**Yashwant Desai – Assignment 25**

1) . What is the difference between enclosing a list comprehension in square brackets and parentheses?

Answer: Lists are created using square brackets [ ] and tuples are created using parentheses ( ). Lists are mutable meaning we can change their elements after creation while tuples are immutable and their elements cannot be modified once defined.

2) What is the relationship between generators and iterators?

Answer: a generator is a specific type of iterator that is defined using a function with yield statements while a general iterator follows the iterator protocol with \_\_iter\_\_() and \_\_next\_\_() methods explicitly implemented in a class. an iterator is an object used to iterate over iterable objects such as lists, tuples, dictionaries and sets. An object is called iterable if we can get an iterator from it or loop over it.

3) What are the signs that a function is a generator function?

Answer: The most significant sign of a generator function is the presence of the yield keyword.

4) What is the purpose of a yield statement?

Answer: yield keyword is used to create a generator function. A type of function that is memory efficient and can be used like an iterator object. the yield keyword will turn any expression that is given with it into a generator object and return it to the caller. Therefore we must iterate over the generator object if we wish to obtain the values stored there.

5) What is the relationship between map calls and list comprehensions? Make a comparison and contrast between the two.

Answer: The map calls and list comprehensions are both ways to perform element-wise operations on iterables . They share some similarities but have distinct syntax and use cases. List comprehension has a simpler configuration than the map function. Below is a comparison between the two.

List comprehension can be used together with if condition as replacement of filter method.

Map function has no such functionality. However, we can feed the map function output to the filter function.

List comprehension returns a list, whereas the map function returns an object of Iterable.

List comprehension execution is faster than that of map function when the formula expression is huge and complex.

Map function is faster than list comprehension when the formula is already defined as a function earlier. So, that map function is used without lambda expression.

**Regards,**

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