**Numpy notes –** NumPy is great at storing and manipulating numerical data in arrays.

Let's take a look at an example. Twice Charred in a fictional (mostly) movie review site where four good friends and movie reviewers, Lorie, Marty, Tori, and Kurtz watch movies and give them ratings on a scale of 0 to 100.

In [1]:

*# Before we do anything, we need to import NumPy*

**import** **numpy** **as** **np**

When the gang rates a movie, we can store their ratings in a NumPy array movie\_ratings:

In [2]:

movie\_ratings = np.array([63.0, 54.0, 70.0, 50.0])

But they see more than one movie, so we have to create a 2-dimensional array where each row is their ratings for a specific movie.

In [3]:

movie\_ratings = np.array([[63.0, 54.0, 70.0, 50.0],

[94.0, 85.0, 89.0, 95.0],

[64.0, 90.0, 73.0, 85.0]])

Some fans prefer to have the movies rated on a five star scale, so we can use NumPy to easily divide each element by 20.

In [4]:

movie\_ratings\_stars = movie\_ratings / 20

Now let's say the ratings are always in the same order (Lorie, Marty, Tori, Kurtz) if we wanted to create an array that only had Tori's ratings, we could select that from our movie\_ratings array.

In [5]:

tori\_ratings = movie\_ratings[:, 2]

tori\_ratings

Out[5]:

array([ 70., 89., 73.])

Now, say we find that we have very similar taste to Marty, so we only want to see movies that he gives a good rating to, we can use logic to select those movies.

Let's select all of Marty's ratings that are over 80:

In [6]:

marty\_ratings = movie\_ratings[:, 1]

marty\_ratings[marty\_ratings > 80]

Out[6]:

array([ 85., 90.])