer	3	2
Tyrone	Moyer	3	2

```
33 rows in set (0.03 sec)
```

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

Σημείωση: Το num\_people αναφέρεται στο σύνολο των ατόμων που έχουν κάνει κράτηση ανά κωδικό προσφοράς ταξιδιού και έχουν το ίδιο όνομα και επίθετο. Για να το δούμε πιο αναλυτικά αυτό, μπορούμε να εκτελέσουμε το ακόλουθο block κώδικα:

**select res\_offer\_lname from reservation\_offers where res\_offer\_lname='Moyer';** όπου πράγματι οι άνθρωποι με αυτό το επίθετο είναι 66 στο πλήθος.

Ο χρόνος εκτέλεσης **χωρίς ευρετήριο** φαίνεται στο παραπάνω screenshot και είναι ίσος με 0.06 sec.

- ✓ Για να επιταχύνουμε την stored procedure, δημιουργούμε ένα ευρετήριο με όνομα last\_names\_fast στον πίνακα reservation\_offers που σχετίζεται με το res\_offer\_lname με την εντολή **CREATE INDEX last\_names\_fast USING HASH ON reservation\_offers (res\_offer\_lname);** και ο χρόνος εκτέλεσης φαίνεται παρακάτω:

```
mysql> call GetCustomersByLastName(' Moyer ');
```

res_offer_name	res_offer_lname	offer_number	num_people
Itzel	Moyer	1	2
Joel	Moyer	1	2
Cornelius	Moyer	1	2
Emmett	Moyer	1	2
Jayson	Moyer	1	2
Denise	Moyer	1	2
Damarion	Moyer	1	2
Libby	Moyer	1	2
Laila	Moyer	1	2
Christina	Moyer	1	2
Tyrone	Moyer	1	2
Itzel	Moyer	2	2
Joel	Moyer	2	2
Cornelius	Moyer	2	2
Emmett	Moyer	2	2
Jayson	Moyer	2	2
Denise	Moyer	2	2
Damarion	Moyer	2	2
Libby	Moyer	2	2
Laila	Moyer	2	2
Christina	Moyer	2	2
Tyrone	Moyer	2	2
Itzel	Moyer	3	2
Joel	Moyer	3	2
Cornelius	Moyer	3	2
Emmett	Moyer	3	2
Jayson	Moyer	3	2
Denise	Moyer	3	2
Damarion	Moyer	3	2
Libby	Moyer	3	2
Laila	Moyer	3	2
Christina	Moyer	3	2
Tyrone	Moyer	3	2

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

```
Query OK, 0 rows affected (0.04 sec)
```

Είναι ίσος με 0.04 sec. Παρατηρούμε ότι και εδώ ο χρόνος μειώθηκε με τη βοήθεια του ευρετηρίου κατά 0.02 sec.

## ΚΕΦΑΛΑΙΟ 3

### Κώδικας των triggers και παραδείγματα.

- Το trigger του ερωτήματος 3.1.4.1 δεν έχει υλοποιηθεί. Η σκέψη μας ήταν να το σπάσουμε σε πολλαπλά triggers για κάθε πίνακα ξεχωριστά.
- Ο κώδικας για το trigger του ερωτήματος 3.1.4.2 είναι ο εξής:

```
DELIMITER $
```

```
create trigger prevent_trip_change
```

```
BEFORE UPDATE ON trip
```

```
FOR EACH ROW
```

```
BEGIN
```

```
-- Prevent the departure date change
```

```
IF (OLD.tr_departure <> NEW.tr_departure) THEN
```

```
IF (SELECT COUNT(*) FROM reservation WHERE res_tr_id = OLD.tr_id) > 0 THEN
```

```
SIGNAL SQLSTATE '45000'
```

```
SET MESSAGE_TEXT = 'Cannot update departure date after reservations have been made  
for this trip.';
```

```
END IF;
```

```
END IF;
```

```
-- Prevent the return date change
```

```
IF (OLD.tr_return <> NEW.tr_return) THEN
```

```
IF (SELECT COUNT(*) FROM reservation WHERE res_tr_id = OLD.tr_id) > 0 THEN
```

```
SIGNAL SQLSTATE '45000'
```

```
SET MESSAGE_TEXT = 'Cannot update return date after reservations have been made for  
this trip.';
```

```
END IF;
```

```
END IF;
```

```

-- Prevent the cost of trip change

IF (OLD.tr_cost <> NEW.tr_cost) THEN

    IF (SELECT COUNT(*) FROM reservation WHERE res_tr_id = OLD.tr_id) > 0 THEN

        SIGNAL SQLSTATE '45000'

        SET MESSAGE_TEXT = 'Cannot update cost of trip after reservations have been made for
this trip.';

    END IF;

END IF;

END IF;

END$

```

Όταν προσπαθούμε να αλλάξουμε τα πεδία tr\_departure, tr\_return ή tr\_cost του πίνακα trip με κωδικό ταξιδιού tr\_id=681 με την εντολή **update**, τότε ενεργοποιείται επιτυχώς ο trigger και ανάλογα με το τι προσπαθούμε να αλλάξουμε κάθε φορά, εμφανίζεται το αντίστοιχο μήνυμα όπως φαίνεται και στο παρακάτω screenshot:

```

mysql> UPDATE trip SET tr_departure = '2022-08-21' WHERE tr_id = 681;
ERROR 1644 (45000): Cannot update departure date after reservations have been made for this trip.
mysql> UPDATE trip SET tr_return = '2023-04-27' WHERE tr_id = 681;
ERROR 1644 (45000): Cannot update return date after reservations have been made for this trip.
mysql> UPDATE trip SET tr_cost = 60.00 WHERE tr_id = 681;
ERROR 1644 (45000): Cannot update cost of trip after reservations have been made for this trip.

```

- **Cannot update departure date after reservations have been made for this trip** για την προσπάθεια αλλαγής της ημερομηνίας αναχώρησης.
- **Cannot update return date after reservations have been made for this trip** για την προσπάθεια αλλαγής της ημερομηνίας επιστροφής.
- **Cannot update cost of trip after reservations have been made for this trip** για την προσπάθεια αλλαγής του κόστους ταξιδιού.

Σημείωση: Ο trigger ελέγχει εάν υπάρχουν ήδη κρατήσεις στο ταξίδι με συγκεκριμένο tr\_id με το παρακάτω if:

```

IF (SELECT COUNT(*) FROM reservation WHERE res_tr_id = OLD.tr_id) > 0

```

- Ο κώδικας για το trigger του ερωτήματος 3.1.4.3 είναι ο εξής:

```

DELIMITER $

create trigger salary_cannot_be_reduced

BEFORE UPDATE ON worker

FOR EACH ROW

```

```
BEGIN
```

```
IF NEW.wrk_salary < OLD.wrk_salary THEN
```

```
SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Salary cannot be reduced.';
```

```
END IF;
```

```
END$
```

Ο υπάλληλος με wrk\_AT=1c ανήκει στον πίνακα worker με μισθό 1129.80 ευρώ όπως φαίνεται παρακάτω:



wrk_AT	wrk_name	wrk_lname	wrk_salary	wrk_br_code
0Jyn5	Eleni	Mitchinson	2472.00	6101
0o3o	Stefan	Cosley	1212.50	1021
0p4i	Wat	Hatchell	1418.30	1349
0z3x	Boigie	Halshaw	1960.40	1002
1c	Sky	Dybell	1129.80	1701

Όταν προσπαθούμε να μειώσουμε τον μισθό του προαναφερθέντος υπαλλήλου (δηλαδή να αλλάξουμε το πεδίο wrk\_salary) με την εντολή **update worker set wrk\_salary= 900.00 where wrk\_AT='1c'**, τότε ενεργοποιείται επιτυχώς ο trigger και εμφανίζει το μήνυμα **Salary cannot be reduced.** όπως φαίνεται και στο παρακάτω screenshot:

```
mysql> update worker set wrk_salary= 900.00 where wrk_AT='1c';  
ERROR 1644 (45000): Salary cannot be reduced.
```

Από την άλλη μεριά, αν προσπαθήσουμε να αυξήσουμε τον μισθό του υπαλλήλου με την εντολή **update worker set wrk\_salary= 1300.00 where wrk\_AT='1c'**, τότε θα αλλάξει επιτυχώς ο μισθός όπως φαίνεται παρακάτω:

```
mysql> select wrk_salary from worker where wrk_at='1c';  
+-----+  
| wrk_salary |  
+-----+  
|    1300.00 |  
+-----+  
1 row in set (0.00 sec)
```