

Lists, strings and files review

1. Why are lists useful?
2. What is the difference between functions and methods?
3. What is the relationship between lists and strings?
4. How do I access a specific element in a list or string?
5. What's the first thing I need to do if I want to read from a file?

Given the following definitions:

```
name = "Kirk"  
animals = ["Fish", "Dog", "Bird", "Turtle"]  
grades = [5, 4, 5, 3, 4, 5]
```

What is output by the following code?

Code	Output / what is it doing?
<pre>i = 0 for grade in grades: i = i + grade print i / len(grades)</pre>	
<pre>print sum(grades) / len(grades)</pre>	
<pre>animals.remove("dog") print animals</pre>	
<pre>animals.sort() print animals</pre>	
<pre>if name in animals: print name, "is an animal!"</pre>	
<pre>for animal in animals: animals.append(animal) print animals</pre>	
<pre>for l in name:</pre>	

<pre>print l.upper()</pre>	
<pre>new = "" for c in name[1:] new = new + 3 * c print new</pre>	
<pre>ind = 0 while ind < len(animals): print animals[ind] ind = ind + 2</pre>	
<pre>n = 0 L = [] while n < 5: L = L + [2*n] n = n + 1</pre>	

Write the following:

1. Write code to create a list of your four favorite foods. Remove the last one. Print the resulting list.

2. Write a function called `duplicate` that takes a string as a parameter and prints out the same string twice.

3. Write a function called `mult_3` that takes a list of numbers as a parameter and builds a list in which all elements have been multiplied by 3. Print that list out.

4. Write a function that takes one parameter: a non-empty word. Your function should print out that word with the first letter replaced by an underscore, like this:

```
>>> fun("blueberry")
_lueberry
>>> fun("glue")
_lue
```

5. Write a function `print_histogram` that takes a list of grade frequencies and prints out a histogram as follows:

```
>>> print_histogram([5, 3, 5, 10, 3, 2])
*****
***
*****
*****
***
**
```