

Ievads datu bāzēs

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LATVIJAS UNIVERSITĀTE
**BIZNESA, VADĪBAS
UN EKONOMIKAS
FAKULTĀTE**



VADĪBAS UN
UZNĒMĒJDARBĪBAS
MĀCĪBU CENTRS

ESF projekts Nr. 8.4.1.0/16/I/001
"Nodarbināto personu profesionālās kompetences pilnveide"

NACIONĀLAIS
ATTĪSTĪBAS
PLĀNS 2020



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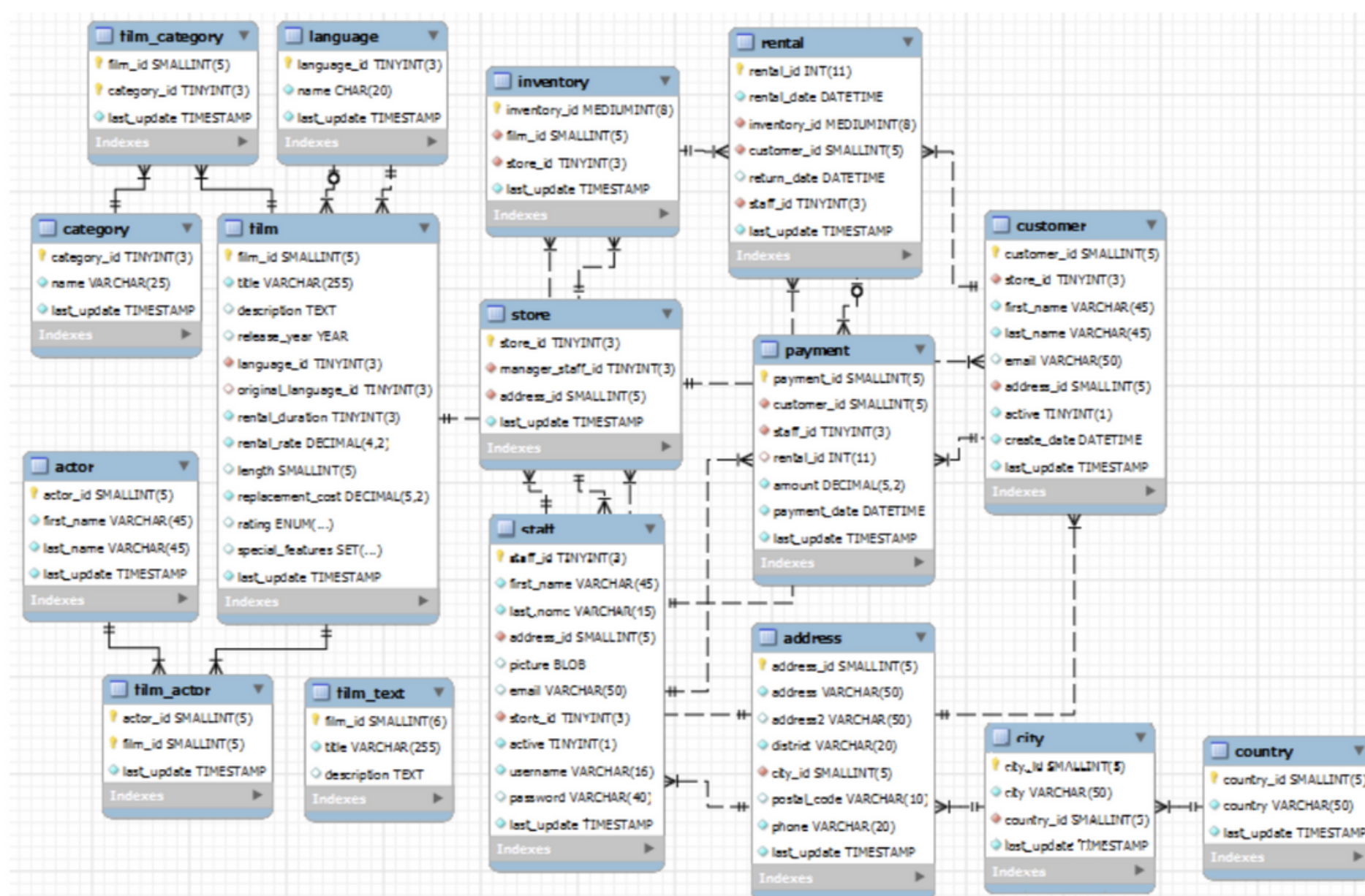
Elementāri pieprasījumi.

5. lekcija

Šodienas lekcijā

- D5.1. Atlase.**
- 5.2. Sakārtošana.**
- 5.3. Pievienošana.**
- 5.4. Problēmu risināšana.**

Piemēru datubāzes



datacharmer/
test_db

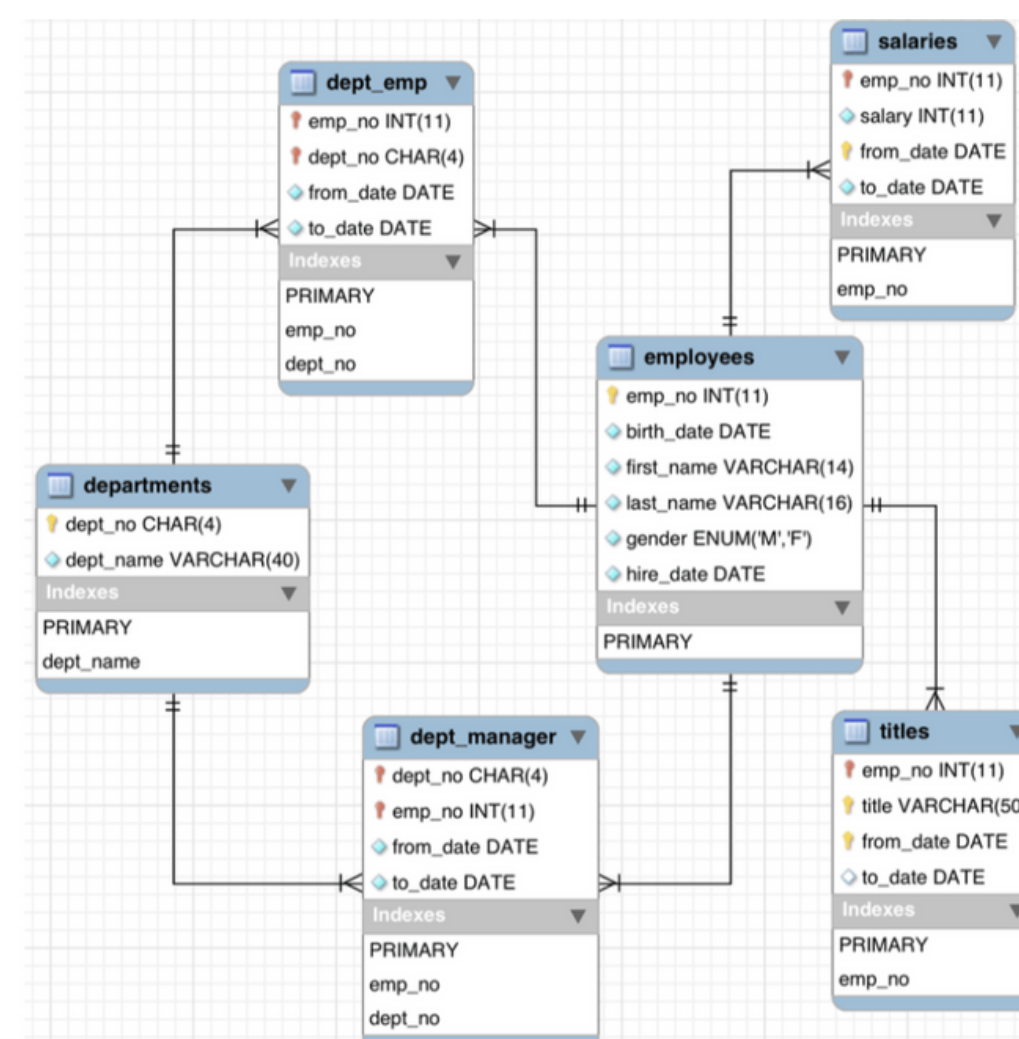


A sample MySQL database with an integrated test suite, used to test your applications and database servers

datacharmer/test_db: A sample MySQL database with an integrated test suite, used to test your applications and database servers - GitHub - datacharmer/test_db: A sample...

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lejūpielādēt skriptu projektu



<https://dev.mysql.com/doc/sakila/en/>

<https://dev.mysql.com/doc/employee/en/employees-installation.html>

Sakila datubāzes instalēšana



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```
-- jāabūt GIT uzinstalētam
-- zem windows varat lietot terminālu gitbash

git clone https://github.com/datacharmer/test_db.git

cd /Users/robertspolis/workspace/mysql/test_db/

mysql -uadmin -p -h trainer-1.ckh4seomnuyp.eu-west-1.rds.amazonaws.com

-- SAKILA datubāzes instalēšana
source sakila/sakila-mv-schema.sql
source sakila/sakila-mv-data.sql

-- employees datubāzess instalēšana
source employees.sql
```

SELECT komanda



100	Steven	King	SKING	195-02-18	----
101	Neena	Kochhar	NKOCHHR	195-02-18	----
102	Lex	De Haan	LDEHAAN	195-02-18	----
103	Alexander	Hunee	AHUNEE	195-02-18	----
104	Bruce	Ernst	BERNST	195-02-18	----
105	David	Austin	DAUSTIN	195-02-18	----
106	Vick	Patel	VIPATEL	195-02-18	----
107	Dana	Scott	DSCOTT	195-02-18	----
108	Nancy	Greenberg	NGREENB	195-02-18	----
109	Daniel	Ford	DFORD	195-02-18	----

SELECT employee_id, first_name
FROM employees
LIMIT 10 ;

employee_id	first_name
100	Steven
101	Neena
102	Lex
103	Alexander
104	Bruce
105	David
106	Vick
107	Dana
108	Nancy

ar SELECT komandu lasām tabulu ierakstus

- norādam kolonu nosaukumus, visas kolonas apzīmējam ar *
- FROM tabulas-nosaukums
- SELECT * from employees
- LIMIT pieliekam lai samazinātu atgriežamo ierakstu skaitu
- ar USE komandu izvēlamies tekošo shēmu/datubāzi
- ar DESCRIBE noskaidrojam tabulas struktūru.

```
USE employees;
```

```
mysql> describe employees;
```

```
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| emp_no         | int(11)       | NO   | PRI | NULL    |       |
| birth_date     | date          | NO   |     | NULL    |       |
| first_name     | varchar(14)   | NO   |     | NULL    |       |
| last_name      | varchar(16)   | NO   |     | NULL    |       |
| gender         | enum('M','F') | NO   |     | NULL    |       |
| hire_date      | date          | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.06 sec)
```

```
mysql> select * from employees limit 5;
```

```
+-----+-----+-----+-----+-----+-----+
| emp_no | birth_date | first_name | last_name | gender | hire_date |
+-----+-----+-----+-----+-----+-----+
| 10001  | 1953-09-02 | Georgi     | Facello   | M      | 1986-06-26 |
| 10002  | 1964-06-02 | Bezalel    | Simmel    | F      | 1985-11-21 |
| 10003  | 1959-12-03 | Parto      | Bamford   | M      | 1986-08-28 |
| 10004  | 1954-05-01 | Chirstian  | Koblick   | M      | 1986-12-01 |
| 10005  | 1955-01-21 | Kyoichi    | Maliniak  | M      | 1989-09-12 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.05 sec)
>
```

SELECT komandas paplašinājumi



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SELECT komandai ir vairākas klauzes, kuras paplašina SELECT iespējas

DISTINCT: parādīt unikālos elementus

FROM: norādīt tabulu kā datu avotu

WHERE: Filtra nosacījums ierakstu atļasei

ORDER BY: Sakārtot ierakstus kolonu vai izteiksmju secībā

LIMIT: ierobežo atgriežamo ierakstu skaitu

Klausēm ir svarīga secība, citādi rodas sintakses kļūda!

SELECT DISTINCT <kolonu saraksts>

FROM <tabulas nosaukums>

WHERE <izteiksme>

ORDER BY <kolonu vai izteiksmju virkne>

LIMIT <ierakstu-skaitis>;

SELECT DISTINCT

```
mysql> select gender from employees limit 10;
```

```
+-----+  
| gender |  
+-----+  
| M      |  
| F      |  
| M      |  
| M      |  
| M      |  
| F      |  
| F      |  
| M      |  
| F      |  
| F      |  
+-----+
```

```
10 rows in set (0.05 sec)
```

```
mysql> SELECT DISTINCT gender FROM employees;;
```

```
+-----+  
| gender |  
+-----+  
| M      |  
| F      |  
+-----+
```

```
2 rows in set (0.14 sec)
```


SELECT ar WHERE nosacījumu

```
mysql> SELECT first_name,last_name FROM employees  
WHERE birth_date = '1963-12-28' LIMIT 5;;
```

```
+-----+-----+  
| first_name | last_name |  
+-----+-----+  
| Berry      | Farrel    |  
| Ramalingam | Schwartzbauer |  
| Mantis     | Otillo    |  
| Leni       | Nishimukai |  
| Arif       | Meriste   |  
+-----+-----+
```

```
5 rows in set (0.05 sec)
```

SELECT ar WHERE un AND/OR

- Veidojam loģiskas izteiksmes ar AND un OR
- AND ir patiesš ja abass izteiksmes svieenlaicīgi ir patiesas jeb TRUE
- OR ja vismaz viena no 2 izteiksmēm ir patiesa jeb TRUE

```
mysql> SELECT first_name,last_name,birth_date FROM employees  
WHERE first_name = 'Apostol' LIMIT 5;
```

```
+-----+-----+-----+  
| first_name | last_name  | birth_date |  
+-----+-----+-----+  
| Apostol    | Pintelas  | 1964-02-02 |  
| Apostol    | Bahr       | 1952-09-06 |  
| Apostol    | Rabehasaina | 1961-09-17 |  
| Apostol    | Lunt       | 1962-04-30 |  
| Apostol    | Goodrum    | 1953-12-05 |  
+-----+-----+-----+  
5 rows in set (0.05 sec)
```

```
mysql> SELECT first_name,last_name,birth_date FROM employees WHERE  
first_name = 'Apostol' AND birth_date='1956-04-09';
```

```
+-----+-----+-----+  
| first_name | last_name  | birth_date |  
+-----+-----+-----+  
| Apostol    | Marchesini | 1956-04-09 |  
+-----+-----+-----+  
1 row in set (0.12 sec)
```

SELECT ar ORDER BY

Atlasīt ierakstus norādītajā secībā

```
mysql> SELECT first_name,last_name,birth_date FROM employees  
-> WHERE first_name like '%pos%' LIMIT 10;
```

```
+-----+-----+-----+  
| first_name | last_name | birth_date |  
+-----+-----+-----+  
| Apostol   | Pintelas | 1964-02-02 |  
| Apostol   | Bahr      | 1952-09-06 |  
| Apostol   | Rabehasaina | 1961-09-17 |  
| Apostol   | Lunt      | 1962-04-30 |  
| Apostol   | Goodrum   | 1953-12-05 |  
| Apostol   | Peot      | 1962-01-21 |  
| Apostol   | Radhakrishnan | 1962-03-25 |  
| Apostol   | Collette  | 1954-06-04 |  
| Apostol   | Shihab    | 1961-06-02 |  
| Apostol   | Birch     | 1960-02-03 |  
+-----+-----+-----+  
10 rows in set (0.01 sec)
```

```
mysql> SELECT first_name,last_name,birth_date  
-> FROM employees  
-> WHERE first_name like '%pos%'  
-> ORDER BY birth_date, last_name  
-> LIMIT 10;
```

```
+-----+-----+-----+  
| first_name | last_name | birth_date |  
+-----+-----+-----+  
| Apostol   | Reistad   | 1952-02-06 |  
| Apostol   | Bouloucos | 1952-03-29 |  
| Apostol   | Shokrollahi | 1952-04-18 |  
| Apostol   | Bresenham | 1952-04-23 |  
| Apostol   | Douceur   | 1952-05-11 |  
| Apostol   | Peir      | 1952-06-22 |  
| Apostol   | Ressouche | 1952-07-12 |  
| Apostol   | Kriebel   | 1952-08-07 |  
| Apostol   | Herber    | 1952-08-12 |  
| Apostol   | Cannane   | 1952-08-27 |  
+-----+-----+-----+  
10 rows in set (0.12 sec)
```

Teksta kolonas iespējams filtrēt ar LIKE izteiksmi

% - apzīmē patvaļīgu simbolu virkni

_ - apzīmē vienu, atsevišķu simbolu.

SELECT ar ORDER BY un ASC/DESC

Norādot secības pieprasījumu iespējamss pievienot secības prasību:

- ASC - augošā secībā
- DESC - dilsstošā ssecībā

```
mysql> SELECT first_name,last_name,birth_date FROM employees WHERE  
first_name like '%pos%' ORDER BY birth_date DESC, last_name ASC LIMIT  
10;
```

first_name	last_name	birth_date
Apostol	Gruenwald	1965-01-12
Apostol	Gubsky	1964-12-13
Apostol	Spinelli	1964-12-13
Apostol	Constantine	1964-12-04
Apostol	Lieberherr	1964-11-29
Apostol	Sullins	1964-09-28
Apostol	Leonhardt	1964-09-21
Apostol	Copas	1964-09-20
Apostol	Ozeri	1964-09-16
Apostol	Quadeer	1964-08-13

10 rows in set (0.11 sec)

Problēmu risināšana



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- SHOW WARNINGS: Informatīvie ziņojumi
 - SHOW ERRORS: Kļūdu ziņojumi
- ERROR 1054 (42S22)
- errorcode (SQL STATE)

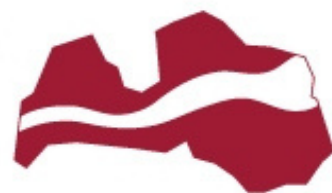
```
mysql> SELECT first_name,last_name,birth_date FROM employees WHERE first_name like '%pos%' ORDER BY birth_date_ DESC, last_name ASC LIMIT 10;
ERROR 1054 (42S22): Unknown column 'birth_date_' in 'order clause'
mysql> show errorss
-> ;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'errorss' at line 1
mysql> show errors
-> ;
+-----+-----+-----+
| Level | Code | Message |
+-----+-----+-----+
| Error | 1064 | You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'errorss' at line 1 |
+-----+-----+-----+
1 row in set (0.01 sec)

mysql> show warnings;
+-----+-----+-----+
| Level | Code | Message |
+-----+-----+-----+
| Error | 1064 | You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'errorss' at line 1 |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql> SIGNAL SQLSTATE 42522;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the
right syntax to use near '42522' at line 1
```

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