**Assignment\_22**

Q1. What are the benefits of the built-in array package, if any?

**Ans: 1) Get the type code.**

**2) Get size of Array item**

**3) Count the Number of occurrences**

Q2. What are some of the array package's limitations?

**Ans: 1) While declaring an array, passing size of an array is compulsory, and the size must be a constant. Thus, there is either shortage or wastage of memory.**

**2) Shifting is required for insertion or deletion of elements in an array.**

**3) Data that is entered with the subscript, exceeds the array size and will be placed outside the array. Generally, on the top of the data or the program itself.**

Q3. Describe the main differences between the array and numpy packages.

**Ans: A numpy array is a grid of values, all of the same type , and is indexed by a tuple of nonnegative integers.**

**A list is the python equivalent of an array, but is resizeable and can contain elements of different types.**

Q4. Explain the distinctions between the empty, ones, and zeros functions.

**Ans: \* empty() : The function is used to create an array without initializing the entries.**

* **Ones() : it will initialize ones to array**
* **Zeros () : it will initialize zero to array**

Q5. In the from function function, which is used to construct new arrays, what is the role of the callable argument?

**Ans: The callable argument is used to invoke inside the outer function to complete some kind of routine or action.**

Q6. What happens when a numpy array is combined with a single-value operand (a scalar, such as an int or a floating-point value) through addition, as in the expression A + n?

**Ans: It will add to the array.**

**Ex= A=2 n=[1,1] == [2,2]**

**1,1 2,2**

Q7. Can array-to-scalar operations use combined operation-assign operators (such as += or \*=)? What is the outcome?

**Ans: Yes, we can combine the operators. The outcome could be the addition or multiplication of given array.**

Q8. Does a numpy array contain fixed-length strings? What happens if you allocate a longer string to one of these arrays?

Q9. What happens when you combine two numpy arrays using an operation like addition (+) or multiplication (\*)? What are the conditions for combining two numpy arrays?

**Ans: The operation could perform on the arrays. Condition could be : length of array need to be same.**

**Ex = 2\*2 must be equal to 2\*2**

Q10. What is the best way to use a Boolean array to mask another array?

**Ans: A Boolean array can be created manually by using dtype=bool when creating the array.Values other than 0, None, Faster or empty strings are considered True. Numpy automatically creates a Boolean array when comparisons are made between arrays and scalars.**

Q11. What are three different ways to get the standard deviation of a wide collection of data using both standard Python and its packages? Sort the three of them by how quickly they execute.

**Ans:**

* **Stdev() :**
* **ddof=1**
* **ddof=0**

12. What is the dimensionality of a Boolean mask-generated array?

**Ans: It works with higher dimensions.**