

```
In [10]: import geopandas as gpd
```

```
In [13]: city = gpd.read_file('BND_DCD_City_Limits.shp')
```

```
In [15]: city.head(10)
```

```
Out[15]:
```

	NAME	URL	Place	SHAPE_Leng	SHAPE_Area	geometry
0	Hercules	<a href="http://www.ci.hercules.ca.us">http://www.ci.hercules.ca.us</a>	City	139684.714049	5.370487e+08	POLYGON ((6050138.670 2213680.894, 6050138.535...
1	Pinole	<a href="http://www.ci.pinole.ca.us">http://www.ci.pinole.ca.us</a>	City	142085.179287	3.236353e+08	POLYGON ((6061361.891 2185184.330, 6061175.032...
2	San Pablo	<a href="http://ci.san-pablo.ca.us">http://ci.san-pablo.ca.us</a>	City	53545.939997	7.262574e+07	POLYGON ((6032142.047 2180044.617, 6032139.564...
3	Pleasant Hill	<a href="http://www.ci.pleasant-hill.ca.us">http://www.ci.pleasant-hill.ca.us</a>	City	106538.290047	1.972874e+08	POLYGON ((6107797.519 2183746.182, 6107795.016...
4	Clayton	<a href="http://ci.clayton.ca.us">http://ci.clayton.ca.us</a>	City	56209.355613	1.068252e+08	POLYGON ((6145189.947 2168359.571, 6145189.747...
5	El Cerrito	<a href="http://www.el-cerrito.org">http://www.el-cerrito.org</a>	City	52935.042504	1.027580e+08	POLYGON ((6037746.731 2169209.701, 6037769.912...
6	Orinda	<a href="https://www.cityoforinda.org">https://www.cityoforinda.org</a>	City	124549.070027	3.587687e+08	POLYGON ((6073367.430 2161972.311, 6073447.906...
7	Moraga	<a href="http://www.moraga.ca.us">http://www.moraga.ca.us</a>	City	101587.011015	2.641224e+08	POLYGON ((6091339.945 2145105.692, 6091427.182...
8	Oakley	<a href="http://ci.oakley.ca.us">http://ci.oakley.ca.us</a>	City	125674.182645	4.512589e+08	POLYGON ((6202023.545 2196350.838, 6202174.776...
9	Martinez	<a href="http://www.cityofmartinez.org">http://www.cityofmartinez.org</a>	City	196485.697832	3.838058e+08	MULTIPOLYGON (((6097550.872 2195314.691, 60975...

```
In [16]: city.shape
```

Out[16]: (20, 6)

In [17]: `city.head`

```
Out[17]: <bound method NDFrame.head of
URL      Place      SHAPE_Leng \
0         Hercules      http://www.ci.hercules.ca.us      City      1.396847e+05
1          Pinole      http://www.ci.pinole.ca.us      City      1.420852e+05
2        San Pablo      http://ci.san-pablo.ca.us      City      5.354594e+04
3    Pleasant Hill      http://www.ci.pleasant-hill.ca.us      City      1.065383e+05
4          Clayton      http://ci.clayton.ca.us      City      5.620936e+04
5      El Cerrito      http://www.el-cerrito.org      City      5.293504e+04
6          Orinda      https://www.cityoforinda.org      City      1.245491e+05
7          Moraga      http://www.moraga.ca.us      City      1.015870e+05
8          Oakley      http://ci.oakley.ca.us      City      1.256742e+05
9      Martinez      http://www.cityofmartinez.org      City      1.964857e+05
10      Concord      http://cityofconcord.org      City      1.866475e+05
11    Brentwood      https://www.brentwoodca.gov      City      1.430533e+05
12    Danville      http://www.danville.ca.gov      City      1.541088e+05
13    Pittsburg      http://www.ci.pittsburg.ca.us      City      1.872711e+05
14    Richmond      http://www.ci.richmond.ca.us      City      4.410034e+05
15    Antioch      http://ci.antioch.ca.us      City      1.921041e+05
16    Walnut Creek      http://www.ci.walnut-creek.ca.us      City      3.013035e+05
17    San Ramon      http://www.sanramon.ca.gov      City      1.788288e+05
18    Lafayette      http://lovelafayette.org      City      1.430424e+05
19 Unincorporated      http://www.co.contra-costa.ca.us      County      2.603815e+06

      SHAPE_Area      geometry
0      5.370487e+08      POLYGON ((6050138.670 2213680.894, 6050138.535...
1      3.236353e+08      POLYGON ((6061361.891 2185184.330, 6061175.032...
2      7.262574e+07      POLYGON ((6032142.047 2180044.617, 6032139.564...
3      1.972874e+08      POLYGON ((6107797.519 2183746.182, 6107795.016...
4      1.068252e+08      POLYGON ((6145189.947 2168359.571, 6145189.747...
5      1.027580e+08      POLYGON ((6037746.731 2169209.701, 6037769.912...
6      3.587687e+08      POLYGON ((6073367.430 2161972.311, 6073447.906...
7      2.641224e+08      POLYGON ((6091339.945 2145105.692, 6091427.182...
8      4.512589e+08      POLYGON ((6202023.545 2196350.838, 6202174.776...
9      3.838058e+08      MULTIPOLYGON (((6097550.872 2195314.691, 60975...
10     8.512320e+08      POLYGON ((6123982.129 2198022.756, 6124195.656...
11     4.143161e+08      POLYGON ((6214394.397 2174902.667, 6214396.908...
12     5.039213e+08      POLYGON ((6126766.141 2133733.789, 6127085.214...
13     5.504280e+08      POLYGON ((6167978.433 2208684.254, 6170905.866...
14     1.465940e+09      MULTIPOLYGON (((6024112.727 2177751.505, 60240...
15     8.347368e+08      POLYGON ((6183872.036 2196583.055, 6184514.823...
16     5.512180e+08      POLYGON ((6100470.716 2157812.139, 6100459.593...
17     5.221248e+08      MULTIPOLYGON (((6151013.675 2099012.584, 61510...
18     4.234762e+08      POLYGON ((6099902.510 2168174.064, 6099865.247...
19     1.356946e+10      MULTIPOLYGON (((6131892.866 2102985.864, 61318... >
```

In [18]: `city.head(10)`

```
Out[18]:
```

	NAME	URL	Place	SHAPE_Leng	SHAPE_Area	geometry
0	Hercules	http://www.ci.hercules.ca.us	City	139684.714049	5.370487e+08	POLYGON ((6050138.670 2213680.894, 6050138.535...

	NAME	URL	Place	SHAPE_Leng	SHAPE_Area	geometry
1	Pinole	http://www.ci.pinole.ca.us	City	142085.179287	3.236353e+08	POLYGON ((6061361.891 2185184.330, 6061175.032...
2	San Pablo	http://ci.san-pablo.ca.us	City	53545.939997	7.262574e+07	POLYGON ((6032142.047 2180044.617, 6032139.564...
3	Pleasant Hill	http://www.ci.pleasant-hill.ca.us	City	106538.290047	1.972874e+08	POLYGON ((6107797.519 2183746.182, 6107795.016...
4	Clayton	http://ci.clayton.ca.us	City	56209.355613	1.068252e+08	POLYGON ((6145189.947 2168359.571, 6145189.747...
5	El Cerrito	http://www.el-cerrito.org	City	52935.042504	1.027580e+08	POLYGON ((6037746.731 2169209.701, 6037769.912...
6	Orinda	https://www.cityoforinda.org	City	124549.070027	3.587687e+08	POLYGON ((6073367.430 2161972.311, 6073447.906...
7	Moraga	http://www.moraga.ca.us	City	101587.011015	2.641224e+08	POLYGON ((6091339.945 2145105.692, 6091427.182...
8	Oakley	http://ci.oakley.ca.us	City	125674.182645	4.512589e+08	POLYGON ((6202023.545 2196350.838, 6202174.776...
9	Martinez	http://www.cityofmartinez.org	City	196485.697832	3.838058e+08	MULTIPOLYGON (((6097550.872 2195314.691, 60975...

In [19]:

city.info

Out[19]:

```

<bound method DataFrame.info of
URL    Place    SHAPE_Leng \
0      Hercules http://www.ci.hercules.ca.us    City  1.396847e+05
1      Pinole   http://www.ci.pinole.ca.us    City  1.420852e+05
2      San Pablo http://ci.san-pablo.ca.us    City  5.354594e+04
3      Pleasant Hill http://www.ci.pleasant-hill.ca.us    City  1.065383e+05
4      Clayton http://ci.clayton.ca.us    City  5.620936e+04
5      El Cerrito http://www.el-cerrito.org    City  5.293504e+04
6      Orinda   https://www.cityoforinda.org    City  1.245491e+05
7      Moraga   http://www.moraga.ca.us    City  1.015870e+05
8      Oakley   http://ci.oakley.ca.us    City  1.256742e+05
9      Martinez http://www.cityofmartinez.org    City  1.964857e+05
10     Concord  http://cityofconcord.org    City  1.866475e+05
11     Brentwood https://www.brentwoodca.gov    City  1.430533e+05
12     Danville http://www.danville.ca.gov    City  1.541088e+05

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13	Pittsburg	http://www.ci.pittsburg.ca.us	City	1.872711e+05
14	Richmond	http://www.ci.richmond.ca.us	City	4.410034e+05
15	Antioch	http://ci.antioch.ca.us	City	1.921041e+05
16	Walnut Creek	http://www.ci.walnut-creek.ca.us	City	3.013035e+05
17	San Ramon	http://www.sanramon.ca.gov	City	1.788288e+05
18	Lafayette	http://lovelafayette.org	City	1.430424e+05
19	Unincorporated	http://www.co.contra-costa.ca.us	County	2.603815e+06

	SHAPE_Area		geometry
0	5.370487e+08	POLYGON	((6050138.670 2213680.894, 6050138.535...
1	3.236353e+08	POLYGON	((6061361.891 2185184.330, 6061175.032...
2	7.262574e+07	POLYGON	((6032142.047 2180044.617, 6032139.564...
3	1.972874e+08	POLYGON	((6107797.519 2183746.182, 6107795.016...
4	1.068252e+08	POLYGON	((6145189.947 2168359.571, 6145189.747...
5	1.027580e+08	POLYGON	((6037746.731 2169209.701, 6037769.912...
6	3.587687e+08	POLYGON	((6073367.430 2161972.311, 6073447.906...
7	2.641224e+08	POLYGON	((6091339.945 2145105.692, 6091427.182...
8	4.512589e+08	POLYGON	((6202023.545 2196350.838, 6202174.776...
9	3.838058e+08	MULTIPOLYGON	((6097550.872 2195314.691, 60975...
10	8.512320e+08	POLYGON	((6123982.129 2198022.756, 6124195.656...
11	4.143161e+08	POLYGON	((6214394.397 2174902.667, 6214396.908...
12	5.039213e+08	POLYGON	((6126766.141 2133733.789, 6127085.214...
13	5.504280e+08	POLYGON	((6167978.433 2208684.254, 6170905.866...
14	1.465940e+09	MULTIPOLYGON	((6024112.727 2177751.505, 60240...
15	8.347368e+08	POLYGON	((6183872.036 2196583.055, 6184514.823...
16	5.512180e+08	POLYGON	((6100470.716 2157812.139, 6100459.593...
17	5.221248e+08	MULTIPOLYGON	((6151013.675 2099012.584, 61510...
18	4.234762e+08	POLYGON	((6099902.510 2168174.064, 6099865.247...
19	1.356946e+10	MULTIPOLYGON	((6131892.866 2102985.864, 61318... >

In [20]:

city.info(10)

```
<class 'geopandas.geodataframe.GeoDataFrame'>
RangeIndex: 20 entries, 0 to 19
Data columns (total 6 columns):
#   Column      Non-Null Count  Dtype
---  -
0   NAME        20 non-null     object
1   URL         20 non-null     object
2   Place       20 non-null     object
3   SHAPE_Leng  20 non-null     float64
4   SHAPE_Area  20 non-null     float64
5   geometry    20 non-null     geometry
dtypes: float64(2), geometry(1), object(3)
memory usage: 1.1+ KB
```

In [21]:

city.tail(10)

Out[21]:

	NAME	URL	Place	SHAPE_Leng	SHAPE_Area	geometry
10	Concord	http://cityofconcord.org	City	1.866475e+05	8.512320e+08	POLYGON ((6123982.129 2198022.756, 6124195.656...
11	Brentwood	https://www.brentwoodca.gov	City	1.430533e+05	4.143161e+08	POLYGON ((6214394.397 2174902.667, 6214396.908...

	NAME	URL	Place	SHAPE_Leng	SHAPE_Area	geom
12	Danville	http://www.danville.ca.gov	City	1.541088e+05	5.039213e+08	POLYGON ((6126766 2133733.7 6127085.2'
13	Pittsburg	http://www.ci.pittsburg.ca.us	City	1.872711e+05	5.504280e+08	POLYGON ((6167978.4 2208684.2 6170905.86
14	Richmond	http://www.ci.richmond.ca.us	City	4.410034e+05	1.465940e+09	MULTIPOLYGON (((6024112. 2177751.5 6024
15	Antioch	http://ci.antioch.ca.us	City	1.921041e+05	8.347368e+08	POLYGON ((6183872.1 2196583.0 6184514.82
16	Walnut Creek	http://www.ci.walnut-creek.ca.us	City	3.013035e+05	5.512180e+08	POLYGON ((6100470. 2157812.7 6100459.59
17	San Ramon	http://www.sanramon.ca.gov	City	1.788288e+05	5.221248e+08	MULTIPOLYGON (((6151013. 2099012.5 615'
18	Lafayette	http://lovelafayette.org	City	1.430424e+05	4.234762e+08	POLYGON ((6099902. 2168174.0 6099865.24
19	Unincorporated	http://www.co.contra-costa.ca.us	County	2.603815e+06	1.356946e+10	MULTIPOLYGON (((6131892.1 2102985.8 613'

In [ ]: