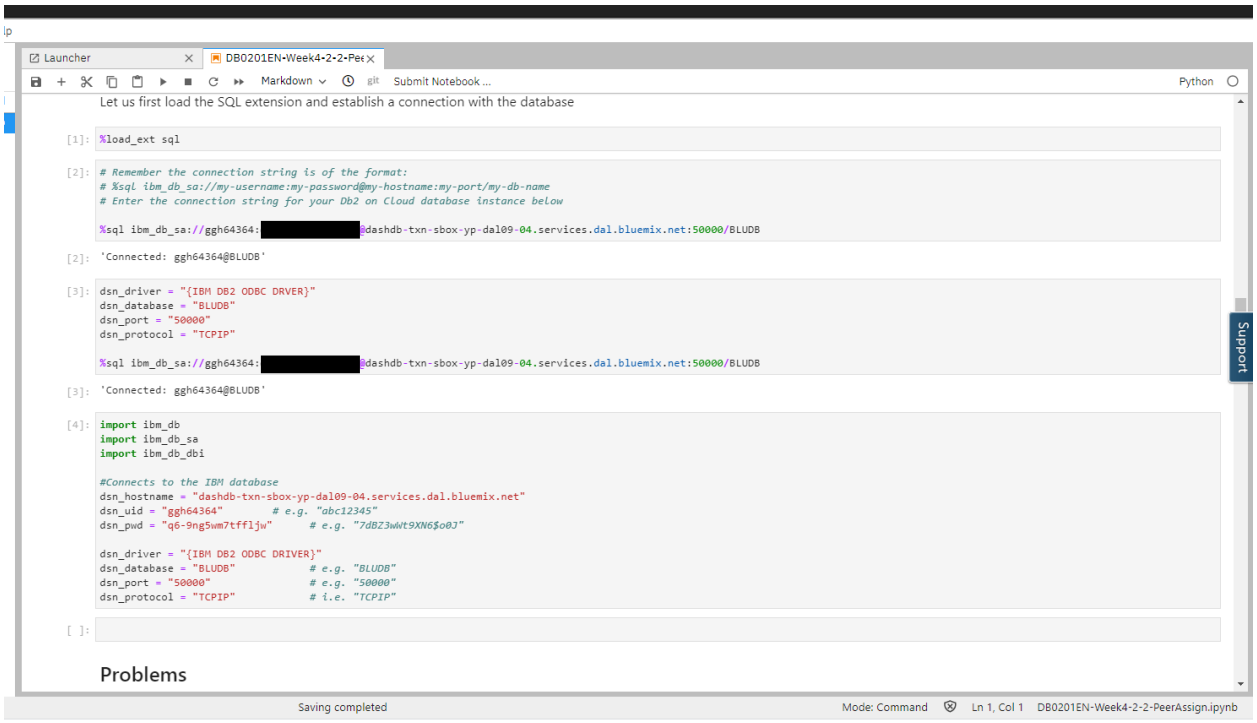
Chicago



Problems

Now write and execute SQL queries to solve assignment problems

Problem 1

Find the total number of crimes recorded in the CRIME table

```
# Rows in Crime table
%sql select COUNT(*)from CHICAGO_CRIME_DATA;
```

```
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Done.
```

1
533

Retrieve first 10 rows from the CRIME table

```
%sql select * from CHICAGO_CRIME_DATA fetch first 10 rows only;
```

```
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Done.
```

id	case_number	DATE	block	iucr	primary_type	description	location_description	arrest	domestic	beat	district	ward	community_area_number	fbicode	x_coordinate	y_coordinate	YEAR	updatedon	latitude	longi
3512276	HK587712	2004-08-28 17:50:56	047XX S KEDZIE AVE	890	THEFT	FROM BUILDING	SMALL RETAIL STORE	FALSE	FALSE	911	9	14	58	6	1155838	1873050	2004	2018-02-10 15:50:01	41.80744050	-87.7039
3406613	HK456306	2004-06-26 12:40:00	009XX N CENTRAL PARK AVE	820	THEFT	$500 AND UNDER	OTHER	FALSE	FALSE	1112	11	27	23	6	1152206	1906127	2004	2018-02-28 15:56:25	41.89827996	-87.7164
8002131	HT233595	2011-04-04 05:45:00	043XX S WABASH AVE	820	THEFT	$500 AND UNDER	NURSING HOME/RETIREMENT HOME	FALSE	FALSE	221	2	3	38	6	1177436	1876313	2011	2018-02-10 15:50:01	41.81593313	-87.6246
7903289	HT133522	2010-12-30 16:30:00	083XX S KINGSTON AVE	840	THEFT	FINANCIAL ID THEFT: OVER $300	RESIDENCE	FALSE	FALSE	423	4	7	46	6	1194622	1850125	2010	2018-02-10 15:50:01	41.74366532	-87.5624
10402076	HZ138551	2016-02-02 19:30:00	033XX W 66TH ST	820	THEFT	$500 AND UNDER	ALLEY	FALSE	FALSE	831	8	15	66	6	1155240	1860661	2016	2018-02-10 15:50:01	41.77345530	-87.7064
7732712	HS540106	2010-09-29 07:59:00	006XX W CHICAGO AVE	810	THEFT	OVER $500	PARKING LOT/GARAGE(NON.RESID.)	FALSE	FALSE	1323	12	27	24	6	1171668	1905607	2010	2018-02-10 15:50:01	41.89644677	-87.6449
10769475	HZ534771	2016-11-30 01:15:00	050XX N KEDZIE AVE	810	THEFT	OVER $500	STREET	FALSE	FALSE	1713	17	33	14	6	1154133	1933314	2016	2018-02-10 15:50:01	41.97284491	-87.7086
4494340	HL793243	2005-12-16 16:45:00	005XX E PERSHING RD	860	THEFT	RETAIL THEFT	GROCERY FOOD STORE	TRUE	FALSE	213	2	3	38	6	1180448	1879234	2005	2018-02-28 15:56:25	41.82387989	-87.6135
3778925	HL149610	2005-01-28 17:00:00	100XX S WASHTENAW AVE	810	THEFT	OVER $500	STREET	FALSE	FALSE	2211	22	19	72	6	1160129	1838040	2005	2018-02-28 15:56:25	41.71128051	-87.6891
3324217	HK361551	2004-05-13 14:15:00	033XX W BELMONT AVE	820	THEFT	$500 AND UNDER	SMALL RETAIL STORE	FALSE	FALSE	1733	17	35	21	6	1153590	1921084	2004	2018-02-28 15:56:25	41.93929582	-87.7109

Problem 3

How many crimes involve an arrest?

Did you know? IBM Watson Studio lets you build and deploy an AI solution, using the best of open source and IBM software and giving your team a single environment to work in. Learn more here.

```
[7]: %sql select COUNT(ARREST) from CHICAGO_CRIME_DATA WHERE ARREST = TRUE;
```

```
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Done.
```

[7]:

1
163

Problem 4

Which unique types of crimes have been recorded at GAS STATION locations?

```
[8]: %sql select DISTINCT PRIMARY_TYPE from CHICAGO_CRIME_DATA WHERE LOCATION_DESCRIPTION = 'GAS STATION';
```

```
 * ibm_db_sa://ggh64364:***@dashdb-txn-sbox-yp-dal09-04.services.dal.bluemix.net:50000/BLUDB
Done.
```

[8]:

primary_type
CRIMINAL TRESPASS
NARCOTICS
ROBBERY
THEFT

```
[ ]:
```

Hint: Which column lists types of crimes e.g. THEFT?

Problem 5

In the CENUS_DATA table list all Community Areas whose names start with the letter 'B'.

```
[9]: %sql select COMMUNITY_AREA_NAME from CENSUS_DATA WHERE COMMUNITY_AREA_NAME LIKE 'B%';
```

```
 * ibm_db_sa://ggh64364:***@dashdb-txn-sbox-yp-dal09-04.services.dal.bluemix.net:50000/BLUDB
Done.
```

[9]:

community_area_name
Belmont Cragin
Burnside
Brighton Park
Bridgeport
Beverly

```
[ ]:
```

Problem 6

Which schools in Community Areas 10 to 15 are healthy school certified?

```
[18]: %sql select name_of_school from CHICAGO_PUBLIC_SCHOOL where community_area_number >= 10 and community_area_number <=15 and healthy_school_certified = 'Yes'
```

```
 * ibm_db_sa://ggh64364:***@dashdb-txn-sbox-yp-dal09-04.services.dal.bluemix.net:50000/BLUDB
Done.
```

[18]:

name_of_school
Rufus M Hitch Elementary School

Problem 7

What is the average school Safety Score?

```
[19]: %sql select avg(safety_score) as avg_safety_score from CHICAGO_PUBLIC_SCHOOL
```

```
 * ibm_db_sa://ggh64364:***@dashdb-txn-sbox-yp-dal09-04.services.dal.bluemix.net:50000/BLUDB
Done.
```

[19]:

avg_safety_score
49.504873

Problem 8

List the top 5 Community Areas by average College Enrollment [number of students]

```
[12]: %sql select COMMUNITY_AREA_NAME, AVG (COLLEGE_ENROLLMENT) AS STUDENTNUM FROM CHICAGO_PUBLIC_SCHOOL\
GROUP BY COMMUNITY_AREA_NAME ORDER BY STUDENTNUM DESC LIMIT 5
```

```
 * ibm_db_sa://ggh64364:***@dashdb-txn-sbox-yp-dal09-04.services.dal.bluemix.net:50000/BLUDB
Done.
```

[12]:

community_area_name	studentnum
ARCHER HEIGHTS	2411.500000
MONTCLARE	1317.000000
WEST ELSDON	1233.333333
BRIGHTON PARK	1205.875000
BELMONT CRAGIN	1198.833333

Problem 9

Use a sub-query to determine which Community Area has the least value for school Safety Score?

```
[13]: %sql select COMMUNITY_AREA_NAME,COMMUNITY_AREA_NAME from CHICAGO_PUBLIC_SCHOOL\
where SAFETY_SCORE = (select MIN (SAFETY_SCORE) from CHICAGO_PUBLIC_SCHOOL);
```

```
 * ibm_db_sa://ggh64364:***@dashdb-txn-sbox-yp-dal09-04.services.dal.bluemix.net:50000/BLUDB
Done.
```

[13]:

community_area_name	community_area_name_1
WASHINGTON PARK	WASHINGTON PARK

Problem 10

[Without using an explicit JOIN operator] Find the Per Capita Income of the Community Area which has a school Safety Score of 1.

```
[21]: %sql select per_capita_income from CENSUS_DATA \
    where community_area_number = (select community_area_number from CHICAGO_PUBLIC_SCHOOL where safety_score = 1)
```

```
 * ibm_db_sa://ggh64364:***@dashdb-txn-sbox-yp-dal09-04.services.dal.bluemix.net:50000/BLUDB
Done.
```

[21]:

per_capita_income
13785

Author(s)