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Sprawozdanie bazy danych 5

1) Stwórz zapytanie zwracające wszystkie wartości pola „GovernmentForm" (tabela countryinfo, jeśli nie istnieje to stworzę tabele) bez powtórzeń. Jeśli pole nie istnieje to rozszerz tabele countryinfo o pole „GovernmentForm". Wypełnij pole/tabelę danymi.

Tworze nowe pole GovernmentForm do tabeli countryinfo:

Wykonanie zapytania/zapytań SQL do bazy danych lab 3:

```
1  ALTER TABLE countryinfo ADD GovernmentForm varchar(255);
```

Dodaje wartości do mojej tabeli:

Wykonanie zapytania/zapytań SQL do bazy danych lab 3:

```
 1  UPDATE countryinfo SET GovernmentForm = 'Federal Republic' WHERE _id = 'ARG';
 2  UPDATE countryinfo SET GovernmentForm = 'Constitutional Monarchy' WHERE _id = 'AUS';
 3  UPDATE countryinfo SET GovernmentForm = 'Federal Republic' WHERE _id = 'BRA';
 4  UPDATE countryinfo SET GovernmentForm = 'Constitutional Monarchy' WHERE _id = 'CAN';
 5  UPDATE countryinfo SET GovernmentForm = 'Communist State' WHERE _id = 'CHN';
 6  UPDATE countryinfo SET GovernmentForm = 'Federal Republic' WHERE _id = 'DEU';
 7  UPDATE countryinfo SET GovernmentForm = 'Republic' WHERE _id = 'EGY';
 8  UPDATE countryinfo SET GovernmentForm = 'Constitutional Monarchy' WHERE _id = 'ESP';
 9  UPDATE countryinfo SET GovernmentForm = 'Republic' WHERE _id = 'FRA';
10  UPDATE countryinfo SET GovernmentForm = 'Constitutional Monarchy' WHERE _id = 'GBR';
11  UPDATE countryinfo SET GovernmentForm = 'Federal Republic' WHERE _id = 'IND';
12  UPDATE countryinfo SET GovernmentForm = 'Republic' WHERE _id = 'ITA';
13  UPDATE countryinfo SET GovernmentForm = 'Constitutional Monarchy' WHERE _id = 'JPN';
14  UPDATE countryinfo SET GovernmentForm = 'Republic' WHERE _id = 'KOR';
15  UPDATE countryinfo SET GovernmentForm = 'Federal Republic' WHERE _id = 'MEX';
```

Tworze zapytanie:

Wykonanie zapytania/zapytań SQL do bazy danych lab 3:

```
1  SELECT DISTINCT GovernmentForm FROM countryinfo;
```

Wynik:

	GovernmentForm
☐ 🖉 Edit ⨭ Copy ⊖ Delete	Federal Republic
☐ 🖉 Edit ⨭ Copy ⊖ Delete	Constitutional Monarchy
☐ 🖉 Edit ⨭ Copy ⊖ Delete	Communist State
☐ 🖉 Edit ⨭ Copy ⊖ Delete	Republic

2) Stwórz zapytanie wypisujące najczęściej występującą wartość w bazie dla pola „Continent" (countryinfo). Jeśli pole nie istnieje to rozszerz tabele o to pole oraz wypełnij je danymi.

Tworze nowe pole Continent do tabeli countryinfo:

Wykonanie zapytania/zapytań SQL do bazy danych lab 3: ❓

```sql
1 ALTER TABLE countryinfo ADD Continent varchar(255);
```

Tworze zapytanie

Wykonanie zapytania/zapytań SQL do bazy danych lab 3: ❓

```sql
1 SELECT JSON_UNQUOTE(JSON_EXTRACT(countryinfo.doc, '$.Continent')) AS Continent,
2 COUNT(*) AS CountContinent
3 FROM countryinfo
4 GROUP BY JSON_UNQUOTE(JSON_EXTRACT(countryinfo.doc, '$.Continent'))
5 ORDER BY CountContinent DESC
6 LIMIT 1;
```

Wynik:

Continent	CountContinent
Europe	6

3) Stwórz zapytanie wypisujące nazwy państw wraz z wartością IndepYear w kolejności malejącej po polu „IndepYear" (countryinfo). Jeśli pole nie istnieje to rozszerz tabele o to pole oraz wypełnij je danymi.

Tworze nowe pole do tabeli countryinfo:

Uruchom zapytanie SQL/zapytania w tabeli lab 3.countryinfo: ❓

```sql
1  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1816) WHERE _id = 'ARG'; -- Argentina
2  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1901) WHERE _id = 'AUS'; -- Australia
3  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1822) WHERE _id = 'BRA'; -- Brazil
4  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1867) WHERE _id = 'CAN'; -- Canada
5  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1949) WHERE _id = 'CHN'; -- China
6  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1871) WHERE _id = 'DEU'; -- Germany
7  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1922) WHERE _id = 'EGY'; -- Egypt
8  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1492) WHERE _id = 'ESP'; -- Spain
9  UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 843) WHERE _id = 'FRA'; -- France
10 UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1066) WHERE _id = 'GBR'; -- United Kingdom
11 UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1947) WHERE _id = 'IND'; -- India
12 UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1861) WHERE _id = 'ITA'; -- Italy
13 UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 660) WHERE _id = 'JPN'; -- Japan
14 UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1948) WHERE _id = 'KOR'; -- South Korea
15 UPDATE countryinfo SET doc = JSON_SET(doc, '$.IndepYear', 1810) WHERE _id = 'MEX'; -- Mexico
```

Tworze zapytanie do wyników:

Wykonanie zapytania/zapytań SQL do bazy danych lab 3: ❓

```sql
1 SELECT country.Name AS Name, CAST(JSON_UNQUOTE(JSON_EXTRACT(countryinfo.doc, '$.IndepYear')) AS UNSIGNED) AS IndepYear FROM country JOIN countryinfo ON
  country.Code = countryinfo._id ORDER BY 'IndepYear' DESC;
```

Wynik:

Name	IndepYear
Argentina	1816
Australia	1901
Brazil	1822
Canada	1867
China	1949
Germany	1871
Egypt	1922
Spain	1492
France	843
United Kingdom	1066
India	1947
Italy	1861
Japan	660
South Korea	1948
Mexico	1810
New Zealand	1840
Russia	1991
Turkey	1923
United States	1776
South Africa	1910

4) Stwórz zapytanie wypisujące języki oraz ilokrotnie są językami urzędowymi w kolejności malejącej)

Tworze zapytanie:

Wykonanie zapytania/zapytań SQL do bazy danych lab 3:

```sql
1  SELECT Language, COUNT(*) AS OfficialCount FROM countrylanguage WHERE IsOfficial = 'T' GROUP BY Language ORDER BY OfficialCount DESC;
```

Wyniki:

Language	OfficialCount
English	6
Spanish	3
French	2
Chinese	1
Arabic	1
Italian	1
Russian	1
German	1
Hindi	1
Japanese	1
Portuguese	1

5) Stwórz zapytanie wypisujące języki oraz ilość ludzi posługujących się nimi na całym świecie w kolejności malejącej

Dodaje pole population do countryinfo

```sql
1  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 45195774) WHERE _id = 'ARG'; -- Argentina
2  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 25687041) WHERE _id = 'AUS'; -- Australia
3  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 216422446) WHERE _id = 'BRA'; -- Brazil
4  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 38905000) WHERE _id = 'CAN'; -- Canada
5  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 1444216107) WHERE _id = 'CHN'; -- China
6  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 83900000) WHERE _id = 'DEU'; -- Germany
7  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 109262178) WHERE _id = 'EGY'; -- Egypt
8  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 47450795) WHERE _id = 'ESP'; -- Spain
9  UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 67186638) WHERE _id = 'FRA'; -- France
10 UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 67530172) WHERE _id = 'GBR'; -- United Kingdom
11 UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 1417173173) WHERE _id = 'IND'; -- India
12 UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 60244639) WHERE _id = 'ITA'; -- Italy
13 UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 125440000) WHERE _id = 'JPN'; -- Japan
14 UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 52000000) WHERE _id = 'KOR'; -- South Korea
15 UPDATE countryinfo SET doc = JSON_SET(doc, '$.Population', 128932753) WHERE _id = 'MEX'; -- Mexico
```

Zapytanie:

```sql
1  SELECT
2      countrylanguage.Language,
3      CAST(JSON_EXTRACT(countryinfo.doc, '$.Population') AS UNSIGNED) * countrylanguage.Percentage / 100 AS Amount
4  FROM
5      countrylanguage
6  JOIN
7      countryinfo
8  ON
9      countrylanguage.CountryCode = countryinfo._id;
```

Wynik:

Language	Amount
Spanish	42935985.3
English	24402688.95
Portuguese	212093997.08
English	23343000
French	15562000
Chinese	1299794496.3
German	75510000
Arabic	103799069.1
Spanish	46501779.1
French	63827306.1
English	64153663.4
English	283434634.6
Hindi	566869269.2
Italian	59642192.61
Japanese	124185600
Spanish	116039477.7
English	4780131.3
Russian	124245362.75
English	268753602.4
English	6069817.9

6) Stwórz zapytanie wypisujące kraje które znajdują się w pierwszej dwudziestce pod względem długości życia oraz jednocześnie znajdują się w pierwszej dwudziestce krajów z największą wartością GNP

Zapytanie:

```sql
WITH TopLifeExpectancy AS (
    SELECT
        country.Code AS CountryCode
    FROM
        country
    JOIN
        countryinfo
    ON
        country.Code = countryinfo._id
    ORDER BY
        CAST(JSON_UNQUOTE(JSON_EXTRACT(countryinfo.doc, '$.LifeExpectancy')) AS UNSIGNED) DESC
    LIMIT 20
),
TopGNP AS (
    SELECT
        country.Code AS CountryCode
    FROM
        country
    JOIN
        countryinfo
    ON
        country.Code = countryinfo._id
    ORDER BY
        CAST(JSON_UNQUOTE(JSON_EXTRACT(countryinfo.doc, '$.GNP')) AS UNSIGNED) DESC
    LIMIT 20
)
SELECT
    country.Name,
    CAST(JSON_UNQUOTE(JSON_EXTRACT(countryinfo.doc, '$.LifeExpectancy')) AS UNSIGNED) AS LifeExpectancy,
    CAST(JSON_UNQUOTE(JSON_EXTRACT(countryinfo.doc, '$.GNP')) AS UNSIGNED) AS GNP
FROM
    country
JOIN
    countryinfo
ON
    country.Code = countryinfo._id
WHERE
    country.Code IN (SELECT CountryCode FROM TopLifeExpectancy)
AND
    country.Code IN (SELECT CountryCode FROM TopGNP);
```

Wyniki:

Name	LifeExpectancy	GNP
Argentina	76	449663
Australia	82	1382734
Brazil	75	2055507
Canada	82	1736426
China	76	14722731
Germany	81	3845630
Egypt	71	303170
Spain	83	1318222
France	82	2715518
United Kingdom	81	2825208
India	70	2875142
Italy	83	1937894
Japan	84	5081770
South Korea	83	1632699
Mexico	76	1220703
New Zealand	81	208407
Russia	72	1712514
Turkey	77	761425
United States	78	21427700
South Africa	64	351432