Q1. Can you create a programme or function that employs both positive and negative indexing? Is there any repercussion if you do so?

**Ans:** Python arrays & list items can be accessed with positive or negative numbers (also known as index). For instance, our array/list is of size n, then for positive index 0 is the first index, 1 second, last index will be n-1. ... - A negative index accesses elements from the end of the list counting backwards.

Q2. What is the most effective way of starting with 1,000 elements in a Python list? Assume that all elements should be set to the same value.

**Ans:** We should use [collections.deque](https://docs.python.org/2/library/collections.html" \l "deque-objects) by Raymond Hettinger and its [popleft()](https://docs.python.org/2/library/collections.html" \l "collections.deque.popleft) method.

Q3. How do you slice a list to get any other part while missing the rest? (For example, suppose you want to make a new list with the elements first, third, fifth, seventh, and so on.)

**Ans:** 1. Basic usage of slicing. Start position start and end position stop. step.

1. Select from the end with a negative value. Negative values for start and stop. Negative values for step.
2. Slice object by slice ()
3. Assigning values by slicing.
4. Slicing for strings and tuples.

Q4. Explain the distinctions between indexing and slicing.

**Ans:** “Indexing” means referring to an element of an iterable by its position within the iterable. “Slicing” means getting a subset of elements from an iterable based on their indices. Indexing: Indexing is used to obtain individual elements. Slicing: Slicing is used to obtain a sequence of elements. Indexing and Slicing can be done in Python Sequence types like list, string, tuple, range objects.

Q5. What happens if one of the slicing expression's indexes is out of range?

**Ans:** If you index an element that is out of bounds, Python will throw an index out of bounds error. However, with slicing it simply returns an empty sequence.

Q6. If you pass a list to a function, and if you want the function to be able to change the values of the list—so that the list is different after the function returns—what action should you avoid?

**Ans:** Python functions can return multiple values. These values can be stored in variables directly. A function is not restricted to return a variable, it can return zero, one, two or more values.

Q7. What is the concept of an unbalanced matrix?

**Ans:** An unbalanced dataset is one in which the target variable has more observations in one specific class than the others. For example, let us suppose that we have a dataset used to detect a fraudulent transaction.

Q8. Why is it necessary to use either list comprehension or a loop to create arbitrarily large matrices?

**Ans:** The initial expression in a list comprehension can be any arbitrary expression, including another list comprehension. In addition, dict comprehensions can be used to create dictionaries from arbitrary key and value expressions.