```sql
-- We will use various queries to explor, clean and analyze the data
-- Note: we will not delete (0) values because in some years, there were no immigrants to Canada

--select the database to use:
USE canada_immigration

-- We start by making any necessary cleaning to our dataset
-- Q1: write a query to find any NULL values in Country coulumn

SELECT *
from canada_immigration_project
WHERE Country IS NULL;
```

100 %

▦ Results ▤ Messages

Country	AREA	Continent	REG	Region	DEV	Developed_nation	year_2000	year_2001	year_2002	year_2003	year_2004	year_2005

```sql
--Q2:  Write a query to find all NON-NULL values in the year_2010 column

SELECT *
from canada_immigration_project
WHERE year_2010 IS NOT NULL;
```

100 %

Results | Messages

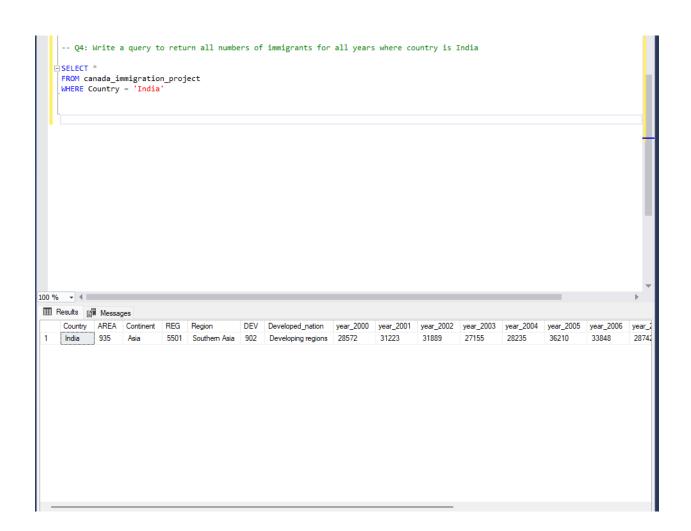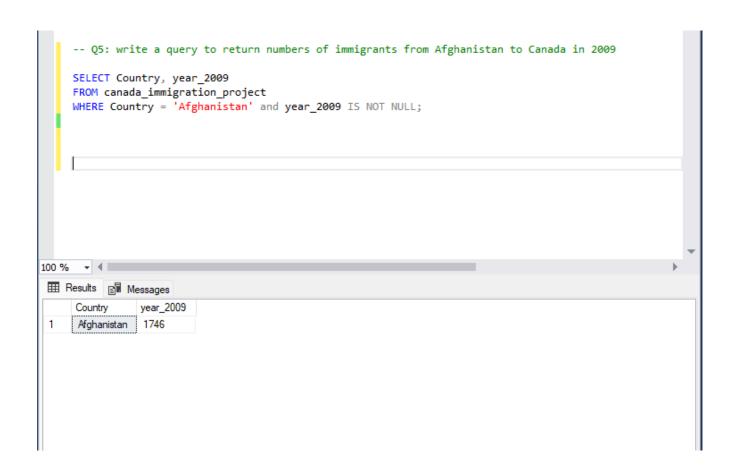|	Country	AREA	Continent	REG	Region	DEV	Developed_nation	year_2000	year_200
1	Afghanistan	935	Asia	5501	Southern Asia	902	Developing regions	3326	4067
2	Albania	908	Europe	925	Southern Europe	901	Developed regions	1816	1602
3	Algeria	903	Africa	912	Northern Africa	902	Developing regions	2867	3418
4	American Samoa	909	Oceania	957	Polynesia	902	Developing regions	0	0
5	Andorra	908	Europe	925	Southern Europe	901	Developed regions	0	1
6	Angola	903	Africa	911	Middle Africa	902	Developing regions	70	169
7	Antigua and Barbuda	904	Latin America and the Caribbean	915	Caribbean	902	Developing regions	13	25
8	Argentina	904	Latin America and the Caribbean	931	South America	902	Developing regions	427	635
9	Armenia	935	Asia	922	Western Asia	902	Developing regions	124	87
10	Australia	909	Oceania	927	Australia and New Zealand	901	Developed regions	599	799
11	Austria	908	Europe	926	Western Europe	901	Developed regions	97	134
12	Azerbaijan	935	Asia	922	Western Asia	902	Developing regions	77	98
13	Bahamas	904	Latin America and the Caribbean	915	Caribbean	902	Developing regions	14	20
14	Bahrain	935	Asia	922	Western Asia	902	Developing regions	34	13
15	Bangladesh	935	Asia	5501	Southern Asia	902	Developing regions	3119	3831

```sql
-- Q3: Write a query to find all rows for immigrants where continent they come from is Asia and region is Southern Asia

SELECT *
from canada_immigration_project
WHERE Continent = 'Asia' AND Region = 'Southern Asia';
```
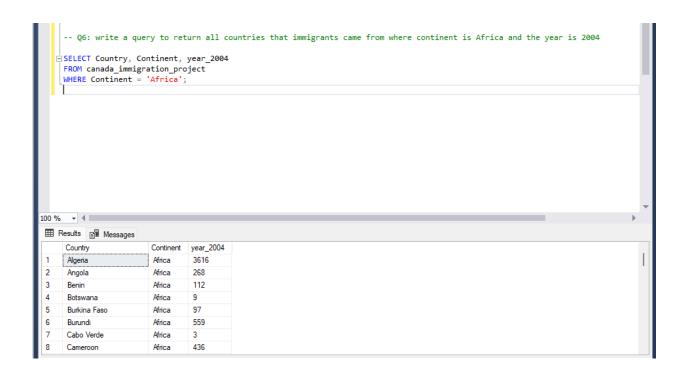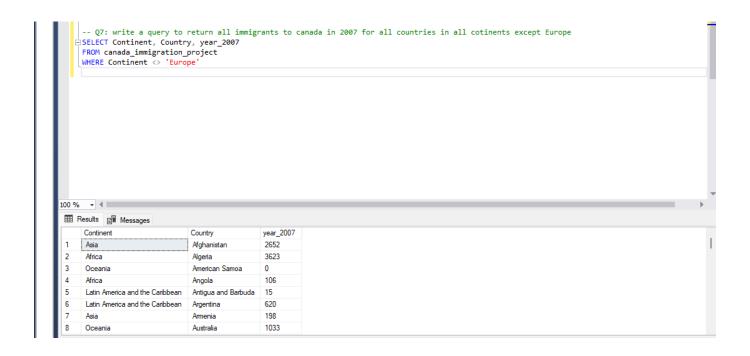
100 %

Results | Messages

	Country	AREA	Continent	REG	Region	DEV	Developed_nation	year_2000	year_2001	year_2002	year_2003	year_2004	year_2005	yea
1	Afghanistan	935	Asia	5501	Southern Asia	902	Developing regions	3326	4067	3697	3479	2978	3436	30
2	Bangladesh	935	Asia	5501	Southern Asia	902	Developing regions	3119	3831	2944	2137	2660	4171	40
3	Bhutan	935	Asia	5501	Southern Asia	902	Developing regions	6	6	8	7	1	5	10
4	India	935	Asia	5501	Southern Asia	902	Developing regions	28572	31223	31889	27155	28235	36210	33
5	Iran (Islamic Republic of)	935	Asia	5501	Southern Asia	902	Developing regions	5884	6169	8129	5918	6348	5837	74
6	Maldives	935	Asia	5501	Southern Asia	902	Developing regions	1	0	1	0	1	0	0
7	Nepal	935	Asia	5501	Southern Asia	902	Developing regions	236	272	363	313	404	607	54
8	Pakistan	935	Asia	5501	Southern Asia	902	Developing regions	15400	16708	15110	13205	13399	14314	13
9	Sri Lanka	935	Asia	5501	Southern Asia	902	Developing regions	6081	5861	5279	4892	4495	4930	47

```sql
-- Q4: Write a query to return all numbers of immigrants for all years where country is India

SELECT *
FROM canada_immigration_project
WHERE Country = 'India'
```

Results | Messages

	Country	AREA	Continent	REG	Region	DEV	Developed_nation	year_2000	year_2001	year_2002	year_2003	year_2004	year_2005	year_2006	year_2
1	India	935	Asia	5501	Southern Asia	902	Developing regions	28572	31223	31889	27155	28235	36210	33848	28742

```
-- Q5: write a query to return numbers of immigrants from Afghanistan to Canada in 2009

SELECT Country, year_2009
FROM canada_immigration_project
WHERE Country = 'Afghanistan' and year_2009 IS NOT NULL;
```

100 %

Results | **Messages**

	Country	year_2009
1	Afghanistan	1746

```
-- Q6: write a query to return all countries that immigrants came from where continent is Africa and the year is 2004

SELECT Country, Continent, year_2004
FROM canada_immigration_project
WHERE Continent = 'Africa';
```

100 %

Results | **Messages**

	Country	Continent	year_2004
1	Algeria	Africa	3616
2	Angola	Africa	268
3	Benin	Africa	112
4	Botswana	Africa	9
5	Burkina Faso	Africa	97
6	Burundi	Africa	559
7	Cabo Verde	Africa	3
8	Cameroon	Africa	436

```sql
-- Q7: write a query to return all immigrants to canada in 2007 for all countries in all cotinents except Europe
SELECT Continent, Country, year_2007
FROM canada_immigration_project
WHERE Continent <> 'Europe'
```

100 %

Results | Messages

	Continent	Country	year_2007
1	Asia	Afghanistan	2652
2	Africa	Algeria	3623
3	Oceania	American Samoa	0
4	Africa	Angola	106
5	Latin America and the Caribbean	Antigua and Barbuda	15
6	Latin America and the Caribbean	Argentina	620
7	Asia	Armenia	198
8	Oceania	Australia	1033

```sql
--Q8 write a query to return all immigrants where continent is Asia, region is Wstern Asia, and the year is 2005

SELECT Continent, Country, Region, year_2005
FROM canada_immigration_project
WHERE Continent = 'Asia' AND Region = 'Western Asia';
```

100 %

Results | Messages

	Continent	Country	Region	year_2005
1	Asia	Armenia	Western Asia	224
2	Asia	Azerbaijan	Western Asia	359
3	Asia	Bahrain	Western Asia	12
4	Asia	Cyprus	Western Asia	7
5	Asia	Georgia	Western Asia	114
6	Asia	Iraq	Western Asia	2226
7	Asia	Israel	Western Asia	2446
8	Asia	Jordan	Western Asia	1940
9	Asia	Kuwait	Western Asia	66
10	Asia	Lebanon	Western Asia	3709
11	Asia	Oman	Western Asia	14
12	Asia	Qatar	Western Asia	11
13	Asia	Saudi Arabia	Western Asia	198
14	Asia	State of Palestine	Western Asia	453
15	Asia	Syrian Arab Republic	Western Asia	1458
16	Asia	Turkey	Western Asia	2065
17	Asia	United Arab Emirates	Western Asia	31
18	Asia	Yemen	Western Asia	161

```sql
-- Q9: Write a query to return numbers of immigrants from continent of Europe for the years: 2003, 2004, 2006

SELECT Continent, Country, year_2003, year_2004, year_2006

FROM canada_immigration_project

WHERE Continent = 'Europe'
```

	Continent	Country	year_2003	year_2004	year_2006
1	Europe	Albania	853	1450	856
2	Europe	Andorra	2	0	1
3	Europe	Austria	113	118	102
4	Europe	Belarus	435	543	439
5	Europe	Belgium	320	411	302
6	Europe	Bosnia and Herzegovina	267	188	217
7	Europe	Bulgaria	1507	2022	1419
8	Europe	Croatia	177	151	102

```sql
-- Q10: Write a query to return the continent, country WHERE AREA number is 904 and REG number is 915

SELECT Continent, Country, AREA, REG

FROM canada_immigration_project

WHERE REG = 915 AND AREA = 904
```

	Continent	Country	AREA	REG
1	Latin America and the Caribbean	Antigua and Barbuda	904	915
2	Latin America and the Caribbean	Bahamas	904	915
3	Latin America and the Caribbean	Barbados	904	915
4	Latin America and the Caribbean	Cuba	904	915
5	Latin America and the Caribbean	Dominica	904	915
6	Latin America and the Caribbean	Dominican Republic	904	915
7	Latin America and the Caribbean	Grenada	904	915
8	Latin America and the Caribbean	Haiti	904	915

```sql
-- Q11: write a query to return any possible null values in the years columns
-- Note: we have to use dynamic SQL to create Year and Immigrant_Count columns to specify which years to include and return as immigrant_Count

SELECT Country, Year, Immigrants_Count
FROM canada_immigration_project
UNPIVOT (Immigrants_Count FOR Year IN (year_2000, year_2001, year_2002, year_2003, year_2004, year_2005,
                                        year_2006, year_2007, year_2008, year_2009, year_2010, year_2011, year_2012, year_2013))
 AS p
WHERE Immigrants_Count IS NULL;
```

Country	Year	Immigrants_Count

```sql
-- Q12: write a query to return all immigrants from Iraq, Bahrain, Syria and Croatia to Canada in the years 2004 and 2007

SELECT Country, year_2004, year_2007
FROM canada_immigration_project
WHERE Country IN ('Iraq', 'Barain', 'Syria', 'Croatia')
ORDER BY year_2004, year_2007;
```

	Country	year_2004	year_2007
1	Croatia	151	102
2	Iraq	1796	2406

```
-- Q13: write a query to find total immigrants to canada from Sweden, Bulgaria, Russia, China and India in 2002 and 2011

SELECT Country,SUM(year_2002) AS Total_for_2002, SUM(year_2011) AS Total_for_2011
FROM canada_immigration_project
WHERE Country IN ('Sweden', 'Bulgaria', 'Russia', 'China', 'India')

GROUP BY Country;
```

100 %

Results | Messages

	Country	Total_for_2002	Total_for_2011
1	Bulgaria	1517	365
2	China	31961	28502
3	India	31889	27509
4	Sweden	149	134

```
-- Q14: write a query to return numbers of immigrants in 2007 per each country where numbers exceeded or equaled 100

SELECT Country, SUM(year_2007) AS Total_for_2007
FROM canada_immigration_project
WHERE year_2007 >= 100
GROUP BY COUNTRY
order by Total_for_2007;
```

100 %

Results | Messages

	Country	Total_for_2007
1	Gabon	101
2	Croatia	102
3	Angola	106
4	Bolivia (Plurinational State of)	107
5	Lithuania	108
6	Greece	110
7	Madagascar	115
8	Yemen	122

```
-- Q15: Write a query to return all immigrants from Western Africa for all countries in 2001 where numbers per country >= 35

SELECT Continent, Country, Region, SUM(year_2001) AS Total_for_2001
FROM canada_immigration_project
WHERE Continent = 'Africa' AND Region = 'Western Africa' AND year_2001 >= 35
GROUP BY Continent, Country, Region
ORDER BY Total_for_2001;
```

100 %

Results | Messages

	Continent	Country	Region	Total_for_2001
1	Africa	Burkina Faso	Western Africa	46
2	Africa	Liberia	Western Africa	60
3	Africa	Benin	Western Africa	66
4	Africa	Mali	Western Africa	67
5	Africa	Togo	Western Africa	94
6	Africa	Senegal	Western Africa	129
7	Africa	Côte d'Ivoire	Western Africa	143
8	Africa	Guinea	Western Africa	177