In [1]:
```
import pandas as pd
```

In [3]:
```
url ='https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0101EN-SkillsNetwork/labs/Module%205/data/addresses.csv'
df = pd.read_csv(url)
```

In [4]:
```
df
```

Out[4]:

	John	Doe	120 jefferson st.	Riverside	NJ	08075
0	Jack	McGinnis	220 hobo Av.	Phila	PA	9119
1	John "Da Man"	Repici	120 Jefferson St.	Riverside	NJ	8075
2	Stephen	Tyler	7452 Terrace "At the Plaza" road	SomeTown	SD	91234
3	NaN	Blankman	NaN	SomeTown	SD	298
4	Joan "the bone", Anne	Jet	9th, at Terrace plc	Desert City	CO	123

In [5]:
```
df.columns =['First Name', 'Last Name', 'Location ', 'City','State','Area Code']
```

In [6]:
```
df["First Name"]
```

Out[6]:
```
0                    Jack
1            John "Da Man"
2                  Stephen
3                      NaN
4    Joan "the bone", Anne
Name: First Name, dtype: object
```

In [7]:
```
df = df[['First Name', 'Last Name', 'Location ', 'City','State','Area Code']]
```

In [7]:
```
df
```

Out[7]:

	First Name	Last Name	Location	City	State	Area Code
0	Jack	McGinnis	220 hobo Av.	Phila	PA	9119
1	John "Da Man"	Repici	120 Jefferson St.	Riverside	NJ	8075
2	Stephen	Tyler	7452 Terrace "At the Plaza" road	SomeTown	SD	91234
3	NaN	Blankman	NaN	SomeTown	SD	298
4	Joan "the bone", Anne	Jet	9th, at Terrace plc	Desert City	CO	123

In [8]:
```
df.loc[0]
```

Out[8]:
```
First Name            Jack
Last Name          McGinnis
Location      220 hobo Av.
City                 Phila
State                   PA
Area Code             9119
Name: 0, dtype: object
```

In [9]:
```
df.loc[[0,1,2], "First Name" ]
```

Out[9]:
```
0             Jack
1    John "Da Man"
2          Stephen
Name: First Name, dtype: object
```

In [10]:
```
df.iloc[[0,1,2], 0]
```

Out[10]:
```
0             Jack
1    John "Da Man"
2          Stephen
Name: First Name, dtype: object
```

In [11]:
```
import pandas as pd
import numpy as np
```

In [12]:
```
df=pd.DataFrame(np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]]), columns=[
'a', 'b', 'c'])
df
```

Out[12]:

	a	b	c
0	1	2	3
1	4	5	6
2	7	8	9

In [13]:
```
df = df.transform( x + 10)
df
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call l
ast)
<ipython-input-13-049c44d3e805> in <module>
----> 1 df = df.transform( x + 10)
      2 df

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

In [14]:
```
result = df.transform(func = ['sqrt'])
```

In [15]:
```
result
```

Out[15]:

	a	b	c
	sqrt	**sqrt**	**sqrt**
0	1.000000	1.414214	1.732051
1	2.000000	2.236068	2.449490
2	2.645751	2.828427	3.000000

In [16]:
```
import json
```

In [17]:
```
import json
person = {
    'first_name' : 'Mark',
    'last_name' : 'abc',
    'age' : 27,
    'address': {
        "streetAddress": "21 2nd Street",
        "city": "New York",
        "state": "NY",
        "postalCode": "10021-3100"
    }
}
```

In [18]:
```
with open('person.json', 'w') as f:
    json.dump(person, f)
```

In [19]:
```
json_object = json.dumps(person, indent = 4)

# Writing to sample.json
with open("sample.json", "w") as outfile:
    outfile.write(json_object)
```

In [20]:
```
print(json_object)
```

```
{
    "first_name": "Mark",
    "last_name": "abc",
    "age": 27,
    "address": {
        "streetAddress": "21 2nd Street",
        "city": "New York",
        "state": "NY",
        "postalCode": "10021-3100"
    }
}
```

In [21]:
```
import json


with open('sample.json', 'r') as openfile:

    # Reading from json file
    json_object = json.load(openfile)

print(json_object)
print(type(json_object))
```

```
{'first_name': 'Mark', 'last_name': 'abc', 'age': 27, 'address': {'stre
etAddress': '21 2nd Street', 'city': 'New York', 'state': 'NY', 'postal
Code': '10021-3100'}}
<class 'dict'>
```

In [ ]:
```

```