Q1. Create a list in python using the followings: 2,3,4,5,6,7 with variable 'a' Add 'mango to the above list Also add banana, grapes & orange in the list insert apple in the 5th position of a variable 'a' Remove last item from the list

In [1]:
```
#making the list, adding mango in it
a = [2,3,4,5,6,7]
a.append("mango")
print(a)
```

```
[2, 3, 4, 5, 6, 7, 'mango']
```

In [2]:
```
# inserting banana, orange and grapes in the variable
a.append("banana")
a.append("orange")
a.append("grapes")
a
```

Out[2]:
```
[2, 3, 4, 5, 6, 7, 'mango', 'banana', 'orange', 'grapes']
```

In [3]:
```
# inserting apple at the 5 position of the variable
a.insert(4, "apple")
a
```

Out[3]:
```
[2, 3, 4, 5, 'apple', 6, 7, 'mango', 'banana', 'orange', 'grapes']
```

In [4]:
```
# removing last item from the list
a.pop()
```

Out[4]:
```
'grapes'
```

In [5]:
```
a
```

Out[5]:
```
[2, 3, 4, 5, 'apple', 6, 7, 'mango', 'banana', 'orange']
```

Q2. L = [1,2,3,4,5,6,7]

Using the above list slice from 1:4

In [6]:
```
L = [1,2,3,4,5,6,7]
```

In [8]:
```
L[1:4]
```

Out[8]:
```
[2, 3, 4]
```

Q3. Reverse the order of given string L = [4,5,6,8,3] Without using reverse() function.

In [29]:
```
L = ["4", "5", "6", "8", "3"]
```

In [30]:
```
reverse = []
count = len(L)

while count<=0:
    reverse.append(L[count-1])
    count = count - 1
print(reverse)
```

```
[]
```

Q4. Use list comprehension to square the given list L=[2,4,7,3,6,8]

In [31]:
```
L = [2,4,7,3,6,8]
```

In [32]:
```
[i**2 for i in L]
```

Out[32]:
```
[4, 16, 49, 9, 36, 64]
```

Q5. Create a function that takes in a tuple of integers and returns the sum of the integers. Test the function with a tuple of your choice.

In [34]:
```
def sumXZ(tuple_int):
    try:
        int_list = []
        F_sum = 0
        for i in tuple_int:
            int_list.append(int(i))
        for i in int_list:
            F_sum = F_sum + i
        return F_sum
    except Exception as e:
        print(e)
```

In [36]:
```
sumXZ((1,2,3,4,5))
```

Out[36]:
```
15
```

Q6. Create two sets of your favourite fruits, and use the union() method to combine them into a single set. Print the resulting set to the console.

In [39]:
```
fruits1 = {"apple", "banana", "pear"}
fruits2 = {"orange", "grape", "kiwi"}
```

In [40]:
```
combined_set = fruits1.union(fruits2)
```

In [41]:
```
combined_set
```

Out[41]:
```
{'apple', 'banana', 'grape', 'kiwi', 'orange', 'pear'}
```

Q7. Create a set of random words, and use the add() method to add a new word to the set. Print the resulting set to the console.

In [42]:
```
words = {"hello", "world", "python"}
```

In [43]:
```
words.add("programming")
```

In [45]:
```
words
```

Out[45]:
```
{'hello', 'programming', 'python', 'world'}
```

Q8. Create a set of your favourite animals, and use the remove() method to remove one animal from the set. Print the resulting set to the console.

In [46]:
```
animals = {"dog", "cat", "hamster", "parrot"}
```

In [47]:
```
animals.remove("cat")
```

In [48]:
```
animals
```

Out[48]:
```
{'dog', 'hamster', 'parrot'}
```

Q9. favorite_books = {"1984", "To Kill a Mockingbird", "Pride and Prejudice"} favorite_movies = ["The Shawshank Redemption", "The Godfather", "The Dark Knight"] Use the zip() function to combine the book set and movie list into a list of tuples representing book/movie pairs. Print the resulting list.

In [50]:
```
favorite_books = {"1984", "To Kill a Mockingbird", "Pride and Prejudice"}
favorite_movies = ["The Shawshank Redemption", "The Godfather", "The Dark Knight"
```

In [51]:
```
book_movie_pair = list(zip(favorite_books, favorite_movies))
```

In [52]:
```
book_movie_pair
```

Out[52]:
```
[('Pride and Prejudice', 'The Shawshank Redemption'),
 ('To Kill a Mockingbird', 'The Godfather'),
 ('1984', 'The Dark Knight')]
```

Q10. Write a Python program to find the difference between consecutive numbers in a list.

In [57]:
```
def cons_num(x):
    diffs = []
    for i in range(1, len(x)):
        diff = x[i] - x[i-1]
        diffs.append(diff)
    return diffs
```

In [59]:
```
x = [3,8,5,6,7,4,2]
cons_num(x)
```

Out[59]:
```
[5, -3, 1, 1, -3, -2]
```