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

 List comprehension is enclosed in square brackets [] while the Generator expression is enclosed in plain parentheses ().

1. What is the relationship between generators and iterators?

Iterators are used mostly to iterate or convert other objects to an iterator using iter() function.

Every iterator is not a generator

Iterator uses iter() and next() functions

Class is used to implement an iterator

Generator

Function is used to implement a generator.

Generators are mostly used in loops to generate an iterator by returning all the values in the loop without affecting the iteration of the loop

Every generator is an iterator

generator uses yield keyword

Every generator is an iterator

1. What are the signs that a function is a generator function?

If a function contains at least one yield statement

1. What is the purpose of a yield statement?

The yield statement returns a generator object to the one who calls the function which contains yield, instead of simply returning a value

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

List comprehension is more concise and easier to read as compared to map.

List comprehension allows filtering. In map, we have no such facility. For example, to print all even numbers in range of 100, we can write [n for n in range(100) if n%2 == 0]. There is no alternate for it in map

List comprehension are used when a list of results is required as map only returns a map object and does not return any list.

List comprehension is faster than map when we need to evaluate expressions that are too long or complicated to express

Map is faster in case of calling an already defined function (as no lambda is required).