```
In [1]:  import pandas as pd
         import numpy as np
         vehicle=pd.read_csv(r'C:\Venkat\Python\Practice_Material\21st- EDA Practicle\DataSets\dataset_1_202410291655.csv')
```

```
In [43]:  vehicle.columns
```

```
Out[43]:  Index(['destination', 'passanger', 'weather', 'temperature', 'time', 'coupon',
                 'expiration', 'gender', 'age', 'maritalStatus', 'has_children',
                 'education', 'occupation', 'income', 'car', 'Bar', 'CoffeeHouse',
                 'CarryAway', 'RestaurantLessThan20', 'Restaurant20To50',
                 'toCoupon_GEQ5min', 'toCoupon_GEQ15min', 'toCoupon_GEQ25min',
                 'direction_same', 'direction_opp', 'Y', 'row_count'],
                dtype='object')
```

```
In [2]:  destination1 = pd.DataFrame()
         destination1['Destination']=vehicle['destination']
         destination1
```

Out[2]:

	Destination
0	No Urgent Place
1	No Urgent Place
2	No Urgent Place
3	No Urgent Place
4	No Urgent Place
...	...
12679	Home
12680	Work
12681	Work
12682	Work
12683	Work

12684 rows × 1 columns

```
In [57]:  destination1
```

Out[57]:

	Destination
0	No Urgent Place
1	No Urgent Place
2	No Urgent Place
3	No Urgent Place
4	No Urgent Place
...	...
12679	Home
12680	Work
12681	Work
12682	Work
12683	Work

12684 rows × 1 columns

```
In [73]:  vehicle[vehicle.groupby('occupation')]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[73], line 1
----> 1 vehicle[vehicle.groupby('occupation')]

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4108, in DataFrame.__getitem__(self, key)
   4106     if is_iterator(key):
   4107         key = list(key)
-> 4108     indexer = self.columns._get_indexer_strict(key, "columns")[1]
   4110 # take() does not accept boolean indexers
   4111 if getattr(indexer, "dtype", None) == bool:

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:6195, in Index._get_indexer_strict(self, key, axis_name)
   6192     keyarr = com.asarray_tuplesafe(keyarr)
   6194 if self._index_as_unique:
-> 6195     indexer = self.get_indexer_for(keyarr)
   6196     keyarr = self.reindex(keyarr)[0]
   6197 else:

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:6182, in Index.get_indexer_for(self, target)
   6164     """
   6165     Guaranteed return of an indexer even when non-unique.
   6166
   (...)
   6179     array([0, 2])
   6180     """
   6181     if self._index_as_unique:
-> 6182         return self.get_indexer(target)
   6183     indexer, _ = self.get_indexer_non_unique(target)
   6184     return indexer

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3953, in Index.get_indexer(self, target, method, limit, tolerance)
   3948     target = target.astype(dtype, copy=False)
   3949     return this._get_indexer(
   3950         target, method=method, limit=limit, tolerance=tolerance
   3951     )
-> 3953 return self._get_indexer(target, method, limit, tolerance)

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3980, in Index._get_indexer(self, target, method, limit, tolerance)
   3977     else:
   3978         tgt_values = target._get_engine_target()
-> 3980     indexer = self._engine.get_indexer(tgt_values)
   3982 return ensure_platform_int(indexer)

File index.pyx:351, in pandas._libs.index.IndexEngine.get_indexer()

File pandas\_libs\hashtable_class_helper.pxi:7132, in pandas._libs.hashtable.PyObjectHashTable.lookup()

TypeError: unhashable type: 'DataFrame'
```

```
In [75]:  vehicle.rename(columns={'destination':'Destination'},inplace=True)
```

```
In [97]:  vehicle.groupby('occupation').size().reset_index(name='count')
```

Out[97]:

	occupation	count
0	Architecture & Engineering	175
1	Arts Design Entertainment Sports & Media	629
2	Building & Grounds Cleaning & Maintenance	44
3	Business & Financial	544
4	Community & Social Services	241
5	Computer & Mathematical	1408
6	Construction & Extraction	154
7	Education&Training&Library	943
8	Farming Fishing & Forestry	43
9	Food Preparation & Serving Related	298
10	Healthcare Practitioners & Technical	244
11	Healthcare Support	242
12	Installation Maintenance & Repair	133
13	Legal	219
14	Life Physical Social Science	170
15	Management	838
16	Office & Administrative Support	639
17	Personal Care & Service	175
18	Production Occupations	110
19	Protective Service	175
20	Retired	495
21	Sales & Related	1093
22	Student	1584
23	Transportation & Material Moving	218
24	Unemployed	1870

In [113…
```python
vehicle.groupby('weather')['temperature'].mean().reset_index(name='avg(temerature)')
```

Out[113…

	weather	avg(temerature)
0	Rainy	55.000000
1	Snowy	30.000000
2	Sunny	68.946271

In [139…
```python
vehicle.groupby('weather')['temperature'].size().reset_index(name='count_temp')
```

Out[139…

	weather	count_temp
0	Rainy	1210
1	Snowy	1405
2	Sunny	10069

In [147…
```python
vehicle.groupby('weather')['temperature'].nunique().reset_index(name='count_dist_temp')
```

Out[147…

	weather	count_dist_temp
0	Rainy	1
1	Snowy	1
2	Sunny	3

In [151…
```python
vehicle[vehicle['temperature'].unique()]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[151], line 1
----> 1 vehicle[vehicle['temperature'].unique()]

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4108, in DataFrame.__getitem__(self, key)
   4106     if is_iterator(key):
   4107         key = list(key)
-> 4108     indexer = self.columns._get_indexer_strict(key, "columns")[1]
   4110 # take() does not accept boolean indexers
   4111 if getattr(indexer, "dtype", None) == bool:

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:6200, in Index._get_indexer_strict(self, key, axis_name)
   6197 else:
   6198     keyarr, indexer, new_indexer = self._reindex_non_unique(keyarr)
-> 6200 self._raise_if_missing(keyarr, indexer, axis_name)
   6202 keyarr = self.take(indexer)
   6203 if isinstance(key, Index):
   6204     # GH 42790 - Preserve name from an Index

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:6249, in Index._raise_if_missing(self, key, indexer, axis_name)
   6247 if nmissing:
   6248     if nmissing == len(indexer):
-> 6249         raise KeyError(f"None of [{key}] are in the [{axis_name}]")
   6251     not_found = list(ensure_index(key)[missing_mask.nonzero()[0]].unique())
   6252     raise KeyError(f"{not_found} not in index")

KeyError: "None of [Index([55, 80, 30], dtype='int64')] are in the [columns]"
```

In [155…
```python
vehicle.groupby('weather')['temperature'].sum().reset_index(name='sum_temp')
```

Out[155…

	weather	sum_temp
0	Rainy	66550
1	Snowy	42150
2	Sunny	694220

In [159…
```python
vehicle.groupby('weather')['temperature'].min().reset_index(name='min_temp')
```

```
Out[159...
```

	weather	min_temp
0	Rainy	55
1	Snowy	30
2	Sunny	30

```
In [161... vehicle.groupby('weather')['temperature'].max().reset_index(name='max_temp')
```

```
Out[161...
```

	weather	max_temp
0	Rainy	55
1	Snowy	30
2	Sunny	80

```
In [171... vehicle.groupby('occupation')[['occupation'].val
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[171], line 1
----> 1 vehicle.groupby('occupation')[['occupation'=='Student']]

File ~\anaconda3\Lib\site-packages\pandas\core\groupby\generic.py:1951, in DataFrameGroupBy.__getitem__(self, key)
   1944 if isinstance(key, tuple) and len(key) > 1:
   1945     # if len == 1, then it becomes a SeriesGroupBy and this is actually
   1946     # valid syntax, so don't raise
   1947     raise ValueError(
   1948         "Cannot subset columns with a tuple with more than one element. "
   1949         "Use a list instead."
   1950     )
-> 1951 return super().__getitem__(key)

File ~\anaconda3\Lib\site-packages\pandas\core\base.py:239, in SelectionMixin.__getitem__(self, key)
    237     if len(self.obj.columns.intersection(key)) != len(set(key)):
    238         bad_keys = list(set(key).difference(self.obj.columns))
--> 239         raise KeyError(f"Columns not found: {str(bad_keys)[1:-1]}")
    240     return self._gotitem(list(key), ndim=2)
    242 else:

KeyError: 'Columns not found: False'
```

```
In [3]: veh=pd.DataFrame().reindex_like(vehicle)
```

```
In [11]: del veh
```

```
In [13]: veh=pd.DataFrame(columns=vehicle.columns)
```

```
In [15]: veh
```

```
Out[15]:
```

destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25mi

0 rows × 27 columns

```
In [30]: del veh
```

```
In [34]: veh=vehicle.copy()
```

```
In [26]: veh[:,:]=''
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3805, in Index.get_loc(self, key)
   3804 try:
-> 3805     return self._engine.get_loc(casted_key)
   3806 except KeyError as err:

File index.pyx:167, in pandas._libs.index.IndexEngine.get_loc()

File index.pyx:196, in pandas._libs.index.IndexEngine.get_loc()

File pandas\_libs\hashtable_class_helper.pxi:7081, in pandas._libs.hashtable.PyObjectHashTable.get_item()

File pandas\_libs\hashtable_class_helper.pxi:7089, in pandas._libs.hashtable.PyObjectHashTable.get_item()

KeyError: (slice(None, None, None), slice(None, None, None))

During handling of the above exception, another exception occurred:

InvalidIndexError                         Traceback (most recent call last)
Cell In[26], line 1
----> 1 veh[:,:]=''

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4311, in DataFrame.__setitem__(self, key, value)
   4308     self._setitem_array([key], value)
   4309 else:
   4310     # set column
-> 4311     self._set_item(key, value)

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4538, in DataFrame._set_item(self, key, value)
   4535             value = np.tile(value, (len(existing_piece.columns), 1)).T
   4536             refs = None
-> 4538 self._set_item_mgr(key, value, refs)

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4485, in DataFrame._set_item_mgr(self, key, value, refs)
   4481 def _set_item_mgr(
   4482     self, key, value: ArrayLike, refs: BlockValuesRefs | None = None
   4483 ) -> None:
   4484     try:
-> 4485         loc = self._info_axis.get_loc(key)
   4486     except KeyError:
   4487         # This item wasn't present, just insert at end
   4488         self._mgr.insert(len(self._info_axis), key, value, refs)

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3811, in Index.get_loc(self, key)
   3806 except KeyError as err:
   3807     if isinstance(casted_key, slice) or (
   3808         isinstance(casted_key, abc.Iterable)
   3809         and any(isinstance(x, slice) for x in casted_key)
   3810     ):
-> 3811         raise InvalidIndexError(key)
   3812     raise KeyError(key) from err
   3813 except TypeError:
   3814     # If we have a listlike key, _check_indexing_error will raise
   3815     #  InvalidIndexError. Otherwise we fall through and re-raise
   3816     #  the TypeError.

InvalidIndexError: (slice(None, None, None), slice(None, None, None))
```

```
In [32]: veh
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[32], line 1
----> 1 veh

NameError: name 'veh' is not defined
```

In [36]: `veh`

Out[36]:

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCou
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12679	Home	Partner	Rainy	55	6PM	Carry out & Take away	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12680	Work	Alone	Rainy	55	7AM	Carry out & Take away	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12681	Work	Alone	Snowy	30	7AM	Coffee House	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12682	Work	Alone	Snowy	30	7AM	Bar	1d	Male	26	Single	...	1~3	4~8	1~3	1	1	
12683	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	2h	Male	26	Single	...	1~3	4~8	1~3	1	0	

12684 rows × 27 columns

In [38]: `veh[1:,:]=''`

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3805, in Index.get_loc(self, key)
   3804 try:
-> 3805     return self._engine.get_loc(casted_key)
   3806 except KeyError as err:

File index.pyx:167, in pandas._libs.index.IndexEngine.get_loc()

File index.pyx:196, in pandas._libs.index.IndexEngine.get_loc()

File pandas\_libs\hashtable_class_helper.pxi:7081, in pandas._libs.hashtable.PyObjectHashTable.get_item()

File pandas\_libs\hashtable_class_helper.pxi:7089, in pandas._libs.hashtable.PyObjectHashTable.get_item()

KeyError: (slice(1, None, None), slice(None, None, None))

During handling of the above exception, another exception occurred:

InvalidIndexError                         Traceback (most recent call last)
Cell In[38], line 1
----> 1 veh[1:,:]=''

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4311, in DataFrame.__setitem__(self, key, value)
   4308     self._setitem_array([key], value)
   4309 else:
   4310     # set column
-> 4311     self._set_item(key, value)

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4538, in DataFrame._set_item(self, key, value)
   4535         value = np.tile(value, (len(existing_piece.columns), 1)).T
   4536     refs = None
-> 4538 self._set_item_mgr(key, value, refs)

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4485, in DataFrame._set_item_mgr(self, key, value, refs)
   4481 def _set_item_mgr(
   4482     self, key, value: ArrayLike, refs: BlockValuesRefs | None = None
   4483 ) -> None:
   4484     try:
-> 4485         loc = self._info_axis.get_loc(key)
   4486     except KeyError:
   4487         # This item wasn't present, just insert at end
   4488         self._mgr.insert(len(self._info_axis), key, value, refs)

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3811, in Index.get_loc(self, key)
   3806 except KeyError as err:
   3807     if isinstance(casted_key, slice) or (
   3808         isinstance(casted_key, abc.Iterable)
   3809         and any(isinstance(x, slice) for x in casted_key)
   3810     ):
-> 3811         raise InvalidIndexError(key)
   3812     raise KeyError(key) from err
   3813 except TypeError:
   3814     # If we have a listlike key, _check_indexing_error will raise
   3815     #  InvalidIndexError. Otherwise we fall through and re-raise
   3816     #  the TypeError.

InvalidIndexError: (slice(1, None, None), slice(None, None, None))
```

In [40]: `veh`

```
Out[40]:
```

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCou
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12679	Home	Partner	Rainy	55	6PM	Carry out & Take away	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12680	Work	Alone	Rainy	55	7AM	Carry out & Take away	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12681	Work	Alone	Snowy	30	7AM	Coffee House	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12682	Work	Alone	Snowy	30	7AM	Bar	1d	Male	26	Single	...	1~3	4~8	1~3	1	1	
12683	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	2h	Male	26	Single	...	1~3	4~8	1~3	1	0	

12684 rows × 27 columns

```
In [42]: del veh

In [103... veh=pd.DataFrame(columns=vehicle.columns)

In [46]: veh
```

```
Out[46]:
```

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25mi

0 rows × 27 columns

```
In [7]: firstrow=vehicle.iloc[0]

In [9]: firstrow['destination']='Union'
```

```
C:\Users\91807\AppData\Local\Temp\ipykernel_33248\2514204985.py:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  firstrow['destination']='Union'
```

```
In [11]: firstrow
```

```
Out[11]: destination                          Union
         passanger                            Alone
         weather                              Sunny
         temperature                             55
         time                                   2PM
         coupon                     Restaurant(<20)
         expiration                              1d
         gender                              Female
         age                                     21
         maritalStatus              Unmarried partner
         has_children                             1
         education         Some college - no degree
         occupation                      Unemployed
         income                   $37500 - $49999
         car                                    NaN
         Bar                                  never
         CoffeeHouse                          never
         CarryAway                              NaN
         RestaurantLessThan20                   4~8
         Restaurant20To50                       1~3
         toCoupon_GEQ5min                         1
         toCoupon_GEQ15min                        0
         toCoupon_GEQ25min                        0
         direction_same                           0
         direction_opp                            1
         Y                                        1
         row_count                                1
         Name: 0, dtype: object
```

```
In [58]: type(firstrow)
```

```
Out[58]: pandas.core.series.Series
```

```
In [13]: veh=pd.concat(veh,firstrow)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[13], line 1
----> 1 veh=pd.concat(veh,firstrow)

NameError: name 'veh' is not defined
```

```
In [15]: veh
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[15], line 1
----> 1 veh

NameError: name 'veh' is not defined
```

```
In [5]: destination1
```

```
Out[5]:              Destination

             0    No Urgent Place

             1    No Urgent Place

             2    No Urgent Place

             3    No Urgent Place

             4    No Urgent Place

            ...             ...

         12679          Home

         12680          Work

         12681          Work

         12682          Work

         12683          Work

         12684 rows × 1 columns
```

In [17]: `veh`

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[17], line 1
----> 1 veh

NameError: name 'veh' is not defined
```

In [21]: `veh=pd.concat([veh,firstrow],ignore_index=True)`

In [29]: `veh.isnull().info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 27 entries, 0 to 26
Data columns (total 28 columns):
 #   Column              Non-Null Count  Dtype
---  ------              --------------  -----
 0   destination         27 non-null     bool
 1   passanger           27 non-null     bool
 2   weather             27 non-null     bool
 3   temperature         27 non-null     bool
 4   time                27 non-null     bool
 5   coupon              27 non-null     bool
 6   expiration          27 non-null     bool
 7   gender              27 non-null     bool
 8   age                 27 non-null     bool
 9   maritalStatus       27 non-null     bool
 10  has_children        27 non-null     bool
 11  education           27 non-null     bool
 12  occupation          27 non-null     bool
 13  income              27 non-null     bool
 14  car                 27 non-null     bool
 15  Bar                 27 non-null     bool
 16  CoffeeHouse         27 non-null     bool
 17  CarryAway           27 non-null     bool
 18  RestaurantLessThan20 27 non-null    bool
 19  Restaurant20To50    27 non-null     bool
 20  toCoupon_GEQ5min    27 non-null     bool
 21  toCoupon_GEQ15min   27 non-null     bool
 22  toCoupon_GEQ25min   27 non-null     bool
 23  direction_same      27 non-null     bool
 24  direction_opp       27 non-null     bool
 25  Y                   27 non-null     bool
 26  row_count           27 non-null     bool
 27  0                   27 non-null     bool
dtypes: bool(28)
memory usage: 888.0 bytes
```

In [35]: `del veh`

In [53]: `veh=pd.DataFrame(columns=vehicle.columns)`
         `#vehicle.iloc[0]`

In [81]: `row1[2]`

```
C:\Users\91807\AppData\Local\Temp\ipykernel_33248\1707061705.py:1: FutureWarning: Series.__getitem__ treating keys as positions is deprecated. In a future version, integer keys will always be treated as la
bels (consistent with DataFrame behavior). To access a value by position, use `ser.iloc[pos]`
  row1[2]
```

Out[81]: `'Sunny'`

In [85]: `veh=pd.DataFrame(vehicle.iloc[0])`

In [89]: `veh.shape`

Out[89]: `(27, 1)`

In [91]: `veh1=pd.DataFrame(veh)`

In [97]: `veh1.shape`

Out[97]: `(27, 1)`

In [99]: `veh1`

```
Out[99]:
```

	0
destination	No Urgent Place
passanger	Alone
weather	Sunny
temperature	55
time	2PM
coupon	Restaurant(<20)
expiration	1d
gender	Female
age	21
maritalStatus	Unmarried partner
has_children	1
education	Some college - no degree
occupation	Unemployed
income	$37500-49999$
car	NaN
Bar	never
CoffeeHouse	never
CarryAway	NaN
RestaurantLessThan20	4~8
Restaurant20To50	1~3
toCoupon_GEQ5min	1
toCoupon_GEQ15min	0
toCoupon_GEQ25min	0
direction_same	0
direction_opp	1
Y	1
row_count	1

```
In [101... veh
```

```
Out[101...
```

	0
destination	No Urgent Place
passanger	Alone
weather	Sunny
temperature	55
time	2PM
coupon	Restaurant(<20)
expiration	1d
gender	Female
age	21
maritalStatus	Unmarried partner
has_children	1
education	Some college - no degree
occupation	Unemployed
income	$37500-49999$
car	NaN
Bar	never
CoffeeHouse	never
CarryAway	NaN
RestaurantLessThan20	4~8
Restaurant20To50	1~3
toCoupon_GEQ5min	1
toCoupon_GEQ15min	0
toCoupon_GEQ25min	0
direction_same	0
direction_opp	1
Y	1
row_count	1

```
In [105... veh
```

```
Out[105...
```

destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25mi

0 rows × 27 columns

```
In [111... veh2=pd.concat([veh,row1],ignore_index=False)
```

```
In [113... veh2
```

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon
destination	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
passanger	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
weather	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
temperature	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
time	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
coupon	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
expiration	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
gender	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
age	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
maritalStatus	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
has_children	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
education	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
occupation	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
income	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
car	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
Bar	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
CoffeeHouse	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
CarryAway	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
RestaurantLessThan20	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
Restaurant20To50	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
toCoupon_GEQ5min	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
toCoupon_GEQ15min	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
toCoupon_GEQ25min	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
direction_same	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
direction_opp	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
Y	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN
row_count	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN

27 rows × 28 columns

In [115...] `veh`

Out[115...]

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25mi

0 rows × 27 columns

In [119...] `row1[0]`

C:\Users\91807\AppData\Local\Temp\ipykernel_33248\2020803979.py:1: FutureWarning: Series.__getitem__ treating keys as positions is deprecated. In a future version, integer keys will always be treated as labels (consistent with DataFrame behavior). To access a value by position, use `ser.iloc[pos]`
  row1[0]

Out[119...] `'No Urgent Place'`

In [121...] `row1['destination']`

Out[121...] `'No Urgent Place'`

In [123...]
```python
for i in row1:
    print(i)
```

```
No Urgent Place
Alone
Sunny
55
2PM
Restaurant(<20)
1d
Female
21
Unmarried partner
1
Some college - no degree
Unemployed
$37500 - $49999
nan
never
never
nan
4~8
1~3
1
0
0
0
1
1
1
```

In [125...] `veh[0]`

```
---------------------------------------------------------------------
KeyError                               Traceback (most recent call last)
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3805, in Index.get_loc(self, key)
   3804 try:
-> 3805     return self._engine.get_loc(casted_key)
   3806 except KeyError as err:

File index.pyx:167, in pandas._libs.index.IndexEngine.get_loc()

File index.pyx:196, in pandas._libs.index.IndexEngine.get_loc()

File pandas\_libs\\hashtable_class_helper.pxi:7081, in pandas._libs.hashtable.PyObjectHashTable.get_item()

File pandas\_libs\\hashtable_class_helper.pxi:7089, in pandas._libs.hashtable.PyObjectHashTable.get_item()

KeyError: 0

The above exception was the direct cause of the following exception:

KeyError                               Traceback (most recent call last)
Cell In[125], line 1
----> 1 veh[0]

File ~\anaconda3\Lib\site-packages\pandas\core\frame.py:4102, in DataFrame.__getitem__(self, key)
   4100 if self.columns.nlevels > 1:
   4101     return self._getitem_multilevel(key)
-> 4102 indexer = self.columns.get_loc(key)
   4103 if is_integer(indexer):
   4104     indexer = [indexer]

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:3812, in Index.get_loc(self, key)
   3807     if isinstance(casted_key, slice) or (
   3808         isinstance(casted_key, abc.Iterable)
   3809         and any(isinstance(x, slice) for x in casted_key)
   3810     ):
   3811         raise InvalidIndexError(key)
-> 3812     raise KeyError(key) from err
   3813 except TypeError:
   3814     # If we have a listlike key, _check_indexing_error will raise
   3815     #  InvalidIndexError. Otherwise we fall through and re-raise
   3816     #  the TypeError.
   3817     self._check_indexing_error(key)

KeyError: 0
```

In [141]... `veh.columns['destination'].index`

```
---------------------------------------------------------------------
IndexError                             Traceback (most recent call last)
Cell In[141], line 1
----> 1 veh.columns['destination'].index

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\base.py:5416, in Index.__getitem__(self, key)
   5407         if len(key) == 0 and len(key) != len(self):
   5408             warnings.warn(
   5409                 "Using a boolean indexer with length 0 on an Index with "
   5410                 "length greater than 0 is deprecated and will raise in a "
(...)
   5413                 stacklevel=find_stack_level(),
   5414             )
-> 5416 result = getitem(key)
   5417 # Because we ruled out integer above, we always get an arraylike here
   5418 if result.ndim > 1:

IndexError: only integers, slices (`:`), ellipsis (`...`), numpy.newaxis (`None`) and integer or boolean arrays are valid indices
```

In [143]...
```
for i in veh.columns:
    veh[i]=row1[i]
```

In [145]... `veh`

Out[145]...

destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25mi

0 rows × 27 columns

In [147]... `veh['destination']=row1['destination']`

In [151]... `row1['destination']`

Out[151]... `'No Urgent Place'`

In [153]... `type(veh)`

Out[153]... `pandas.core.frame.DataFrame`

In [155]... `veh['destination']='Union'`

In [243]... `veh2=pd.concat([veh,row1],drop_duplicates())`

```
---------------------------------------------------------------------
NameError                              Traceback (most recent call last)
Cell In[243], line 1
----> 1 veh2=pd.concat([veh,row1],drop_duplicates())

NameError: name 'drop_duplicates' is not defined
```

In [159]...
```
df = pd.DataFrame({
    'A': [1, 2, 3],
    'B': [4, 5, 6]
})
```

In [161]... `del veh`

In [169]... `veh=pd.DataFrame(columns=vehicle.columns)`

In [171]... `veh.loc[0]`

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
File ~\anaconda3\Lib\site-packages\pandas\core\indexes\range.py:413, in RangeIndex.get_loc(self, key)
    412 try:
--> 413     return self._range.index(new_key)
    414 except ValueError as err:

ValueError: 0 is not in range

The above exception was the direct cause of the following exception:

KeyError                                  Traceback (most recent call last)
Cell In[171], line 1
----> 1 veh.loc[0]

File ~\anaconda3\Lib\site-packages\pandas\core\indexing.py:1191, in _LocationIndexer.__getitem__(self, key)
   1189 maybe_callable = com.apply_if_callable(key, self.obj)
   1190 maybe_callable = self._check_deprecated_callable_usage(key, maybe_callable)
-> 1191 return self._getitem_axis(maybe_callable, axis=axis)

File ~\anaconda3\Lib\site-packages\pandas\core\indexing.py:1431, in _LocIndexer._getitem_axis(self, key, axis)
   1429 # fall thru to straight lookup
   1430 self._validate_key(key, axis)
-> 1431 return self._get_label(key, axis=axis)

File ~\anaconda3\Lib\site-packages\pandas\core\indexing.py:1381, in _LocIndexer._get_label(self, label, axis)
   1379 def _get_label(self, label, axis: AxisInt):
   1380     # GH#5567 this will fail if the label is not present in the axis.
-> 1381     return self.obj.xs(label, axis=axis)

File ~\anaconda3\Lib\site-packages\pandas\core\generic.py:4301, in NDFrame.xs(self, key, axis, level, drop_level)
   4299         new_index = index[loc]
   4300 else:
-> 4301     loc = index.get_loc(key)
   4303     if isinstance(loc, np.ndarray):
   4304         if loc.dtype == np.bool_:

File ~\anaconda3\Lib\site-packages\pandas\core\indexes\range.py:415, in RangeIndex.get_loc(self, key)
    413         return self._range.index(new_key)
    414     except ValueError as err:
--> 415         raise KeyError(key) from err
    416 if isinstance(key, Hashable):
    417     raise KeyError(key)

KeyError: 0
```

In [245... `veh.loc[0]='Union'`

In [265... `veh`

Out[265...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ2
0	Union	Union	Union	Union	Union	Union	Union	Union	Union	Union	...	Union	Union	Union	Union	Union	

1 rows × 27 columns

In [266... `veh1=pd.concat([vehicle,veh],ignore_index=True)['destination'].drop_duplicates()`

In [253... `veh1`

Out[253...
```
0        No Urgent Place
13                  Home
16                  Work
12684              Union
Name: destination, dtype: object
```

In [201... `veh.at[0,'destination']='Test'`

In [203... `veh`

Out[203...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ2
0	Test	Union	Union	Union	Union	Union	Union	Union	Union	Union	...	Union	Union	Union	Union	Union	

1 rows × 27 columns

In [205... `veh['destination']='Test12'`

In [207... `veh`

Out[207...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ2
0	Test12	Union	Union	Union	Union	Union	Union	Union	Union	Union	...	Union	Union	Union	Union	Union	

1 rows × 27 columns

In [209... `veh1=pd.DataFrame(columns=veh.columns)`

In [211... `veh1`

Out[211...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25mi

0 rows × 27 columns

In [213... `veh1['destination']='Union'`

In [215... `veh1`

Out[215...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25mi

0 rows × 27 columns

In [217... `veh1.at[0,'destination']='Union'`

In [219... `veh1`

Out[219...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25r
0	Union	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	N

1 rows × 27 columns

```
In [233... s = pd.Series([10, 20, 30], index=['A', 'B', 'C'])

          # Get only the values
          values_array = s.values

          print(values_array)
```

```
[10 20 30]
```

```
In [239... values_array=s.to_numpy()
```

```
In [241... values_array
```

```
Out[241... array([10, 20, 30], dtype=int64)
```

```
In [255... veh
```

Out[255...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ2
0	Union	Union	Union	Union	Union	Union	Union	Union	Union	Union	...	Union	Union	Union	Union	Union	

1 rows × 27 columns

```
In [259... unionData=pd.read_csv(r'C:\Venkat\Python\Practice_Material\21st- EDA Practicle\DataSets\table_to_join_202411011215.csv')
```

```
In [261... unionData
```

Out[261...

	time	part_of_day
0	2PM	Afternoon
1	10AM	Morning
2	6PM	Evening
3	7AM	Morning
4	10PM	Night
5	11AM	Morning

```
In [263... pd.merge(vehicle,unionData)
```

Out[263...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25m
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	1d	Female	21	Unmarried partner	...	4~8	1~3	1	0	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	2h	Female	21	Unmarried partner	...	4~8	1~3	1	0	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	2h	Female	21	Unmarried partner	...	4~8	1~3	1	1	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	2h	Female	21	Unmarried partner	...	4~8	1~3	1	1	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	1d	Female	21	Unmarried partner	...	4~8	1~3	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12679	Home	Partner	Rainy	55	6PM	Carry out & Take away	1d	Male	26	Single	...	4~8	1~3	1	0	
12680	Work	Alone	Rainy	55	7AM	Carry out & Take away	1d	Male	26	Single	...	4~8	1~3	1	0	
12681	Work	Alone	Snowy	30	7AM	Coffee House	1d	Male	26	Single	...	4~8	1~3	1	0	
12682	Work	Alone	Snowy	30	7AM	Bar	1d	Male	26	Single	...	4~8	1~3	1	1	
12683	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	2h	Male	26	Single	...	4~8	1~3	1	0	

12684 rows × 28 columns

```
In [269... vehicle
```

Out[269...

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCou
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12679	Home	Partner	Rainy	55	6PM	Carry out & Take away	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12680	Work	Alone	Rainy	55	7AM	Carry out & Take away	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12681	Work	Alone	Snowy	30	7AM	Coffee House	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12682	Work	Alone	Snowy	30	7AM	Bar	1d	Male	26	Single	...	1~3	4~8	1~3	1	1	
12683	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	2h	Male	26	Single	...	1~3	4~8	1~3	1	0	

12684 rows × 27 columns

```
In [271... pd.merge(vehicle,unionData)
```

`Out[271...`

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCoupon_GEQ25m
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	1d	Female	21	Unmarried partner	...	4~8	1~3	1	0	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	2h	Female	21	Unmarried partner	...	4~8	1~3	1	0	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	2h	Female	21	Unmarried partner	...	4~8	1~3	1	1	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	2h	Female	21	Unmarried partner	...	4~8	1~3	1	1	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	1d	Female	21	Unmarried partner	...	4~8	1~3	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12679	Home	Partner	Rainy	55	6PM	Carry out & Take away	1d	Male	26	Single	...	4~8	1~3	1	0	
12680	Work	Alone	Rainy	55	7AM	Carry out & Take away	1d	Male	26	Single	...	4~8	1~3	1	0	
12681	Work	Alone	Snowy	30	7AM	Coffee House	1d	Male	26	Single	...	4~8	1~3	1	0	
12682	Work	Alone	Snowy	30	7AM	Bar	1d	Male	26	Single	...	4~8	1~3	1	1	
12683	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	2h	Male	26	Single	...	4~8	1~3	1	0	

12684 rows × 28 columns

`In [275...`
```python
vehicle.columns
```

`Out[275...`
```
Index(['destination', 'passanger', 'weather', 'temperature', 'time', 'coupon',
       'expiration', 'gender', 'age', 'maritalStatus', 'has_children',
       'education', 'occupation', 'income', 'car', 'Bar', 'CoffeeHouse',
       'CarryAway', 'RestaurantLessThan20', 'Restaurant20To50',
       'toCoupon_GEQ5min', 'toCoupon_GEQ15min', 'toCoupon_GEQ25min',
       'direction_same', 'direction_opp', 'Y', 'row_count'],
      dtype='object')
```

`In [277...`
```python
unionData.columns
```

`Out[277...`
```
Index(['time', 'part_of_day'], dtype='object')
```

`In [293...`
```python
pd.merge(vehicle,unionData,how='left',on='time')[['destination','time','part_of_day']]
```

`Out[293...`

	destination	time	part_of_day
0	No Urgent Place	2PM	Afternoon
1	No Urgent Place	10AM	Morning
2	No Urgent Place	10AM	Morning
3	No Urgent Place	2PM	Afternoon
4	No Urgent Place	2PM	Afternoon
...	...	...	...
12679	Home	6PM	Evening
12680	Work	7AM	Morning
12681	Work	7AM	Morning
12682	Work	7AM	Morning
12683	Work	7AM	Morning

12684 rows × 3 columns

`In [295...`
```python
vehicle['passanger']
```

`Out[295...`
```
0            Alone
1        Friend(s)
2        Friend(s)
3        Friend(s)
4        Friend(s)
           ...
12679      Partner
12680        Alone
12681        Alone
12682        Alone
12683        Alone
Name: passanger, Length: 12684, dtype: object
```

`In [313...`
```python
vehicle[vehicle['passanger']=='Alone'][['destination','passanger']]
```

`Out[313...`

	destination	passanger
0	No Urgent Place	Alone
13	Home	Alone
14	Home	Alone
15	Home	Alone
16	Work	Alone
...	...	...
12676	Home	Alone
12680	Work	Alone
12681	Work	Alone
12682	Work	Alone
12683	Work	Alone

7305 rows × 2 columns

`In [319...`
```python
vehicle[vehicle['weather'].str.startswith('Sun')]
```

	destination	passanger	weather	temperature	time	coupon	expiration	gender	age	maritalStatus	...	CarryAway	RestaurantLessThan20	Restaurant20To50	toCoupon_GEQ5min	toCoupon_GEQ15min	toCou
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	0	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	2h	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	1d	Female	21	Unmarried partner	...	NaN	4~8	1~3	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12673	Home	Alone	Sunny	30	6PM	Carry out & Take away	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12676	Home	Alone	Sunny	80	6PM	Restaurant(20-50)	1d	Male	26	Single	...	1~3	4~8	1~3	1	0	
12677	Home	Partner	Sunny	30	6PM	Restaurant(<20)	1d	Male	26	Single	...	1~3	4~8	1~3	1	1	
12678	Home	Partner	Sunny	30	10PM	Restaurant(<20)	2h	Male	26	Single	...	1~3	4~8	1~3	1	1	
12683	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	2h	Male	26	Single	...	1~3	4~8	1~3	1	0	

10069 rows × 27 columns

```python
vehicle[(vehicle['temperature']>=29) & (vehicle['temperature']<=75)]['temperature'].unique()
```

```
array([55, 30], dtype=int64)
```

```python
vehicle.query('temperature >=29 and temperature<=75')['temperature'].unique()
```

```
array([55, 30], dtype=int64)
```

```python
vehicle.query('occupation==\'Sales & Related\' | occupation==\'Management\'' )['occupation']
```

```
193      Sales & Related
194      Sales & Related
195      Sales & Related
196      Sales & Related
197      Sales & Related
              ...
12679    Sales & Related
12680    Sales & Related
12681    Sales & Related
12682    Sales & Related
12683    Sales & Related
Name: occupation, Length: 1931, dtype: object
```

```python
vehicle[vehicle['occupation'].isin(lis)]['occupation'].unique()
```

```
array(['Sales & Related', 'Management'], dtype=object)
```