

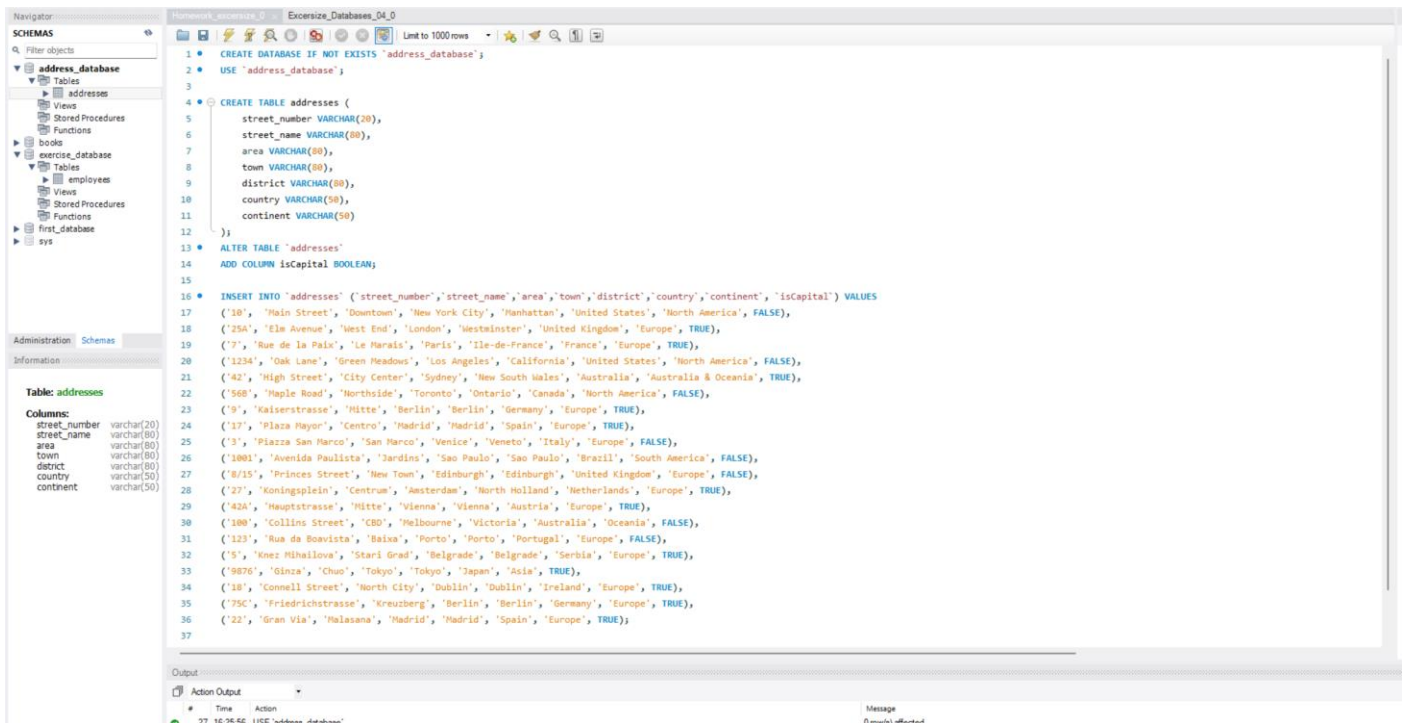
Homework: Databases

Problems for homework for the ["Software Technologies" course @ Software University](#).

Submit this document as your homework.

1. Address Database:

1. **CREATE DATABASE** named `address_database` and **USE** it:
2. **CREATE TABLE** named `addresses` with the following columns:
 - **street_number**
 - **street_name**
 - **area**
 - **town**
 - **district**
 - **country**
 - **continent**
3. We forgot to add **Boolean column**, named `isCapital`:
4. **INSERT** records **INTO** the `address` table and execute the SQL query:



The screenshot shows a SQL IDE interface with a left sidebar containing a 'Schemas' tree and a main editor window. The 'Schemas' tree shows a database named 'address_database' with a table 'addresses'. The main editor window displays the following SQL code:

```
1 CREATE DATABASE IF NOT EXISTS 'address_database';
2 USE 'address_database';
3
4 CREATE TABLE addresses (
5     street_number VARCHAR(20),
6     street_name VARCHAR(80),
7     area VARCHAR(80),
8     town VARCHAR(80),
9     district VARCHAR(80),
10    country VARCHAR(50),
11    continent VARCHAR(50)
12);
13 ALTER TABLE 'addresses'
14 ADD COLUMN isCapital BOOLEAN;
15
16 INSERT INTO 'addresses' ('street_number','street_name','area','town','district','country','continent','isCapital') VALUES
17 ('10','Main Street','Downtown','New York City','Manhattan','United States','North America',FALSE),
18 ('25A','Elm Avenue','West End','London','Westminster','United Kingdom','Europe',TRUE),
19 ('7','Rue de la Paix','Le Marais','Paris','Ile-de-France','France','Europe',TRUE),
20 ('1234','Oak Lane','Green Meadows','Los Angeles','California','United States','North America',FALSE),
21 ('42','High Street','City Center','Sydney','New South Wales','Australia','Australia & Oceania',TRUE),
22 ('568','Maple Road','Northside','Toronto','Ontario','Canada','North America',FALSE),
23 ('9','Kaiserstrasse','Mitte','Berlin','Berlin','Germany','Europe',TRUE),
24 ('17','Plaza Mayor','Centro','Madrid','Madrid','Spain','Europe',TRUE),
25 ('3','Piazza San Marco','San Marco','Venice','Veneto','Italy','Europe',FALSE),
26 ('1001','Avenida Paulista','Jardins','Sao Paulo','Sao Paulo','Brazil','South America',FALSE),
27 ('8/15','Princes Street','New Town','Edinburgh','Edinburgh','United Kingdom','Europe',FALSE),
28 ('27','Koningsplein','Centrum','Amsterdam','North Holland','Netherlands','Europe',TRUE),
29 ('42A','Hauptstrasse','Mitte','Vienna','Vienna','Austria','Europe',TRUE),
30 ('100','Collins Street','CBD','Melbourne','Victoria','Australia','Oceania',FALSE),
31 ('123','Rua da Boavista','Baixa','Porto','Porto','Portugal','Europe',FALSE),
32 ('5','Knez Mihailova','Stari Grad','Belgrade','Belgrade','Serbia','Europe',TRUE),
33 ('9876','Ginza','Chuo','Tokyo','Tokyo','Japan','Asia',TRUE),
34 ('18','Connell Street','North City','Dublin','Dublin','Ireland','Europe',TRUE),
35 ('75C','Friedrichstrasse','Kreuzberg','Berlin','Berlin','Germany','Europe',TRUE),
36 ('22','Gran Vía','Malasana','Madrid','Madrid','Spain','Europe',TRUE);
37
```

The bottom of the IDE shows an 'Output' window with the following message:

```
Action Output
Time Action
27 16:25:56 USE 'address_database'
Message
0 row(s) affected
```

5. Your task is to execute the proper queries in order to get the following results:

- SELECT all addresses from the `address` table that are located in a capital city.

The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'SCHEMAS' pane displays a tree view of the database structure, including 'address_database', 'books', 'exercise_database', 'first_database', and 'sys'. The 'address_database' is expanded, showing 'Tables', 'Views', 'Stored Procedures', and 'Functions'. The 'addresses' table is selected. Below the tree, the 'Table: addresses' is detailed with its columns and data types: street_number (varchar(20)), street_name (varchar(80)), area (varchar(80)), town (varchar(80)), district (varchar(80)), country (varchar(50)), and continent (varchar(50)).

The main pane shows a query editor with the following SQL query:

```
1 • SELECT * FROM address_database.addresses WHERE isCapital IS TRUE;
```

The 'Result Grid' pane displays the results of the query, showing 15 rows of data. The columns are: street_number, street_name, area, town, district, country, continent, and isCapital. The results are as follows:

street_number	street_name	area	town	district	country	continent	isCapital
25A	Elm Avenue	West End	London	Westminster	United Kingdom	Europe	1
7	Rue de la Paix	Le Marais	Paris	Ile-de-France	France	Europe	1
42	High Street	City Center	Sydney	New South Wales	Australia	Australia & Oceania	1
9	Kaiserstrasse	Mitte	Berlin	Berlin	Germany	Europe	1
17	Plaza Mayor	Centro	Madrid	Madrid	Spain	Europe	1
27	Koningsplein	Centrum	Amsterdam	North Holland	Netherlands	Europe	1
42A	Hauptstrasse	Mitte	Vienna	Vienna	Austria	Europe	1
5	Knez Mihailova	Stari Grad	Belgrade	Belgrade	Serbia	Europe	1
9876	Ginza	Chuo	Tokyo	Tokyo	Japan	Asia	1
18	Connell Street	North City	Dublin	Dublin	Ireland	Europe	1
75C	Friedrichstrasse	Kreuzberg	Berlin	Berlin	Germany	Europe	1
22	Gran Via	Malasana	Madrid	Madrid	Spain	Europe	1

- SELECT all addresses from the `address` table that are located in South America.

The screenshot shows the SQL Server Enterprise Manager interface. The main pane shows a query editor with the following SQL query:

```
1 • SELECT * FROM address_database.addresses WHERE continent LIKE 'South America';
```

The 'Result Grid' pane displays the results of the query, showing 1 row of data. The columns are: street_number, street_name, area, town, district, country, continent, and isCapital. The results are as follows:

street_number	street_name	area	town	district	country	continent	isCapital
1001	Avenida Paulista	Jardins	Sao Paulo	Sao Paulo	Brazil	South America	0

- **SELECT** all addresses from the `address` table that are located in Europe, but only in NON Capital cities.

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1 `SELECT * FROM address_database.addresses WHERE continent LIKE 'Europe' AND isCapital IS FALSE;`

Result Grid Filter Rows: Exports: Wrap Cell Content: [T](#)

street_number	street_name	area	town	district	country	continent	isCapital
3	Piazza San Marco	San Marco	Venice	Veneto	Italy	Europe	0
8/15	Princes Street	New Town	Edinburgh	Edinburgh	United Kingdom	Europe	0
123	Rua da Boavista	Baixa	Porto	Porto	Portugal	Europe	0

Table: addresses

Columns:

street_number	varchar(20)
street_name	varchar(80)
area	varchar(80)
town	varchar(80)
district	varchar(80)
country	varchar(50)
continent	varchar(50)