

Python

Control Structures:

• Conditionals: Executes code conditionally

• Loops: Executes code repeatedly.

• if: Conditional code execution.

• Must include:

- 1) The keyword: if
- 2) A condition that evaluates to a boolean value followed by a colon(:)
- 3) The body of the statement

ex) # Conditional "If this then that"

```
IN: i_like_coffee = True
    if i_like_coffee:
        print('I like coffee!')
        print('Coffee is the best!')
```

ex) Conditional "if this, then that, otherwise"

```
it_is_raining = False
if it_is_raining:
    print('Better bring an umbrella!')
```

```
else:
    print('Looks like a nice, sunny day')
```

Loops

- for - Runs block of code a set number of times
- while - Runs block of code until a condition is met

For Loop: Used w/ iterables (objects that can be mentioned one by one)

ex) # For loop example

```
for number in range(1,4):
    print(number)
```

1
2
3

ex) # while loop

```
i = 5
while i <= 10:
    print(i)
    i += 1
```

OUTPUT: 5
6

Pandas - Python library for representing dataframes

Series: 1-Dimensional representations of data

Dataframes: Basic concepts and manipulation of pandas
2-D data structures.

Advanced

Dataframes - More advanced data frame manipulation

Pandas Series: `import pandas as pd`

Creating Series

```
series = pd.Series([100, 43, 26, 17])  
type(series)
```

Series Properties

index - way to reference items in the series

type - Data type of the elements in the series.

- ↓
 - `int` - integer (whole #)
 - `bool` : true/false values
 - `float` - decimals
 - `object` : strings
 - `category` - Fixed set of string values

name - Optional, human friendly name for series

• `astype` (Convert between data types)

```
W: string-series = pd.Series([3, 5, 4.5, 6]).astype('str')  
string-series
```

`any` - Check if any value is true (`series < 0`). `any`

`all` - Check if All values in the series are true (`series > 0`). `all()`

`head()` / `tail()` - Look at first and last several values in a series.

`value_counts` - gives count of unique values in a series

`isin` - Check if each value is in a set of values

`apply()` - Apply a function to a series