- -> notebooks from this lecture: https://github.com/ine-rmotr-curriculum/freecodecamp-intro-to-pandas
- labels which make up the index will be used to index specific data

- ***before the index, we are saying "I want to get the population of Canada?" in this example***
  - -> g7_pop['Canada']
  - -> it's an ordered sequence of numbers
  - -> it also has an index which can take any elements we pass
  - -> we can get the element by the sequential order
  - -> the first / second element
  - -> iloc <- to locate by sequential position
  - -> sequential multi indices

- ***-> we can also do ranges / slices***
  - -> the upper limit of a slice isn't returned
  - -> up to element 2 doesn't include element 2, for example
  - -> index selection in Pandas

- ***-> boolean arrays***
  - -> entire arrays just filled with booleans
  - -> boolean series
  - -> we will be able to perform operations on top of series
  - -> vectorised operations can be performed with boolean operations
  - -> you can ask it what countries have more than 7 million people in them
  - -> the boolean series / array works the same way as with numpy
  - -> you can see all the countries which have more than a certain number of people in them
    - -> selecting data based on conditions
  - -> you can always track down the way the index is being built
  - -> the operation was performed first
  - -> give me all of the elements which are above the mean and within a certain standard deviation count
    - -> you can ask it to return data which is in a certain part of a distribution

- ***-> operations and methods***
  - -> operations <- in statistical operations in numpy
  - -> mean, average standard deviations
  - -> these are relevant, but you can use traditional numpy functions with a pandas series
  - -> numpy arrays back pandas series
  - -> we are returning the population sizes of countries which are above or below certain values
  - -> | <- or

- ***-> modifying series***
  - -> assigning values
  - -> you can do this by index or by sequential position
  - -> you can also modify elements based on a boolean selection
  - -> boolean indexing for cleaning data

- ***-> question***

What will the following code print out?

import pandas as pd

```
certificates_earned = pd.Series(
    [8, 2, 5, 6],
    index=['Tom', 'Kris', 'Ahmad', 'Beau']
)

print(certificates_earned[certificates_earned > 5])
```

```
Tom      True
Kris     False
Ahmad    False
Beau     True
dtype: int64
```

```
Tom      8
Ahmad    5
Beau     6
dtype: int64
```

```
Tom      8 <- This one, it returns the elements in the list which are > 5
Beau     6
dtype: int64
```