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

Ans:- The difference between enclosing a list comprehension in square brackets and parentheses is that the former creates a list while the latter creates a generator. A list comprehension returns a list of results immediately, while a generator comprehension returns a generator object that can be iterated over to lazily produce the results on demand.

2) **What is the relationship between generators and iterators?**

Ans:- Generators and iterators are closely related concepts. An iterator is an object that implements the iterator protocol (which requires the __iter__() and __next__() methods). A generator is a specific type of iterator that is defined using a function rather than a class. When a function containing the yield keyword is called, it returns a generator object. This object can be iterated over to execute the function and produce its outputs one at a time, pausing after each yield statement.

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

Ans:- A function is a generator function if it contains the yield keyword. When called, instead of running its code and returning a result, it returns a generator object. This object can be iterated over to lazily run the function's code and produce results on demand.

4) **What is the purpose of a yield statement?**

Ans:- The purpose of a yield statement in Python is to define a generator, replacing the return of a function to provide a result to its caller without destroying local variables. Unlike a return statement, yield produces a value and suspends the function's execution. The function can be resumed later on from where it left off, allowing it to produce a series of results over time, instead of computing them all at once and sending them back in a list, for example.

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

Ans:- Both map calls and list comprehensions are ways to apply an operation to each item in an iterable and collect the results. A map call applies a function to each item and returns an iterator that produces the results on demand. A list comprehension does essentially the same thing but returns a list of results immediately