In [ ]:
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# Name: Siddhant Puranik
# Roll No.: A-327
# Class: BTech CE - A
```

In [3]:
```
#1.     Read and display list (using loop) with sum all the items in a list.

l = int(input("Enter the length of the list: "))
listt = []
sum = 0

print("Now enter the integer elements of the list: ")
for i in range(l):
    element = int(input(f"Enter the element {i+1}: "))
    temp = element
    sum += element
    listt.append(element)

print("List is: ", listt, " and the sum of all elements in the list is: ", sum)
```

```
Now enter the integer elements of the list:
List is:  [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]  and the sum of all elements in the lis
t is:  55
```

In [9]:
```
#2.     Implement linear search using list (without using list functions).

l = int(input("Enter the length of the list:"))
listt = []

print("Now enter the elements of the list: ")
for i in range(l):
    element = (input(f"Enter the element {i+1}: "))
    listt.append(element)

choice = input("Enter the element to be searched in the list:")

found = False

for i in range(l):
    if listt[i] == choice:
        print(f"(The element {choice} was found at index location {i+1}.")
        found = True

if not found:
    print(f"The element {choice} was not found in the list.")
```

```
Now enter the elements of the list:
(The element hElLo wOrLd! was found at index location 4.
```

In [20]:
```
# 3. Demonstrate following operations on number list using list functions
#    a. insert 13 at position 4
#    b. Sort the list in ascending order
#    c. delete the last element
#    d. remove 13
#    e. Reverse the list
#    f. Append one number to list
#    g. extend the list with [20,30,40]
#    h. print the number of elements in the list using while

lisst = []
```

```python
for i in range(3):
    element = int(input(f"Enter the {i+1} integer element of the list: "))
    lisst.append(element)

print(f"List is: {lisst}")

print("\n Adding 13 in the 4th place")
lisst.insert(4, 13)
print(f"List has become: {lisst}")

print("\n Sorting the list:")
lisst.sort()
print(f"List is: {lisst}")

print("\n Deleting the last element of the list")
lisst.pop()
print(f"List is: {lisst}")

print("\n Removing 13 from the list:")
value_13 = lisst.index(13)
lisst.pop(value_13)
print(f"List is: {lisst}")

print("\n Reversing the list:")
lisst.reverse()
print(f"List is: {lisst}")

print("\n Appending a number to the list:")
numm = int(input("Enter a number to append to the list"))
lisst.append(numm)
print(f"List is: {lisst}")

print("\n Extending the list with [20,30,40] :")
lisst.extend([20,30,40])
print(f"List is: {lisst}")

summ = 0
i = 0
while i < len(lisst):
    summ += 1
    i+= 1

print(f"\n There are {summ} elements in the list")
```

```
List is: [10, 12, 14]

 Adding 13 in the 4th place
List has become: [10, 12, 14, 13]

 Sorting the list:
List is: [10, 12, 13, 14]

 Deleting the last element of the list
List is: [10, 12, 13]

 Removing 13 from the list:
List is: [10, 12]

 Reversing the list:
List is: [12, 10]

 Appending a number to the list:
List is: [12, 10, 11]

 Extending the list with [20,30,40] :
List is: [12, 10, 11, 20, 30, 40]

 There are 6 elements in the list
```

In [32]:

```python
#4.     Create a tuple and find the minimum and maximum number from it.

n = int(input("enter the length of the tuple:"))
lisst = []

for i in range(n):
    element = int(input("Enter the elements (integer) of the tuple:"))
    lisst.append(element)

tup = tuple(lisst) #Created a list and converted it to a tuple.

biggest = tup[0]
smallest = tup[0]

for elements in tup:
    if elements > biggest:
        biggest = elements
    elif elements < smallest:
        smallest = elements

print(f"Tuple is: {tup} the biggest element is {biggest} and the smallest elemen
```

```
Tuple is: (3, 4, 9, 7, 6, 2) the biggest element is 9 and the smallest element is
2
```

In [1]:

```python
#5.     Create a set, add member(s) in a set and perform following operations:
# intersection of sets,  union of sets, set difference, symmetric difference, fi
# maximum, minimum value in a set and clear a set.

n = int(input("Enter the number of elements in the set:"))

set1 = set()

for i in range(n):
    element = int(input(f"Enter the {i+1} element of the set:"))
```

```
    set1.add(element)

print(f"The set is {set1}")

nn = int(input("\nEnter the number of elements of another set:"))

set2 = set()

for i in range(nn):
    element = int(input(f"Enter the {i+1} element of the set:"))
    set2.add(element)

print(f"The other set is {set2}")

print(f"\nThe intersection of Set 1 and Set 2 is: {set1.intersection(set2)}")
print(f"The union of Set 1 and Set 2 is: {set1.union(set2)}")
print(f"The set difference between Set 1 and Set 2 is: {set1.difference(set2)}")
print(f"The symmetric difference between Ser 1 and Set 2 is: {set1.symmetric_dif

length = 0
for i in set1:
    length += 1

print(f"The length of Set 1 is {length}")

length = 0

for i in set2:
    length += 1

print(f"The length of Set 2 is {length}")

maximum = max(set1)
minimum = min(set1)

print(f"The maximum and minimum values in Set 1 are {maximum} and {minimum} resp

maximum = max(set2)
minimum = min(set2)

print(f"The maximum and minimum values in Set 2 are {maximum} and {minimum} resp

set1.clear()
set2.clear()

print(f"Clearing the values of set1 and set2, set 1 = {set1} and set2 = {set2}")
```

```
The set is {1, 2, 3, 4, 5, 6}
The other set is {1, 2, 3, 4}

The intersection of Set 1 and Set 2 is: {1, 2, 3, 4}
The union of Set 1 and Set 2 is: {1, 2, 3, 4, 5, 6}
The set difference between Set 1 and Set 2 is: {5, 6}
The symmetric difference between Ser 1 and Set 2 is: {5, 6}
The length of Set 1 is 6
The length of Set 2 is 4
The maximum and minimum values in Set 1 are 6 and 1 respectively
The maximum and minimum values in Set 2 are 4 and 1 respectively
Clearing the values of set1 and set2, set 1 = set() and set2 = set()
```

In [2]:
```
#6.     Create dictionary with day number as key and day as value & display it.

dictionary = {'1':'Monday', '2': 'Tuesday', '3': 'Wednesday', '4':'Thursday', '5

print(dictionary)
```

```
{'1': 'Monday', '2': 'Tuesday', '3': 'Wednesday', '4': 'Thursday', '5': 'Friday',
'6': 'Saturday', '7': 'Sunday'}
```

In [8]:
```
#7.     Write a Python program to find the sum of all items in the dictionary.

n = int(input("Enter the number of values in the dictionary:"))

dictionary = {}

for i in range(n):
    key = input(f"Enter the key number {i+1}:")
    value = int(input(f"Enter the integer value of the key {key}:"))
    dictionary[key] = value

summ = 0
for value in dictionary.values():
    summ += value

print(f"The dictionary is: {dictionary}")
print(f"\nSum of all values in the dictionary is {summ}")
```

```
The dictionary is: {'key 1': 1, 'key 2': 2, 'key 3': 3, 'key 4': 4, 'key 5': 5, '
key 6': 6, 'key 7': 7, 'key 8': 8, 'key 9': 9, 'key 10': 10}

Sum of all values in the dictionary is 55
```

In [15]:
```
#8.     Create a dictionary to keep student's marks, use student sapid as the ke
#     a.        Display all the keys
#     b.        Display all the values
#     c.        Take the sapid as the input and modify the grade given by user
#     d.        Take the sapid from the user to remove that user from the dictio
#     e.        Give 5 marks as the bonus to all the students and display the ne
#     f.        Find the length of the dictionary using len function
#     g.        Create a new copy of dictionary using copy method

n = int(input("Enter the number of values to keep in the dictionary:"))

marks = {}

for i in range(n):
    key = input("Enter the SAP id of the student:")
    value = int(input(f"Enter the marks for {key}:"))
    marks[key] = value

print(f"\nEntered SAP ids for the dictionary are:", end = " ")

for key in marks:
    print(key, end=", ")

print(f"\nEntered marks for the SAP Ids are:", end= " ")

for value in marks.values():
    print(value, end = ", ")
```

```
sapid = input("enter a sap id to modify in the dictionary:")
val = int(input(f"Enter the new marks for the {sapid}:"))
marks[sapid] = val

print(f"The dictionary is: {marks}")

sapid = input("\nEnter a SAP id to remove from the dictionary:")

marks.pop(sapid)

print(f"The dictionary is: {marks}")

for key in marks.keys():
    marks[key] += 5

print(f"\nGiving 5 extra marks to each student, the dictionary becomes: \n {mark

print(f"The length of the dictionary is: {len(marks)}")

marks2 = marks.copy()

print("\nCopying the dictionary into another dictionary:")
print(f"Original dictionary : {marks}")
print(f"New dictionary: {marks2}")
```

```
Entered SAP ids for the dictionary are: 70022400315, 70022400300, 70022400200, 70
022400312, 70022400712,
Entered marks for the SAP Ids are: 92, 97, 90, 89, 75,
The dictionary is: {'70022400315': 95, '70022400300': 97, '70022400200': 90, '700
22400312': 89, '70022400712': 75}
The dictionary is: {'70022400315': 95, '70022400200': 90, '70022400312': 89, '700
22400712': 75}

Giving 5 extra marks to each student, the dictionary becomes:
 {'70022400315': 100, '70022400200': 95, '70022400312': 94, '70022400712': 80}
The length of the dictionary is: 4

Copying the dictionary into another dictionary:
Original dictionary : {'70022400315': 100, '70022400200': 95, '70022400312': 94,
'70022400712': 80}
New dictionary: {'70022400315': 100, '70022400200': 95, '70022400312': 94, '70022
400712': 80}
```

In [18]:

```
#9.     Write a program to sort the dictionary in order of the keys.

n = int(input("Enter the number of values in the dictionary:"))

dictionary = {}

for i in range(n):
    key = input(f"Enter the key number {i+1}:")
    value = int(input(f"Enter the value of the key {key}:"))
    dictionary[key] = value

print(f"The unsorted dictionary: {dictionary}")

print(f"Sorting the dictionary, it becomes: {sorted(dictionary)}")
```

```
The unsorted dictionary: {'3': 3, '2': 2, '5': 5, '7': 7, '1': 1}
Sorting the dictionary, it becomes: ['1', '2', '3', '5', '7']
```