

```
In [2]: import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
%matplotlib inline
sns.set(color_codes = True)

In [3]: car = pd.read_csv('C:/Users/Home/Desktop/electronic-card-transactions-january-2021-csv-tables.csv')
```

```
In [4]: car.head() #prints starting from thhe beginning
car.tail() #prints atarting from the bottom
```

Out[4]:

	Series_reference	Period	Data_value	Suppressed	STATUS	UNITS	Magnitude	Subject	Group	Series_title_1	Series_title_2	Series_title_3
17505	ECTQ.S4AXP	2019.12	43.6	NaN	F	Percent	0	Electronic Card Transactions (ANZSIC06) - ECT	Electronic card transactions by mean and propo...	Actual	Debit card usage as a proportion of total ECT ...	
17506	ECTQ.S4AXP	2020.03	42.6	NaN	F	Percent	0	Electronic Card Transactions (ANZSIC06) - ECT	Electronic card transactions by mean and propo...	Actual	Debit card usage as a proportion of total ECT ...	
17507	ECTQ.S4AXP	2020.06	36.3	NaN	F	Percent	0	Electronic Card Transactions (ANZSIC06) - ECT	Electronic card transactions by mean and propo...	Actual	Debit card usage as a proportion of total ECT ...	
17508	ECTQ.S4AXP	2020.09	39.2	NaN	F	Percent	0	Electronic Card Transactions (ANZSIC06) - ECT	Electronic card transactions by mean and propo...	Actual	Debit card usage as a proportion of total ECT ...	
17509	ECTQ.S4AXP	2020.12	38.6	NaN	F	Percent	0	Electronic Card Transactions (ANZSIC06) - ECT	Electronic card transactions by mean and propo...	Actual	Debit card usage as a proportion of total ECT ...	

```
In [5]: car.columns
```

```
Out[5]: Index(['Series_reference', 'Period', 'Data_value', 'Suppressed', 'STATUS', 'UNITS', 'Magnitude', 'Subject', 'Group', 'Series_title_1', 'Series_title_2', 'Series_title_3', 'Series_title_4', 'Series_title_5'], dtype='object')
```

```
In [6]: car.describe(include = 'all')
```

Out[6]:

	Series_reference	Period	Data_value	Suppressed	STATUS	UNITS	Magnitude	Subject	Group	Series_title_1	Series_title_2	Series_title_3
count	17510	17510.000000	1.617900e+04	210	17510	17510	17510.000000	17510	17510	17510		
unique	137	NaN	NaN	1	4	3	NaN	1	5	3		
top	ECTM.S19AX	NaN	NaN	Y	R	Dollars	NaN	Electronic Card Transactions (ANZSIC06) - ECT	Values - Electronic card transactions A/S/T by...	Actual		
freq	253	NaN	NaN	210	8268	12729	NaN	17510	7544	9011		
mean	NaN	2010.782533	1.490137e+07	NaN	NaN	NaN	4.203427	NaN	NaN	NaN		
std	NaN	5.701829	8.197068e+07	NaN	NaN	NaN	2.748126	NaN	NaN	NaN		
min	NaN	2000.010000	-5.130000e+01	NaN	NaN	NaN	0.000000	NaN	NaN	NaN		
25%	NaN	2006.060000	1.766500e+02	NaN	NaN	NaN	0.000000	NaN	NaN	NaN		
50%	NaN	2011.030000	1.153500e+03	NaN	NaN	NaN	6.000000	NaN	NaN	NaN		
75%	NaN	2016.030000	4.099150e+03	NaN	NaN	NaN	6.000000	NaN	NaN	NaN		
max	NaN	2021.010000	1.874441e+09	NaN	NaN	NaN	6.000000	NaN	NaN	NaN		

```
In [8]: car = car.drop(['Series_title_3','Series_title_4','Series_title_5'], axis = 1)
car.head(4)
```

Out[8]:

	Series_reference	Period	Data_value	Suppressed	STATUS	UNITS	Magnitude	Subject	Group	Series_title_1	Series_title_2	Series_title_3
0	ECTA.S19A1	2001.03	2462.5	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
1	ECTA.S19A1	2002.03	17177.2	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
2	ECTA.S19A1	2003.03	22530.5	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
3	ECTA.S19A1	2004.03	28005.1	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	

```
In [10]: car = car.rename(columns = {"Period": "Time Period"})
car.head(100)
```

Out[10]:

	Series_reference	Time Period	Data_value	Suppressed	STATUS	UNITS	Magnitude	Subject	Group	Series_title_1	Series_title_2	Series_title_3
0	ECTA.S19A1	2001.03	2462.5	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
1	ECTA.S19A1	2002.03	17177.2	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
2	ECTA.S19A1	2003.03	22530.5	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
3	ECTA.S19A1	2004.03	28005.1	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
4	ECTA.S19A1	2005.03	30629.6	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	RTS total industries	
...
95	ECTA.S19AX	2016.03	41807.0	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	Debit	
96	ECTA.S19AX	2017.03	42142.5	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	Debit	
97	ECTA.S19AX	2018.03	41618.6	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	Debit	
98	ECTA.S19AX	2019.03	41143.5	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	Debit	
99	ECTA.S19AX	2020.03	41298.0	NaN	F	Dollars	6	Electronic Card Transactions (ANZSIC06) - ECT	Total values - Electronic card transactions A/...	Actual	Debit	

100 rows x 11 columns

```
In [34]: car.shape
```

Out[34]: (17510, 11)

```
In [37]: car.count()
```

Out[37]:

Series_reference	17510
Time Period	17510
Data_value	16179
Suppressed	210
STATUS	17510
UNITS	17510
Magnitude	17510
Subject	17510
Group	17510
Series_title_1	17510
Series_title_2	17510
dtype:	int64

```
In [45]: car = car.drop_duplicates()
car.count()
```

Out[45]:

Series_reference	0
Time Period	0
Data_value	0
Suppressed	0
STATUS	0
UNITS	0
Magnitude	0
Subject	0
Group	0
Series_title_1	0
Series_title_2	0
dtype:	int64

```
In [63]: print(car.isnull().sum())
```

Out[63]:

Series_reference	0
Period	0
Data_value	1331
Suppressed	17300
STATUS	0
UNITS	0
Magnitude	0
Subject	0
Group	0
Series_title_1	0
Series_title_2	0
Series_title_3	14052
Series_title_4	17510
Series_title_5	17510
dtype:	int64

```
In [60]: car = car.dropna()
car.count()
```

Out[60]:

Series_reference	0
Period	0
Data_value	0
Suppressed	0
STATUS	0
UNITS	0
Magnitude	0
Subject	0
Group	0
Series_title_1	0
Series_title_2	0
Series_title_3	0
Series_title_4	0
Series_title_5	0
dtype:	int64