**Arrays Part III - Tuples**

A **tuple** is a small, fixed-value array. A tuple is used when it takes two or more items to properly describe something. The name derives from the words double, triple, quadruple, quintuple and so on.

For example, a tuple could be a pair of names:

name = "Laura", "Secord"

Coordinates are a good example of a tuple:

position = 12, 20

A tuple could be an entry in an address book:

person = "Justin", "Bieber", "1900 Dauphin St", "613-344-0783"

# please don't call that number

Elements from a tuple can be extracted just like in an array:

person = "Justin", "Bieber", "1900 Dauphin St", "613-344-0783"

print (person[3]) # print his phone number

...but tuples are ***immutable***, meaning they cannot be changed:

person = "Justin", "Bieber", "1900 Dauphin St", "613-344-0783"

entry[1] = "Timberlake" # error!

Tuples are usually part of a ***list***. For example, a list of points:

points = [(3,4), (4,5), (5,7)] # a list of tuples

print (points[1]) # will print (4,5)

Note that when you define a tuple, you don’t need brackets. Lists and sets require square brackets. But when you place a tuple inside a list, you need to separate each tuple using round brackets as shown above.

You can add more tuples to your list:

points = [(3,4), (4,5), (5,7)] # a list of tuples

t = 8,9 # new tuple

points.append(t) # add it

print (points) # print the list

Key Terms: **tuple, immutable**