

Questionnaires

Questionnaire Week 3

1. What is the main difference between a Tuple and a List python types?

- Only the name changes
- Lists are immutable whereas Tuples allow any kind of operation.
- Tuples are immutable whereas Lists permit to do any kind of operation.
- The Tuple only allows the definition of a list with length 4.

2. What is the result of using a list comprehension, for example, in the following piece of code:

```
lst1 = [1,2,3,4,5]
lst2 = [ (x * 2) for x in lst1 ]
```

- The result (lst2) is a float that corresponds with the multiplication of all elements by 2
- The result (lst2) is a list in which each element is 2
- The result (lst2) is a list in which each element is $lst1[i]*2$
- The result (lst2) is a tuple in which each element is $lst1[i]*2$

3. Which is the main purpose of the comprehension list usage?

- Make the python comprehension more complicated
- Easily transform lists
- Manipulate/Initialise lists
- Reduce the number of lines in the python code.

4. Find the errors in the following python code:

```
lst = [1,2,3,4]
tup = tuple(1)
tup.append(2)
lst.append(2)
print tup
print lst
print "The value of the tuple in the 5th position is: " + str(tup[4])
print "The value of the tuple in the 5th position is:" + str(lst[4])
```

The result is:

```
l= [1,2,3,4]
tup = tuple(1)
tup.append(2) # This line is wrong because the tuples are immutable (cannot change)
lst.append(2)
```

```
print tup # The result should be [1,2,3,4]
print lst# The result should be [1,2,3,4,2]
print "The value of the tuple in the 5th position is: "+ str(tup[4]) # Error the 4th
position do not exist!!!!
print "The value of the tuple in the 5th position is:" + str(lst[4]) # should print 4
```

5. Complete and correct the following recursive code to which computes the power of a number:

```
def power(x, y):
    if (y == 1):
        return 1
    else:
        return power(x, y + 1)
```

```
# Solution:
def power(x, y):
    if (y == 1): # y == 0
        return x # return 1
    else:
        return x * power(x, y - 1)
```