edX **Microsoft:** DAT210x Programming with Python for Data Science **Help**

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More Wrangling

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Pandas will automatically attempt to figure out the best data type to use for each series in your dataset. Most of the time it does this flawlessly, but other times it fails horribly! Particularly the `.read_html()` method is notorious for defaulting all series data types to Python objects. You should check, and double-check the actual type of each column in your dataset to avoid unwanted surprises:

```
>>> df.dtypes

Date       object
Name       object
Gender     object
Height     object
Weight     object
Age        object
Job        object
```

If your data types don't look the way you expected them, explicitly convert them to the desired type using the `.to_datetime()`, `.to_numeric()`, and `.to_timedelta()` methods:

```
>>> df.Date = pd.to_datetime(df.Date, errors='coerce')
>>> df.Height = pd.to_numeric(df.Height, errors='coerce')
>>> df.Weight = pd.to_numeric(df.Weight, errors='coerce')
>>> df.Age = pd.to_numeric(df.Age, errors='coerce')
>>> df.dtypes

Date       datetime64
Name       object
Gender     object
Height     float64
Weight     float64
Age        int64
Job        object
```

Take note how to_numeric properly converts to decimal or integer depending on the data it finds. The `errors='coerce'` parameter instructs Pandas to enter a NaN at any field where the conversion fails.
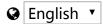
After fixing up your data types, let's say you want to see all the unique values present in a particular series. Call the `.unique()` method on it to view a list, or alternatively, if you'd like to know how many times each of those unique values are present, you can call `.value_counts()`. Either method works with series, but neither will function if called on a dataframe:

```
>>> df.Age.unique()

array([7, 33, 27, 40, 22], dtype=int64)
```

```
>>> df.Age.value_counts()

7      1
22     5
27     1
33     2
40     2
dtype: int64
```

There are many other possible data munging and wrangling tasks, many of which can be applied easily and generically to any dataset. We've referenced a site detailing almost 40 such operations for you to further explore in the Dive Deeper section. However, some wrangling tasks require you look closer at your data. For instance, if you survey users with a series of 1-10 ranked questions, and a user enters all 5's or all 1's, chances are they were not being completely honest. Another example would be a user entering in January 1, 1970 as their birthdate since you required they enter in *something* but they did not want to disclose the information. In order to further improve the accuracy of your datasets, always be on the lookout for these sorts of issues.