Welcome / **Pandas Basics**

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Pandas Basics

Pandas DataFrames

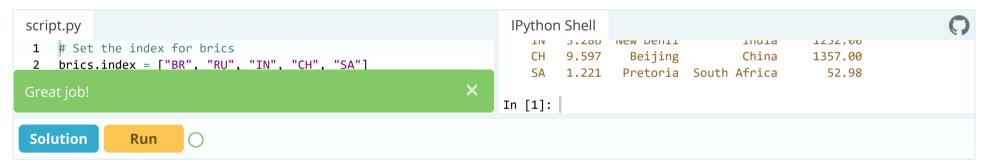
Pandas is a high-level data manipulation tool developed by Wes McKinney. It is built on the Numpy package and its key data structure is called the DataFrame. DataFrames allow you to store and manipulate tabular data in rows of observations and columns of variables.

There are several ways to create a DataFrame. One way way is to use a dictionary. For example:

```
script.py
                                                           IPython Shell
                                                                             country population
   dict = {"country": ["Brazil", "Russia", "India", "China",
                                                              area capital
                                                                                Brazil 200.40
    "South Africa"],
                                                          0 8.516 Brasilia
      "capital": ["Brasilia", "Moscow", "New Dehli",
                                                          1 17.100 Moscow
                                                                                Russia
                                                                                            143.50
    "Beijing", "Pretoria"],
                                                                                 India 1252.00
                                                          2 3.286 New Dehli
                                                          3 9.597 Beijing China 1357.00
          "area": [8.516, 17.10, 3.286, 9.597, 1.221],
3
          "population": [200.4, 143.5, 1252, 1357, 52.98] }
                                                          4 1.221 Pretoria South Africa
                                                                                            52.98
4
5
   import pandas as pd
                                                          In [1]:
6
   brics = pd.DataFrame(dict)
7
   print(brics)
  Run
```

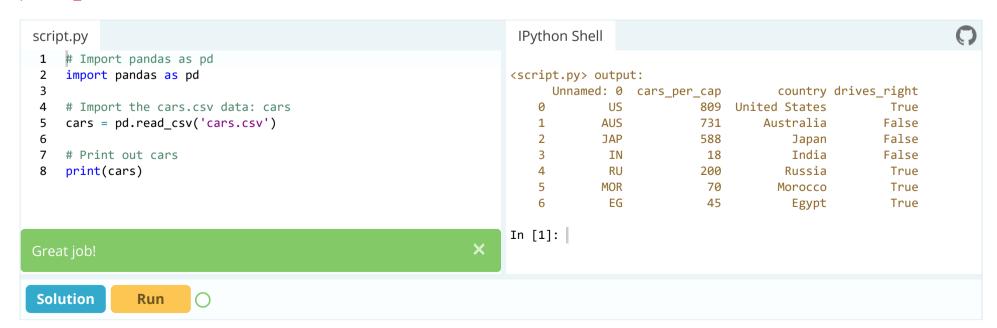
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As you can see with the new brics DataFrame, Pandas has assigned a key for each country as the numerical values 0 through 4. If you would like to have different index values, say, the two letter country code, you can do that easily as well.



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Another way to create a DataFrame is by importing a csv file using Pandas. Now, the csv cars.csv is stored and can be imported using pd.read_csv:

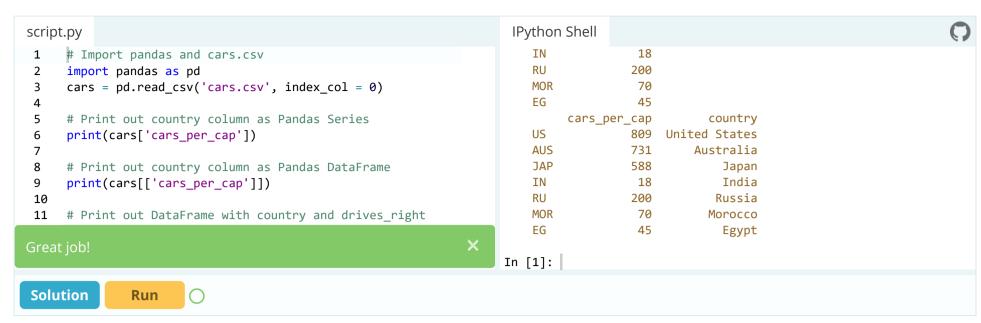


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Indexing DataFrames

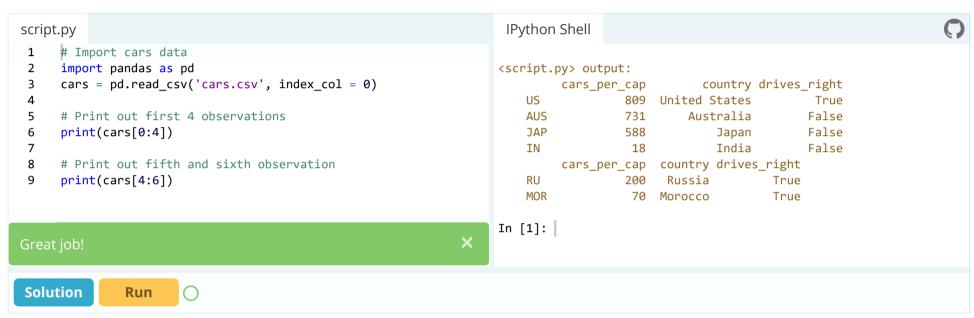
There are several ways to index a Pandas DataFrame. One of the easiest ways to do this is by using square bracket notation.

In the example below, you can use square brackets to select one column of the cars DataFrame. You can either use a single bracket or a double bracket. The single bracket will output a Pandas Series, while a double bracket will output a Pandas DataFrame.



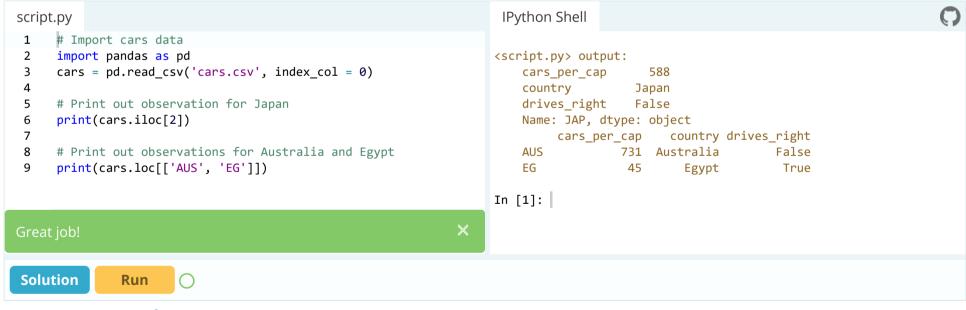
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Square brackets can also be used to access observations (rows) from a DataFrame. For example:



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You can also use loc and iloc to perform just about any data selection operation. loc is label-based, which means that you have to specify rows and columns based on their row and column labels. iloc is integer index based, so you have to specify rows and columns by their integer index like you did in the previous exercise.



```
Script.py

IPython Shell

In [1]:
```

Run

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