

Базы данных

Начало работы с MySQL. MySQL Workbench

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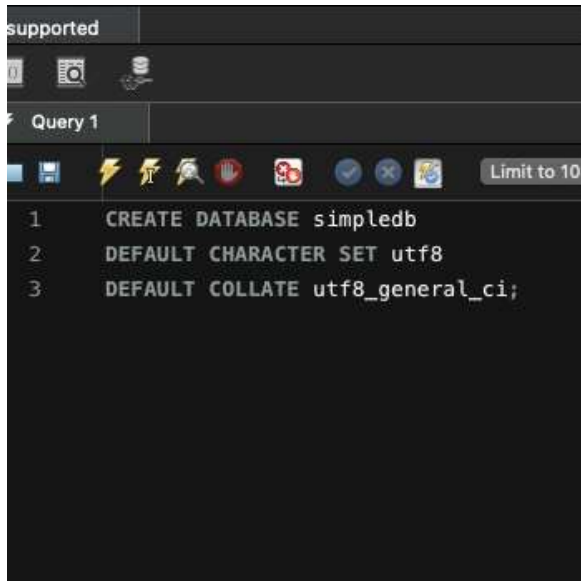
II курс

Технологии разработки программного обеспечения

Цели работы:

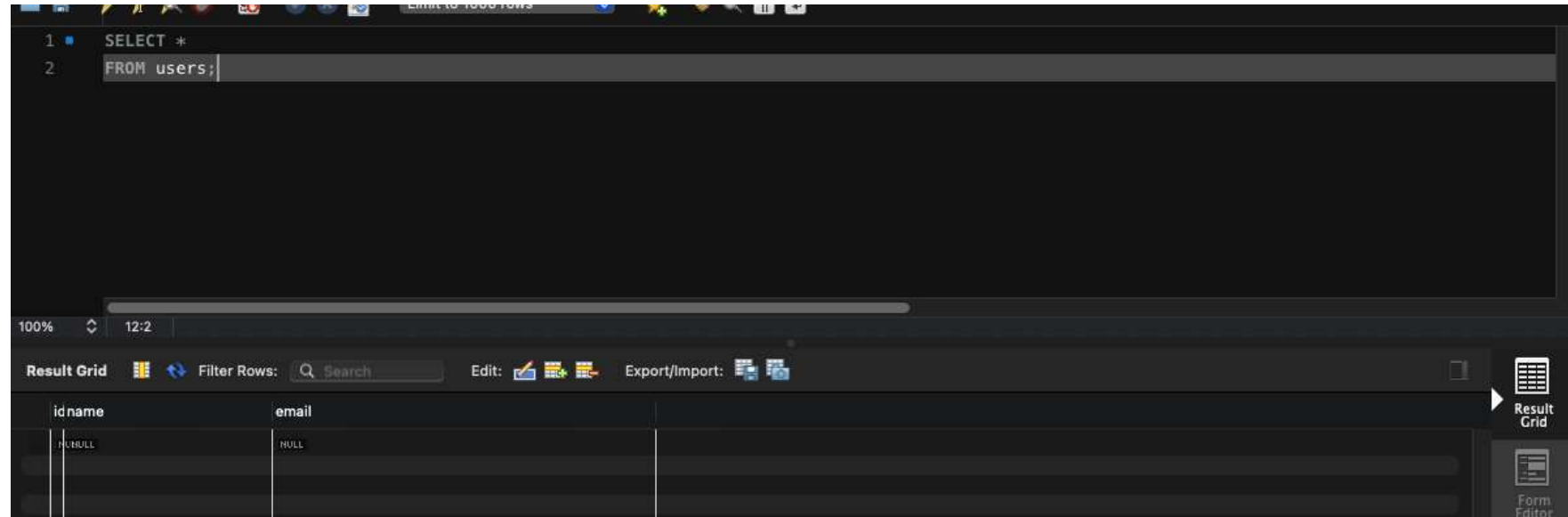
- Разобраться с интерфейсом MySQL Workbranch
- Разораться с синтаксисом SQL и типами данных
- Создать базу данных
- Создать несколько таблиц
- Связать таблицы

Задание 2: Создание таблицы



A screenshot of a SQL editor interface. The top bar shows 'supported' and 'Query 1'. Below the toolbar, a query is entered in a text area:

```
1 CREATE DATABASE simpledb
2 DEFAULT CHARACTER SET utf8
3 DEFAULT COLLATE utf8_general_ci;
```



A screenshot of a SQL editor interface. The top bar shows 'Limit to 1000 rows'. Below the toolbar, a query is entered in a text area:

```
1 SELECT *
2 FROM users;
```

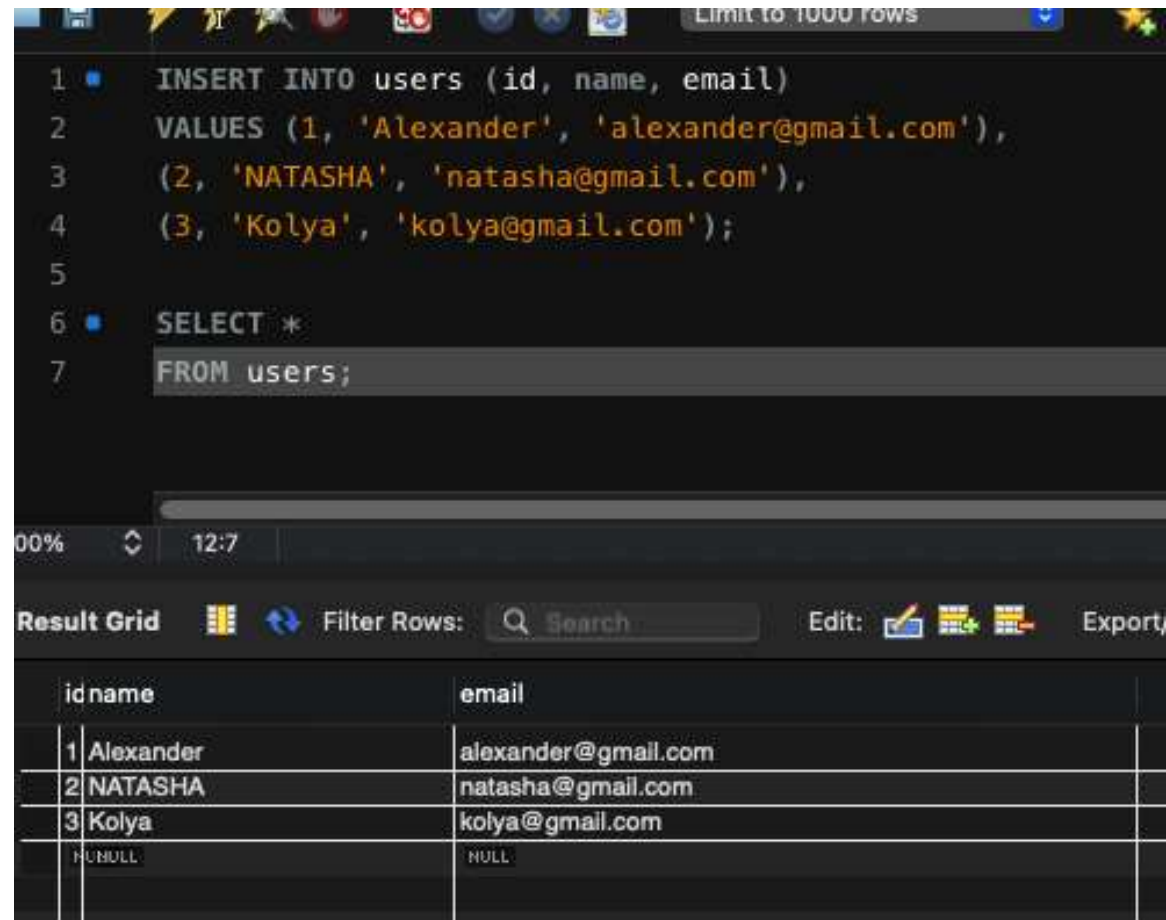
Below the query editor, there is a 'Result Grid' section. It shows a table with two columns: 'idname' and 'email'. The first row contains 'NULL' and 'NULL' respectively. The table is currently empty except for the header row.

idname	email
NULL	NULL

Задание 3: Команда для создания таблицы

- CREATE TABLE `users` (
 - `id` int NOT NULL AUTO_INCREMENT,
 - `name` varchar(45) NOT NULL,
 - `email` varchar(45) NOT NULL,
 - PRIMARY KEY (`id`),
 - UNIQUE KEY `email_UNIQUE` (`email`)
-) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

Задание 4: Заполнить таблицу



The screenshot shows a database client window with a dark theme. The top toolbar includes a 'Limit to 1000 rows' button. The SQL editor contains the following code:

```
1 INSERT INTO users (id, name, email)
2 VALUES (1, 'Alexander', 'alexander@gmail.com'),
3         (2, 'NATASHA', 'natasha@gmail.com'),
4         (3, 'Kolya', 'kolya@gmail.com');
5
6 SELECT *
7 FROM users;
```

Below the editor, the 'Result Grid' is displayed. It shows the results of the SELECT query. The grid has columns for 'id', 'name', and 'email'. The first three rows correspond to the inserted data, and the fourth row shows 'NULL' values.

	id	name	email
1	1	Alexander	alexander@gmail.com
2	2	NATASHA	natasha@gmail.com
3	3	Kolya	kolya@gmail.com
	4	NULL	NULL

Задание 6: Заполнение базы

	1	Alexander	alexander@gmail.com	NULL	NULL	NULL	NULL	2024-02-19 17:58:50	
	2	Natasha	natasha@gmail.com	NULL	NULL	NULL	NULL	2024-02-19 17:58:50	
	3	Kolya	kolya@gmail.com	NULL	NULL	NULL	NULL	2024-02-19 17:58:50	
	NULL	Ekaterina	ekaterina.petrova@outlook.com	f	2000-02-11	145789	1.123	NULL	
	NULL	Paul	paul@superpochta.ru	m	1998-08-12	123789	1	NULL	
	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	

Дополненная таблица

Задание 7

```
→ Лабораторное занятие 1  
lb1.csv  
Отчёт по 1-ой лабораторной работе.doc  
→ Лабораторное занятие 1
```

Экспорт файла с БД

Задание 8

На макбуке у меня не получилось создать внешний ключ через gui, поэтому я написал sql запрос, чтобы она у меня создалась.

```
1 CREATE TABLE resume
2 (
3     resumeid INT PRIMARY KEY NOT NULL AUTO_INCREMENT,
4     userid INT NOT NULL,
5     title VARCHAR(100) NOT NULL,
6     skills TEXT,
7     created TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
8     FOREIGN KEY (userid) REFERENCES simpledb.users(id)
9 );
10 SELECT *
11 FROM resume;
```

resumeid	userid	title	skills	created

При удалении вылетает ошибка

```
1 CREATE TABLE resume (
2     resumeid INT PRIMARY KEY NOT NULL AUTO_INCREMENT,
3     userid INT NOT NULL,
4     title VARCHAR(100) NOT NULL,
5     skills TEXT,
6     created TIMESTAMP DEFAULT CURRENT_TIMESTAMP(),
7     FOREIGN KEY (userid) REFERENCES simpledb.users(id)
8 );
```

Time	Action	Response	Duration / Fetch Time
18:50:15	SELECT * FROM resume LIMIT 0, 1000	Error Code: 1046. No database selected Select the de...	0.0035 sec
18:50:34	SELECT * FROM resume LIMIT 0, 1000	Error Code: 1046. No database selected Select the de...	0.00036 sec
18:50:46	USE simpledb	0 row(s) affected	0.00085 sec
18:50:57	SELECT * FROM resume LIMIT 0, 1000	0 row(s) returned	0.0013 sec / 0.00001...
18:52:46	SELECT * FROM users LIMIT 0, 1000	3 row(s) returned	0.00067 sec / 0.0000...
18:53:08	DROP TABLE resume	0 row(s) affected	0.025 sec
00:06:02	CREATE TABLE resume (resumeid INT PRIMARY KEY NOT NULL AUTO_INCREMENT, userid INT NOT NULL, titl...	0 row(s) affected	0.073 sec

```
1 ALTER TABLE resume DROP COLUMN userid;
2
3 -- Error Code: 1828. Cannot drop column 'userid': needed in a foreign key constraint 'resume_ibfk_1'
4
```

Time	Action	Response	Duration / Fetch Time
18:50:15	SELECT * FROM resume LIMIT 0, 1000	Error Code: 1046. No database selected Select the de...	0.0035 sec
18:50:34	SELECT * FROM resume LIMIT 0, 1000	Error Code: 1046. No database selected Select the de...	0.00036 sec
18:50:46	USE simpledb	0 row(s) affected	0.00085 sec
18:50:57	SELECT * FROM resume LIMIT 0, 1000	0 row(s) returned	0.0013 sec / 0.00001...
18:52:46	SELECT * FROM users LIMIT 0, 1000	3 row(s) returned	0.00067 sec / 0.0000...
18:53:08	DROP TABLE resume	0 row(s) affected	0.025 sec
00:06:02	CREATE TABLE resume (resumeid INT PRIMARY KEY NOT NULL AUTO_INCREMENT, userid INT NOT NULL, titl...	0 row(s) affected	0.073 sec
00:07:00	SELECT * FROM resume LIMIT 0, 1000	0 row(s) returned	0.0022 sec / 0.00001...
00:11:13	SELECT * FROM resume LIMIT 0, 1000	0 row(s) returned	0.0015 sec / 0.00002...
00:18:18	ALTER TABLE resume DROP COLUMN userid	Error Code: 1828. Cannot drop column 'userid': neede...	0.013 sec

Задание 9

```
INSERT INTO resume (resumeid, userid, title, skills, created)
VALUES
  (101, 1, 'Senior Software Engineer Position', 'Java, Python, SQL', '2024-02-21 10:00:00'),
  (102, 2, 'Data Analyst Position', 'Data visualization, SQL, Excel', '2024-02-21 10:30:00'),
  (103, 3, 'Marketing Manager Position', 'Digital marketing, Social media management', '2024-02-21 11:00:00');
```

```
INSERT INTO resume (resumeid, userid, title, skills, created)
VALUES
  (104, 4, 'Marketing Manager Position', 'Digital marketing, Social media management', '2024-02-21 11:00:00');

-- Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails (`simplifiedb`.`resume`, CONSTRAINT `resume_ibfk_1` FOREIGN
```

Максимум у пользователя может быть
0 резюме, а максимум неограниченно.

Задание 10

```
1 DELETE FROM resume
2 WHERE userid = 1;
3
4 -- 1 row(s) affected
5
6 SELECT *
7 FROM users;
```

Result Grid

id	name	email	gender	bday	postal_code	rating	created
1	Alexander	alexander@gmail.com	NULL	NULL	NULL	NULL	2024-02-19 17:58:50
2	NATASHA	natasha@gmail.com	NULL	NULL	NULL	NULL	2024-02-19 17:58:50
3	Kolya	kolya@gmail.com	NULL	NULL	NULL	NULL	2024-02-19 17:58:50
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Удалять получается, а вот изменять нет.

```
1 UPDATE users
2 SET id = 4;
3
4 -- Error Code: 1175. You are using safe update mode and you tried to update a table without a WHERE that uses a KEY column. To disable safe mo
5
```

Execution Output

	Time	Action	Response	Duration / Fetch Time
✖ 1	00:28:16	INSERT INTO resume (resumeid, userid, title, skills, created) VALUES (103, 4, 'Marketing Manager Position', 'Digit...	Error Code: 1062. Duplicate entry '103' for key 'resum...	0.0061 sec
✖ 2	00:28:30	INSERT INTO resume (resumeid, userid, title, skills, created) VALUES (104, 4, 'Marketing Manager Position', 'Digit...	Error Code: 1452. Cannot add or update a child row: a...	0.0046 sec
✔ 3	00:31:52	SELECT * FROM users LIMIT 0, 1000	3 row(s) returned	0.037 sec / 0.00090...
✔ 4	00:31:58	SELECT * FROM users LIMIT 0, 1000	3 row(s) returned	0.00048 sec / 0.000...
✔ 5	00:32:09	SELECT * FROM resume LIMIT 0, 1000	3 row(s) returned	0.00058 sec / 0.000...
✔ 6	00:44:47	DELETE FROM resume WHERE userid = 1	1 row(s) affected	0.037 sec
✔ 7	00:45:31	DELETE FROM resume WHERE userid = 1	0 row(s) affected	0.00055 sec
✔ 8	00:45:31	SELECT * FROM users LIMIT 0, 1000	3 row(s) returned	0.0061 sec / 0.00094...
✖ 9	00:51:44	UPDATE users SET id = 4	Error Code: 1175. You are using safe update mode an...	0.032 sec

Используемые ссылки

- <https://stepik.org/course/113918/info>
- <https://space-base.ru/library/sql/zaprosyi-sql-dlya-obnovleniya-dannyix-update>

Выводы

- На маке m1 очень тяжело работать с gui MySQL workbench
- Создали несколько БД
- Связали их ключами
- Удаляли и добавляли значения