```
In [1]: inputFile='small_data.xlsx'
        import pandas as pd

        # Read all sheets at once
        data=pd.read_excel(inputFile,sheet_name=None)
        print(data.keys())
        regions=data['Regions']
        items=data['Items']
        regions
```

```
odict_keys(['Fulfilment Centers', 'Regions', 'Distances', 'Items', 'Demand'])
```

Out[1]:

	region_ID	region_name	population_millions	lat	long
0	0	Kings County, NY	16.133722	41.547035	-74.786319
1	1	Santa Clara County, CA	15.146029	37.572332	-121.399244
2	2	Miami-Dade County, FL	14.543862	27.626951	-81.558710

```
In [2]: # Read a single sheet
        regions=pd.read_excel(inputFile,sheet_name='Regions',index_col=0)
        regions
```

Out[2]:

	region_name	population_millions	lat	long
region_ID				
0	Kings County, NY	16.133722	41.547035	-74.786319
1	Santa Clara County, CA	15.146029	37.572332	-121.399244
2	Miami-Dade County, FL	14.543862	27.626951	-81.558710

```
In [3]: # Obtaining a column (equivalent ways)
        regions['region_name']
        regions.region_name
        regions.loc[:,'region_name']
        regions.iloc[:,0]
```

```
Out[3]: region_ID
        0            Kings County, NY
        1      Santa Clara County, CA
        2       Miami-Dade County, FL
        Name: region_name, dtype: object
```

```
In [4]: # Obtaining a row
        regions.loc[0,:]       # Equivalent: regions.loc[0]
```

```
Out[4]: region_name            Kings County, NY
        population_millions             16.1337
        lat                             41.547
        long                            -74.7863
        Name: 0, dtype: object
```

```
In [5]: # Obtaining the row indices
        regions.index           # For column indices: regions.columns
```

```
Out[5]: Int64Index([0, 1, 2], dtype='int64', name='region_ID')
```

In [6]:
```
items
```

Out[6]:

	item_ID	shipping_weight	storage_size
0	0	3	1
1	1	1	2

In [7]:
```
# Column sums
items.sum()
```

Out[7]:
```
item_ID           1
shipping_weight   4
storage_size      3
dtype: int64
```

In [8]:
```
# Row sums
items.T.sum()
```

Out[8]:
```
0    4
1    4
dtype: int64
```

In [9]:
```
# Building a table via a list of lists
dic={0:10,1:5,2:6.6}
table=[]
for k in dic:
    table.append([k,regions.loc[k,'region_name'],dic[k]])
table
```

Out[9]:
```
[[0, 'Kings County, NY', 10],
 [1, 'Santa Clara County, CA', 5],
 [2, 'Miami-Dade County, FL', 6.6]]
```

In [10]:
```
# Transforming table to data frame
df=pd.DataFrame(table,columns=['Region','Name','Shadow Price'])
df
```

Out[10]:

	Region	Name	Shadow Price
0	0	Kings County, NY	10.0
1	1	Santa Clara County, CA	5.0
2	2	Miami-Dade County, FL	6.6

In [11]:
```
# Output to single sheet excel file (cannot do multiple sheets)
df.to_excel('ShadowPrice.xlsx',index=False)
```

In [12]:
```
# Output several dataframes to the same excel file
writer=pd.ExcelWriter('outputs.xlsx')
regions.to_excel(writer,sheet_name='Exhibit A')
df.to_excel(writer,sheet_name='Shadow Price',index=False)
writer.save()
```