

My Complete Solutions -

Assignment 2

1. Yes
2. No, it can have any datatype with any values can be stored.
3. List is mutable and tuple is immutable
4. Using len() function to find the number of elements in the list
5. if len(l)==0 or not
6. first – l[0] and last – l[-1]
7. min(l) and max(l)
8. using index l[i]
9. del[:i] as i is the ending index
10. del[start,end+1] where start, end are the two indices
11. l[::2] returns the list in even indices
12. for i in range(len(l)): print(l[i][0])
13. l=[1,2,3,4,5]; l[2]=4
14. l1+l2
15. l=[]; for i,j in zip(l1,l2): l.append(i+j)
16. del() function is used to delete a particular element whereas, clear() function is used to delete all the elements
17. remove() can be done using the value whereas, pop can be done based on indexing
18. append() is used to add a element to the list whereas, extend() concates the two lists
19. indexing means it used to spot an element whereas, slicing is used for a subsequence.
20. Sort() is used to modify the list and sorted() is used to sort the list and creates it new list.
21. Reverse() reverses the elements in the list whereas, reversed() doesn't actually reverse anything
22. Copy is used to duplicate the original list whereas, deep copy is used to duplicate the list into the original list
23. L=[1,2,3,3,2,1]; l=list(set(L))
24. Using ind=l.index(value)
25. Using count() function of a particular value
26. L.insert(position, value)
27. L.find(value)
28. L=[i for j in l for l in j]
29. L= [1,2,3,4] Set – set(l) Tuple – tuple(l) Dict – dict({1:l})
30. L=[1,2,3]; l= map(L.upper(),L); print(l)
31. Based on the condition we can filter the values. For ex::> to find the list which is greater than 20 in the l=[10,20,30,50,10,40,2,4,5]

32. L=[1,2,3,4]; using sort function sort(l)

Question 1 - Is a list mutable?

Answer ::> Yes, List is Mutable We can change the value of list after assigning a value.

```
lst = [1,2,3,4,5]
lst[1] = 'Two'
print(lst)
```

Question 2 - Does a list need to be homogeneous?

Answer ::> No, The list is don't need to be homogeneous, List can contain heterogeneous like integer, float, string, tuple, dictionary.

```
lst = [1,2.0, 'Three', (4), {'Five':5}]
print(lst)
```

Question 3 - What is the difference between a list and a tuple.

Answer ::> List is Mutable, while Tuple is Immutable, tuples are faster then list.

List Example -

```
lst = [1,2,3,4,5]
lst[1] = 'Two'
print(lst)
```

Tuple Example -

```
tpl = (1, 'Two', 3.0, [4])
tpl[1] = 2
```

--> it throws a TypeError: 'tuple' object does not support item assignment

Question 4 - How to find the number of elements in the list?

Answer ::> Using len() function we can find the number of elements in list.

```
lst = [1,2,3,4,5]
len(lst)
```

Question 5 - How to check whether the list is empty or not?

Answer ::> if len(lst)==0: using this function we can check list is empty or not.

```
lst = [1,2,3,4,5]
len(lst)==0
It return False
```

```
lst = []
len(lst)==0
It return True
```

Question 6 - How to find the first and last element of the list?

Answer ::> Using Index method we can find the first and last element of a list

```
lst = [1,2,3,4,5]
To find First element : lst[0].
To find Last element : lst[-1].
```

Question 7 - How to find the largest and lowest value in the list?

Answer ::> Using min() and Max() inbuilt function we can find the minimum and maximum value of a element in a list.

```
lst = [1,2,3,4,5]
print(min(lst))
print(max(lst))
```

Question 8 - How to access elements of the list?

Answer ::> Using Index value we can access the elements in list.

```
lst = [1,2,3,4,5]
print(lst[3])
print(lst[1:4])
```

Question 9 - Remove elements in a list before a specific index.

Answer ::> Using some inbuilt functions like pop, remove and del we can remove the elements from the list.

```
lst = [1,2.0,'Three',(4),{'Five':5}]
lst.pop(3) # Using Index Value
lst.remove('Three') # Using Name Of The Value
del lst[1:3] # Using Index/ Index Range
```

Question 10 - Remove elements in a list between 2 indices

Answer ::>

```
a = [1,2,3,4,5,6,7,8,9]
del a[::2]
print(a)
```

Question 11 - Return every 2nd element in a list between 2 indices

Answer ::> Use Slicing Method we can return every 2nd element in a list.

```
a = [1,2,3,4,5,6,7,8,9]
a[::2]
```

Question 12 - Get the first element from each nested list in a list

Answer ::> def ext(lst): return [item[0] for item in lst]

```
lst1 = [[1, 2], [3, 4, 5], [6, 7, 8, 9]]
print(ext(lst1))
```

Question 13 - How to modify elements of the list?

Answer ::> Using index value and assignment operator we can modify the elements in list.

```
a = [1,2,3,4,5,6,7,8,9]
a[1]= 'hi'
```

Question 14 - How to concatenate two lists?

Answer ::> using + operator we can concatenate two list.

```
a = [1,2,3,4,5]
b = [6,7,8,9]
print(a+b)
```

Question 15 - How to add two lists element-wise in python?

Answer ::>

```
list1 = [1, 2, 3]
list2 = [4, 5, 6]
sum = []
```

```
for (a,b) in zip(list1,list2):
    sum.append(a+b)
print(sum)
```

Question 16 - Difference between del and clear?

Answer ::> To remove items by index or slice we can use the del method in python.

=> del list[index] or del list

```
lst = [1,2.0,'Three',(4),{'Five':5}]
del lst[1:3]
```

=> clear() method in python is used to empty the entire list. => list.clear()

```
lst = [1,2.0,'Three',(4),{'Five':5}]
lst.clear()
```

Question 17 - Difference between remove and pop?

Answer ::> remove() method removes the elements from list by parameter.

=> list.remove(parameter)

```
lst = [1,2.0,'Three',(4),{'Five':5}]
lst.remove('Three')
```

=> pop() method removes the elements from list by index value. list.pop(index)

```
lst = [1,2.0,'Three',(4),{'Five':5}]
lst.pop(3)
```

Question 18 - Difference between append and extend?

Answer ::>

=>append() method adds an element to a list.

```
lst = [1,2,3,4,5]
lst1 = [1,2.0,'Three',(4),{'Five':5}]
lst.append(lst1)
lst
[1, 2, 3, 4, 5, [1, 2.0, 'Three', 4, {'Five': 5}]]
```

=> extend() method concatenates the first list with another list .

```
lst = [1,2,3,4,5]
lst1 = [1,2.0, 'Three', (4), {'Five':5}]
lst.extend(lst1)
lst
[1, 2, 3, 4, 5, 1, 2.0, 'Three', 4, {'Five': 5}]
```

