

```
In [ ]: import pandas as pd
import numpy as np
import matplotlib as plt
import zipfile

with zipfile.ZipFile('data/tpsgc-pwgsc-co-ch-tous-all.zip', 'r') as zip_ref:
    zip_ref.extractall('data')
contractHistory = pd.read_csv('data/tpsgc-pwgsc-co-ch-tous-all.csv', usecols = range(0,42))
contractHistory.columns
```

```
Out[ ]: Index(['contract-number', 'amendment-number', 'award-date', 'expiry-date',
'contract-value', 'gsin', 'gsin-description_en', 'gsin-description_fr',
'competitive-tender_en', 'competitive-tender_fr',
'limited-tender-reason', 'limited-tender-reason-description_en',
'limited-tender-reason-description_fr', 'solicitation-procedure',
'solicitation-procedure-description_en',
'solicitation-procedure-description_fr', 'trade-agreement',
'trade-agreement-description_en', 'trade-agreement-description_fr',
'supplier-standardized-name', 'supplier-operating-name',
'supplier-legal-name', 'supplier-address-city',
'supplier-address-prov-state', 'supplier-address-postal-code',
'supplier-address-country', 'organization-employee-count_en',
'organization-employee-count_fr', 'total-contract-value',
'number-records', 'end-user-entity_en', 'end-user-entity_fr',
'contracting-entity-office-name_en',
'contracting-entity-office-name_fr', 'contracting-address-street-1',
'contracting-address-street-2', 'contracting-address-city',
'contracting-address-prov-state', 'contracting-address-postal-code',
'contracting-address-country', 'procurement-entity-name_en',
'procurement-entity-name_fr'],
dtype='object')
```

```
In [ ]: contractHistory.head()
```

Out[ ]:

	contract-number	amendment-number	award-date	expiry-date	contract-value	gsin	gsin-description_en	gsin-description_fr	competitive-tender_en	competitive-tender_fr	...	contracting-entity-office-name_en	contracting-entity-office-name_fr	contracting-address-street-1
0	F2599-090025/001/MD	000	2009-06-16	2009-10-20	30174.0	N1990	Vessels, Miscellaneous	Bateaux divers	Yes	Oui	...	CCG CENTRAL&ARCTIC RGN	N/D	MARI ENGINEERING
1	F2599-090025/001/MD	001	2009-07-15	2009-10-20	4876.0	N1990	Vessels, Miscellaneous	Bateaux divers	Yes	Oui	...	CCG CENTRAL&ARCTIC RGN	N/D	MARI ENGINEERING
2	F2599-090025/001/MD	002	2009-07-20	2009-10-20	26914.0	N1990	Vessels, Miscellaneous	Bateaux divers	Yes	Oui	...	CCG CENTRAL&ARCTIC RGN	N/D	MARI ENGINEERING
3	E60LP-090002/392/LP	000	2010-01-01	2010-12-31	25000.0	V502B	Hotels, Motels and Commercial Accommodation	Hôtels, motels et logements commerciaux	Yes	Oui	...	CONSOLIDATED PROC LP ICPS	N/D	PORTAGE 7
4	E60LP-110001/050/LP	000	2012-01-01	2012-12-31	25000.0	V502B	Hotels, Motels and Commercial Accommodation	Hôtels, motels et logements commerciaux	Yes	Oui	...	CONSOLIDATED PROC LP ICPS	N/D	PORTAGE 7

5 rows × 42 columns

```
In [ ]: contractHistory.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 441210 entries, 0 to 441209
Data columns (total 42 columns):
#   Column                                Non-Null Count  Dtype
---  -
0   contract-number                      441210 non-null object
1   amendment-number                    441210 non-null object
2   award-date                          441210 non-null object
3   expiry-date                         441210 non-null object
4   contract-value                      441210 non-null float64
5   gsin                                441199 non-null object
6   gsin-description_en                  441199 non-null object
7   gsin-description_fr                  441210 non-null object
8   competitive-tender_en                441210 non-null object
9   competitive-tender_fr                441210 non-null object
```

```
10 limited-tender-reason 94299 non-null float64
11 limited-tender-reason-description_en 94299 non-null object
12 limited-tender-reason-description_fr 441210 non-null object
13 solicitation-procedure 441210 non-null object
14 solicitation-procedure-description_en 441210 non-null object
15 solicitation-procedure-description_fr 441210 non-null object
16 trade-agreement 440929 non-null object
17 trade-agreement-description_en 436587 non-null object
18 trade-agreement-description_fr 441210 non-null object
19 supplier-standardized-name 441210 non-null object
20 supplier-operating-name 438586 non-null object
21 supplier-legal-name 439980 non-null object
22 supplier-address-city 441091 non-null object
23 supplier-address-prov-state 430737 non-null object
24 supplier-address-postal-code 438200 non-null object
25 supplier-address-country 441210 non-null object
26 organization-employee-count_en 441208 non-null object
27 organization-employee-count_fr 441210 non-null object
28 total-contract-value 441210 non-null float64
29 number-records 441210 non-null int64
30 end-user-entity_en 441210 non-null object
31 end-user-entity_fr 441210 non-null object
32 contracting-entity-office-name_en 431285 non-null object
33 contracting-entity-office-name_fr 441210 non-null object
34 contracting-address-street-1 441182 non-null object
35 contracting-address-street-2 308117 non-null object
36 contracting-address-city 441182 non-null object
37 contracting-address-prov-state 440905 non-null object
38 contracting-address-postal-code 441180 non-null object
39 contracting-address-country 441182 non-null object
40 procurement-entity-name_en 441210 non-null object
41 procurement-entity-name_fr 441210 non-null object
dtypes: float64(3), int64(1), object(38)
memory usage: 141.4+ MB
```

```
In [ ]: contractHistory.describe()
```

```
Out[ ]:      contract-value  limited-tender-reason  total-contract-value  number-records
count      4.412100e+05          94299.000000          4.412100e+05      441210.000000
mean      4.398310e+05           75.398689          8.457397e+06          8.202300
std       1.609191e+07           7.860150          1.061860e+08         18.275149
min      -1.540262e+08           8.000000         -1.985487e+08          1.000000
25%       0.000000e+00           71.000000          2.096325e+04          1.000000
50%       8.715000e+03           71.000000          1.268150e+05          3.000000
75%       6.941075e+04           85.000000          7.749660e+05          6.000000
max       5.221000e+09           90.000000          5.761974e+09         206.000000
```

```
In [ ]: contractHistory['contract-number'].describe()
```

```
Out[ ]: count      441210
unique    199675
top       E0208-150548/001/PWZ
freq      206
Name: contract-number, dtype: object
```

```
In [ ]: contractHistory['contract-number'].value_counts()
```

```
Out[ ]: E0208-150548/001/PWZ      206
EN578-110558/001/XL             162
EP008-112560/001/GC             152
EP008-112560/004/GC             139
EW038-140681/001/PWU            139
...
W0113-10A128/001/BOR              1
5K003-156233/001/WPG              1
5K003-148856/001/WPG              1
W8482-128975/001/GRK              1
U4030-221421/001/HN              1
Name: contract-number, Length: 199675, dtype: int64
```

```
In [ ]: contractHistory['amendment-number'].describe()
```

```
Out[ ]: count      441210
unique     237
top        000
freq      174270
Name: amendment-number, dtype: object
```

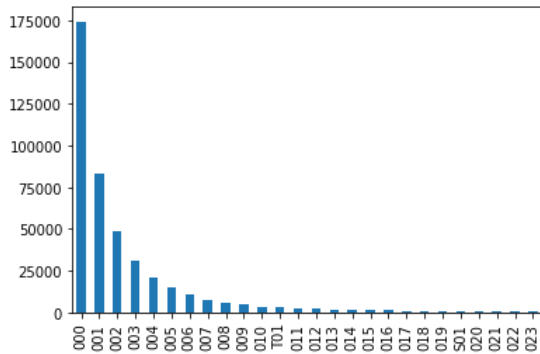
```
In [ ]: contractHistory['amendment-number'].value_counts()
```

```
Out[ ]: 000      174270
001       83486
002       48913
```

```
003      31260
004      20650
...
169      1
170      1
171      1
172      1
205      1
Name: amendment-number, Length: 237, dtype: int64
```

```
In [ ]: #contractHistory['amendment-number'].value_counts().plot(kind = 'bar')
amendNo = contractHistory['amendment-number'].value_counts()
amendNo2 = amendNo[amendNo > 500]
amendNo2.plot(kind = 'bar')
```

```
Out[ ]: <AxesSubplot:>
```



```
In [ ]: contractHistory['award-date'].describe()
```

```
Out[ ]: count      441210
unique      4085
top      2011-01-01
freq       2277
Name: award-date, dtype: object
```

```
In [ ]: contractHistory['award-date'].value_counts()
```

```
Out[ ]: 2011-01-01      2277
2010-01-01      2211
2012-01-01      2200
2009-01-01      1609
2014-02-10       777
...
2010-07-25        1
2010-12-19        1
2013-02-24        1
2015-11-07        1
2012-05-27        1
Name: award-date, Length: 4085, dtype: int64
```

```
In [ ]: contractHistory['expiry-date'].describe()
```

```
Out[ ]: count      441210
unique      6859
top      2011-03-31
freq      9500
Name: expiry-date, dtype: object
```

```
In [ ]: contractHistory['expiry-date'].value_counts()
```

```
Out[ ]: 2011-03-31      9500
2010-03-31      8145
2012-03-31      8012
2017-03-31      6836
2013-03-31      6546
...
2027-01-05        1
2018-07-26        1
2028-03-06        1
2025-02-26        1
2025-03-13        1
Name: expiry-date, Length: 6859, dtype: int64
```

```
In [ ]: contractHistory['gsin-description_en'].describe()
```

```
Out[ ]: count      441199
unique      5188
top      ADP Software
freq      26529
Name: gsin-description_en, dtype: object
```

```
In [ ]: contractHistory['gsin-description_en'].value_counts()
```

```
Out[ ]: ADP Software 26529
Hotels, Motels and Commercial Accommodation 17226
Informatics Professional Services 16767
Human Resource Services, Business Consulting/Change Management; Project Management Services 8967
Construction of Other Buildings 7803
...
PACK CARRIER, COMBAT EQUIPMENT 1
Printing Letterpress 1
Lumber, Softwood (Balsam, Fir and Jack Pine) 1
Pumping Equipment, Portable (Firefighting, Ground) 1
Oil Separators 1
Name: gsin-description_en, Length: 5188, dtype: int64
```

```
In [ ]: contractHistory['competitive-tender_en'].describe()
```

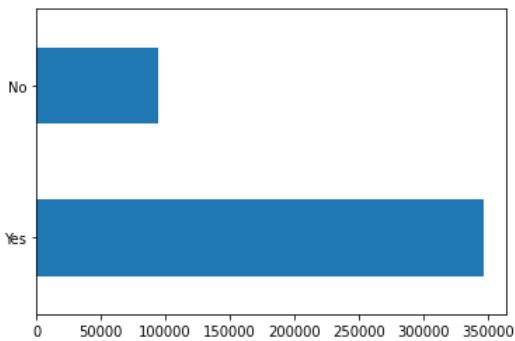
```
Out[ ]: count 441210
unique 2
top Yes
freq 346895
Name: competitive-tender_en, dtype: object
```

```
In [ ]: contractHistory['competitive-tender_en'].value_counts()
```

```
Out[ ]: Yes 346895
No 94315
Name: competitive-tender_en, dtype: int64
```

```
In [ ]: contractHistory['competitive-tender_en'].value_counts().plot(kind = 'barh')
```

```
Out[ ]: <AxesSubplot:>
```



```
In [ ]: contractHistory['limited-tender-reason-description_en'].describe()
```

```
Out[ ]: count 94299
unique 16
top Exclusive Rights
freq 57400
Name: limited-tender-reason-description_en, dtype: object
```

```
In [ ]: contractHistory['limited-tender-reason-description_en'].value_counts()
```

```
Out[ ]: Exclusive Rights 57400
Low Dollar Value 20183
Government Objectives Representing Best Interests/Value to Govt 7357
Interchangeable Parts 6622
Extreme Urgency 1123
Prices and/or Sources Fixed by Government Regulations 570
Consulting Services Regarding Matters of a Confidential Nature 453
Prototype Purchase 185
National Security Consideration 101
Exceptional Circumstances Under Article 508 (1) of AIT 72
Protection of Human, Animal, or Plant Life or Health 71
Additional Construction Services 63
Purchases Made Under Exceptionally Advantageous Cond. Short Term 51
Goods Purchased on a Commodity Market 39
New Construction Services 8
ZZ-Source Selected for Equitable Reasons 1
Name: limited-tender-reason-description_en, dtype: int64
```

```
In [ ]: contractHistory['solicitation-procedure-description_en'].describe()
```

```
Out[ ]: count 441210
unique 4
top Open Bidding
freq 269648
Name: solicitation-procedure-description_en, dtype: object
```

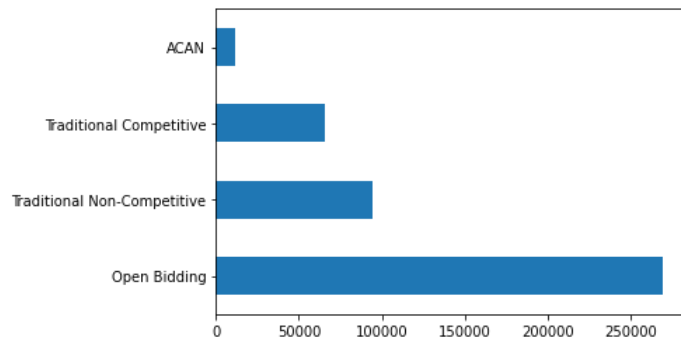
```
In [ ]: contractHistory['solicitation-procedure-description_en'].value_counts()
```

```
Out[ ]: Open Bidding 269648
Traditional Non-Competitive 94315
Traditional Competitive 65743
```

ACAN 11504  
Name: solicitation-procedure-description\_en, dtype: int64

```
In [ ]: contractHistory['solicitation-procedure-description_en'].value_counts().plot(kind = 'barh')
```

Out[ ]: <AxesSubplot:>



```
In [ ]: contractHistory['trade-agreement-description_en'].describe()
```

Out[ ]: count 436587  
unique 33  
top NONE  
freq 95914  
Name: trade-agreement-description\_en, dtype: object

```
In [ ]: contractHistory['trade-agreement-description_en'].value_counts()
```

Out[ ]: NONE 95914  
Canadian Free Trade Agreement (CFTA) 83414  
CETA / WTO-AGP / NAFTA / CFTA / FTAs with Peru / Colombia / Panama / Korea 68349  
WTO-AGP/NAFTA/AIT/Canada FTAs with Peru/Colombia/Panama 45872  
NAFTA / CFTA / FTAs with Peru / Colombia / Panama / Korea 32837  
Agreement on Internal Trade (AIT) 32158  
NAFTA/AIT/Canada FTAs with Peru/Colombia/Panama 28236  
WTO-AGP/AIT 16089  
CETA / WTO-AGP / NAFTA / FTAs with Peru / Colombia / Panama / Korea 8301  
GATT/NAFTA/AIT 4948  
CETA / CFTA 4665  
NAFTA / FTAs with Peru / Colombia / Panama / Korea 3085  
WTO-AGP/NAFTA/Canada FTAs with Peru/Colombia/Panama 2494  
CETA / WTO-AGP / CFTA 2474  
Set-Aside Program for Aboriginal Business (SPAB) 2386  
World Trade Organization - Agreement on Government Procurement (WTO-AGP) 1980  
NAFTA/Canada FTAs with Peru/Colombia/Panama 1036  
Land Claims Set-Aside Policy 470  
LCSA/CFTA 380  
NAFTA/CFTA/Canada FTAs with Peru/Colombia/Panama 333  
LCSA/AIT 295  
WTO-AGP/NAFTA/CFTA/Canada FTAs with Peru/Colombia/Panama 259  
AIT/NAFTA/WTO-AGP/CKTEA 172  
Canada - EU Comprehensive Economic and Trade Agreement (CETA) 170  
GATT/AIT 88  
NAFTA/GATT 88  
GATT 36  
AIT/CKTEA 31  
NAFTA/WTO-AGP/CKTEA 13  
AIT/WTO-AGP/CKTEA 6  
Open Bidding 5  
WTO-AGP/CFTA 2  
Source List (Not to be used for ACAN or NPP) 1  
Name: trade-agreement-description\_en, dtype: int64

```
In [ ]: contractHistory['supplier-standardized-name'].describe()
```

Out[ ]: count 441210  
unique 36355  
top SIMEX DEFENCE INC / DEFENSE SIMEX INC  
freq 4305  
Name: supplier-standardized-name, dtype: object

```
In [ ]: contractHistory['supplier-standardized-name'].value_counts()
```

Out[ ]: SIMEX DEFENCE INC / DEFENSE SIMEX INC 4305  
COSSETTE MEDIA 3516  
JHT DEFENSE INC 2699  
COSSETTE COMMUNICATION INC 2647  
MICROSOFT LICENSING, GP 2120  
...  
UNIVERSITY OF KENTUCKY 1  
ENVIROTEL 3000 INC 1  
ADVANCED IMAGING DEVICES GMBH 1  
CAMBRIDGE VISCOSITY, INC 1  
THE TREADMILL FACTORY 1  
Name: supplier-standardized-name, Length: 36355, dtype: int64

```
In [ ]: contractHistory['supplier-address-city'].describe()

Out[ ]: count      441091
unique    7261
top       Ottawa
freq      80001
Name: supplier-address-city, dtype: object

In [ ]: contractHistory['supplier-address-city'].value_counts()

Out[ ]: Ottawa      80001
Toronto    21108
Mississauga 15614
Calgary    9807
Montreal   9524
...
Sainte-Hénédine 1
REDONDO BEACH 1
Vicomaggio (Arezzo) 1
Saulnierville 1
SAN DIMAS 1
Name: supplier-address-city, Length: 7261, dtype: int64

In [ ]: contractHistory['supplier-address-prov-state'].describe()

Out[ ]: count      430737
unique    64
top       Ontario
freq      190079
Name: supplier-address-prov-state, dtype: object

In [ ]: contractHistory['supplier-address-prov-state'].value_counts()

Out[ ]: Ontario      190079
Quebec      84105
British Columbia 32371
Alberta     27917
Nova Scotia 20233
...
Vermont      29
Mississippi  22
Arkansas     19
South Dakota 14
Wyoming      9
Name: supplier-address-prov-state, Length: 64, dtype: int64

In [ ]: contractHistory['supplier-address-country'].describe()

Out[ ]: count      441210
unique    115
top       Canada
freq      398099
Name: supplier-address-country, dtype: object

In [ ]: contractHistory['supplier-address-country'].value_counts()

Out[ ]: Canada      398099
United States 32818
Germany      3241
United Kingdom 2538
Netherlands  441
...
Venezuela    1
Brunei Darussalam 1
Virgin Islands (U.S.) 1
Bermuda      1
Guam         1
Name: supplier-address-country, Length: 115, dtype: int64

In [ ]: contractHistory['supplier-address-postal-code'].describe()

Out[ ]: count      438200
unique    27226
top       H9R1A6
freq      4305
Name: supplier-address-postal-code, dtype: object

In [ ]: contractHistory['supplier-address-postal-code'].value_counts()

Out[ ]: H9R1A6      4305
M6K1X8      3516
G1K7R1      2942
H4R2E9      2730
89511       2122
...
60604-3562  1
P1L1G4      1
```

```
45014      1
C1N3J2      1
91773      1
Name: supplier-address-postal-code, Length: 27226, dtype: int64
```

```
In [ ]: contractHistory['organization-employee-count_en'].describe()
```

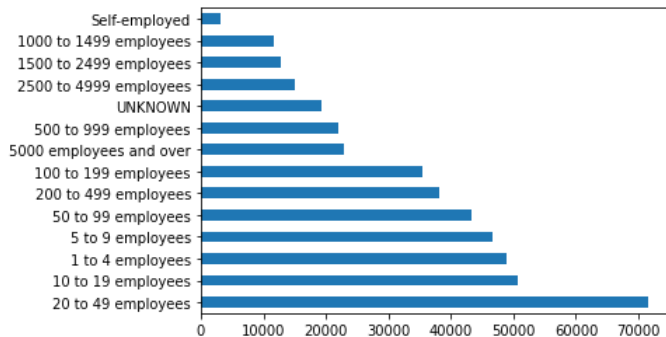
```
Out[ ]: count      441208
unique      14
top      20 to 49 employees
freq      71520
Name: organization-employee-count_en, dtype: object
```

```
In [ ]: contractHistory['organization-employee-count_en'].value_counts()
```

```
Out[ ]: 20 to 49 employees      71520
10 to 19 employees      50606
1 to 4 employees      48806
5 to 9 employees      46694
50 to 99 employees      43309
200 to 499 employees      38205
100 to 199 employees      35509
5000 employees and over      22845
500 to 999 employees      21979
UNKNOWN      19256
2500 to 4999 employees      14947
1500 to 2499 employees      12717
1000 to 1499 employees      11643
Self-employed      3172
Name: organization-employee-count_en, dtype: int64
```

```
In [ ]: contractHistory['organization-employee-count_en'].value_counts().plot(kind = 'barh')
```

```
Out[ ]: <AxesSubplot:>
```



```
In [ ]: contractHistory['end-user-entity_en'].describe()
```

```
Out[ ]: count      441210
unique      132
top      Public Works and Government Services Canada
freq      182963
Name: end-user-entity_en, dtype: object
```

```
In [ ]: contractHistory['end-user-entity_en'].value_counts()
```

```
Out[ ]: Public Works and Government Services Canada      182963
Department of National Defence      130899
Fisheries and Oceans Canada      16470
Correctional Service of Canada      11339
Canadian Commercial Corporation      7686
...
CANADIAN MUSEUM OF IMMIGRATION AT PIER 21      1
Canadian Museum for Human Rights      1
Canadian Museum of Nature      1
National Gallery of Canada      1
INDIGENOUS SERVICES CANADA      1
Name: end-user-entity_en, Length: 132, dtype: int64
```

```
In [ ]: contractHistory['contracting-entity-office-name_en'].describe()
```

```
Out[ ]: count      431285
unique      3422
top      NDHQ
freq      19931
Name: contracting-entity-office-name_en, dtype: object
```

```
In [ ]: contractHistory['contracting-entity-office-name_en'].value_counts()
```

```
Out[ ]: NDHQ      19931
CONSOLIDATED PROC LP ICPSS      16759
BUSINESS MANAGEMENT DIR.      16353
COMMANDING OFFICER      12930
```

```
CONSOLIDATED PROC HL ICPSS      12685
...
31 SVC BN TECH SERV (MAINT)      1
GTIS COMSEC                      1
WHITEHORSE CADET SUM.TRAIN.CTR   1
INTERNATL&INTERGOVTL AFFAIRS    1
SMRC                             1
Name: contracting-entity-office-name_en, Length: 3422, dtype: int64
```

```
In [ ]: contractHistory['contracting-address-street-1'].describe()
```

```
Out[ ]: count          441182
unique          3140
top            101 COLONEL BY DR.
freq           25490
Name: contracting-address-street-1, dtype: object
```

```
In [ ]: contractHistory['contracting-address-street-1'].value_counts()
```

```
Out[ ]: 101 COLONEL BY DR.          25490
PORTAGE III 7B3                    20515
PORTAGE III 6B1                    15962
PORTAGE III 7B1                    13245
CFSD MONTREAL                     12930
...
495 PROSPECT ST                    1
PL.VANIER TWR B 10TH FL.           1
PORTAGE IV 8TH FL.                 1
PETAWAWA                          1
101 PR COLONEL BY                  1
Name: contracting-address-street-1, Length: 3140, dtype: int64
```

```
In [ ]: contractHistory['contracting-address-street-2'].describe()
```

```
Out[ ]: count          308117
unique          1561
top            11 LAURIER ST
freq           82908
Name: contracting-address-street-2, dtype: object
```

```
In [ ]: contractHistory['contracting-address-street-2'].value_counts()
```

```
Out[ ]: 11 LAURIER ST                82908
6363 RUE NOTRE DAME ST E.          12930
101 COLONEL BY DR.                 11587
50 O CONNOR ST                     4416
800 RUE DE LA GAUCHETIERE O.       4131
...
P.O.BOX 220                        1
RAMP #7 - 45 SACRE COEUR BLVD      1
5421 ROBERTSON RD                  1
130 BENTLEY AVE                    1
25TH FLOOR, RM 2501                1
Name: contracting-address-street-2, Length: 1561, dtype: int64
```

```
In [ ]: contractHistory['contracting-address-city'].describe()
```

```
Out[ ]: count          441182
unique          440
top          OTTAWA
freq          130007
Name: contracting-address-city, dtype: object
```

```
In [ ]: contractHistory['contracting-address-city'].value_counts()
```

```
Out[ ]: OTTAWA          130007
GATINEAU          72006
Gatineau          31369
MONTREAL          24289
EDMONTON          13144
...
MERRIT            1
CARDSTON          1
BURGEO            1
DELORAINÉ         1
ANTIGONISH        1
Name: contracting-address-city, Length: 440, dtype: int64
```

```
In [ ]: contractHistory['contracting-address-prov-state'].describe()
```

```
Out[ ]: count          440905
unique          13
top          Ontario
freq          166823
Name: contracting-address-prov-state, dtype: object
```

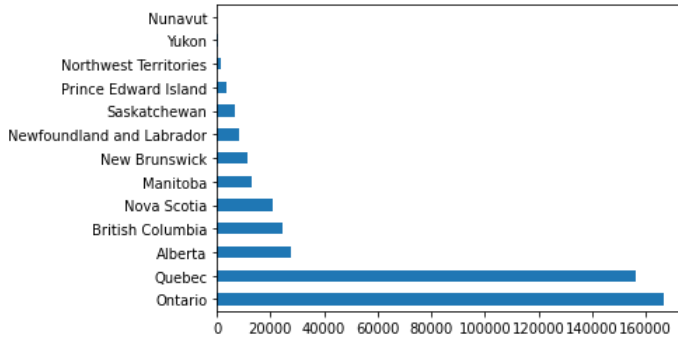
```
In [ ]: contractHistory['contracting-address-prov-state'].value_counts()
```



```
Out[ ]: Ontario      166823
Quebec      156348
Alberta     27574
British Columbia 24574
Nova Scotia 21081
Manitoba    12862
New Brunswick 11444
Newfoundland and Labrador 8225
Saskatchewan 6927
Prince Edward Island 3352
Northwest Territories 1272
Yukon       315
Nunavut     108
Name: contracting-address-prov-state, dtype: int64
```

```
In [ ]: contractHistory['contracting-address-prov-state'].value_counts().plot(kind = 'barh')
```

```
Out[ ]: <AxesSubplot:>
```



```
In [ ]: contractHistory['contracting-address-postal-code'].describe()
```

```
Out[ ]: count      441180
unique      1196
top         K1A0S5
freq        100214
Name: contracting-address-postal-code, dtype: object
```

```
In [ ]: contractHistory['contracting-address-postal-code'].value_counts()
```

```
Out[ ]: K1A0S5      100214
K1A0K2      42335
H1N2E9      13430
V6Z0B9      9980
B3K5X5       8591
...
N0H2L0        1
J4Z3T8        1
J8Y6W4        1
B2A3M4        1
V1Y5V5        1
Name: contracting-address-postal-code, Length: 1196, dtype: int64
```

```
In [ ]: contractHistory['contracting-address-country'].describe()
```

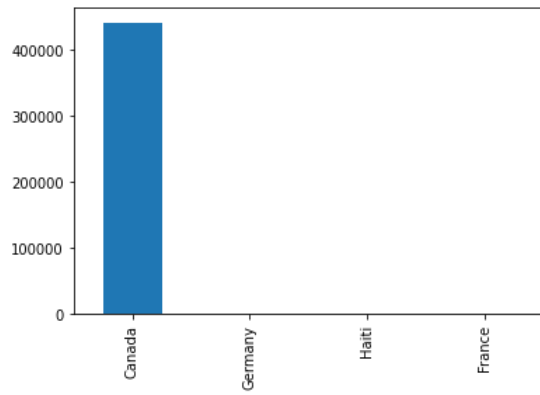
```
Out[ ]: count      441182
unique        4
top         Canada
freq        440905
Name: contracting-address-country, dtype: object
```

```
In [ ]: contractHistory['contracting-address-country'].value_counts()
```

```
Out[ ]: Canada      440905
Germany      274
Haiti        2
France       1
Name: contracting-address-country, dtype: int64
```

```
In [ ]: contractHistory['contracting-address-country'].value_counts().plot(kind = 'bar')
```

```
Out[ ]: <AxesSubplot:>
```



```
In [ ]: contractHistory['procurement-entity-name_en'].describe()
```

```
Out[ ]: count          441210
unique              1
top    Public Works and Government Services Canada
freq          441210
Name: procurement-entity-name_en, dtype: object
```

```
In [ ]: contractHistory['procurement-entity-name_en'].value_counts()
```

```
Out[ ]: Public Works and Government Services Canada    441210
Name: procurement-entity-name_en, dtype: int64
```