week2

January 12, 2021

1 Week 2: Introduction to Numpy

Numpy is one of the most important data science libraries in python.

[10]:
```
import numpy as np
```

In numpy we will work with arrays, which are similar to lists. Numpy arrays are optimized for data tasks and for effeciency. First, we initialize an array. Arrays can be initialized by passing numpy a list:

[11]:
```
# We can initialize an array from a list
a = np.array(['First Element','Second Element','Third Element'])
print(a)
print(type(a))

lst = ['First Element','Second Element','Third Element']
aTest = np.array(lst)
print(a == aTest)
```

```
['First Element' 'Second Element' 'Third Element']
<class 'numpy.ndarray'>
[ True  True  True]
```

Numpy arrays can work similarly to lists. We can loop over them:

[12]:
```
for i in a:
    print(i)
```

```
First Element
Second Element
Third Element
```

And they are indexed similarly

[13]:
```
print(a[0])
print(a[1])
print(a[2])
print(a[3])
```

```
First Element
Second Element
Third Element
```

```
      ␣
↪---------------------------------------------------------------------------

       IndexError                                Traceback (most recent call␣
↪last)

       <ipython-input-13-a9bb74723f5f> in <module>
         2 print(a[1])
         3 print(a[2])
   ----> 4 print(a[3])


       IndexError: index 3 is out of bounds for axis 0 with size 3
```

[ ]: