

ASSIGNMENT -4

EXTRACT , TRANSFORM , LOAD

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ETL is short for extract, transform, load, three database functions that are combined into one tool to pull data out of one database and place it into another database.

Extract is the process of reading data from a database. In this stage, the data is collected, often from multiple and different types of sources.

Transform is the process of converting the extracted data from its previous form into the form it needs to be in so that it can be placed into another database. Transformation occurs by using rules or lookup tables or by combining the data with other data.

Load is the process of writing the data into the target database.

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Out[7]:

	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id	platform	device
0	21.97	4.82	1557.33	22787	android	GT-I9505
1	1710.08	136.88	7267.55	22788	android	SM-G930F
2	1710.08	136.88	7267.55	22789	android	SM-G930F
3	94.46	35.17	519.12	22790	android	D2303
4	71.59	79.26	1557.33	22792	android	SM-G361F

In [8]: `m_inner.tail()`

```
# In[15]:  
# left merge which keeps the left values, whereas keeps the matched with right values and all other values in right dataframe
```

Out[8]:

	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id	platform	device
154	198.59	90.49	5191.12	23043	android	SM-G900F
155	198.59	90.49	3114.67	23044	android	SM-G900F
156	106.65	82.13	5191.12	23046	android	Moto G (4)
157	344.53	20.53	519.12	23049	android	SM-G900F
158	42.75	46.83	5191.12	23053	android	Vodafone Smart ultra 6

In [9]: `m_left = pd.merge(usage, device[['platform', 'device', 'use_id']], how='left', on='use_id')`

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Out[9]:

	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id	platform	device
0	21.97	4.82	1557.33	22787	android	GT-I9505
1	1710.08	136.88	7267.55	22788	android	SM-G930F
2	1710.08	136.88	7267.55	22789	android	SM-G930F
3	94.46	35.17	519.12	22790	android	D2303
4	71.59	79.26	1557.33	22792	android	SM-G361F

In [10]: `m_left.tail()`

```
# In[17]:  
# right merge which keeps the right values, whereas keeps the matched with left values and all other values in left dataframe
```

Out[10]:

	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id	platform	device
235	280.86	68.44	896.96	25008	NaN	NaN
236	97.12	36.50	2815.00	25040	NaN	NaN
237	355.93	12.37	6828.09	25046	NaN	NaN
238	632.06	120.46	1453.16	25058	NaN	NaN
239	488.70	906.92	3089.85	25220	NaN	NaN

In [11]:

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```
outgoing_mins_per_month outgoing_sms_per_month monthly_mb use_id platform device
0 21.97 4.82 1557.33 22787 android GT-I9505
1 1710.08 136.88 7267.55 22788 android SM-G930F
2 1710.08 136.88 7267.55 22789 android SM-G930F
3 94.46 35.17 519.12 22790 android D2303
4 71.59 79.26 1557.33 22792 android SM-G361F
```

In [12]: `m_right.tail()`

```
# In[21]:
# outer merging will keep matched column values between left and right dataframes, and also keeps the cells which are not
# matched in both left and right dataframes with NaN values
# In[ ]:
```

Out[12]:

	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id	platform	device
267	NaN	NaN	NaN	23047	ios	iPhone7,1
268	NaN	NaN	NaN	23048	android	ONEPLUS A3003
269	NaN	NaN	NaN	23050	ios	iPhone7,2
270	NaN	NaN	NaN	23051	ios	iPhone7,2
271	NaN	NaN	NaN	23052	ios	iPhone8,4

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Out[13]:

	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id	platform	device
0	21.97	4.82	1557.33	22787	android	GT-I9505
1	1710.08	136.88	7267.55	22788	android	SM-G930F
2	1710.08	136.88	7267.55	22789	android	SM-G930F
3	94.46	35.17	519.12	22790	android	D2303
4	71.59	79.26	1557.33	22792	android	SM-G361F

In [14]: `m_outer.tail()`

Out[14]:

	outgoing_mins_per_month	outgoing_sms_per_month	monthly_mb	use_id	platform	device
348	NaN	NaN	NaN	23047	ios	iPhone7,1
349	NaN	NaN	NaN	23048	android	ONEPLUS A3003
350	NaN	NaN	NaN	23050	ios	iPhone7,2
351	NaN	NaN	NaN	23051	ios	iPhone7,2
352	NaN	NaN	NaN	23052	ios	iPhone8,4

In []:

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