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**Subject:** Artifical Intelligence

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## Activity 1:

Use loops to accept 5 values from user and store them in a list. Display all the values (objects) of the list.

In [18]:
```
mylist = []
for i in range(5):
    val = input("Enter your value:")
    mylist.append(val)
print("The given value in list is: ")
print(mylist)
```

```
Enter your value:1
Enter your value:2
Enter your value:3
Enter your value:4
Enter your value:5
The given value in list is:
['1', '2', '3', '4', '5']
```

## Activity 2:

Repeat the above code by accepting 5 integer values from user. Store these values in a list and display the sum of given values.

In [6]:
```
mylist = []
sum = 0
for i in range(5):
    mylist.append(int(input("Enter your value: ")))
    sum = sum + mylist[i]
print(sum)
```

```
Enter your value: 2
Enter your value: 2
Enter your value: 2
Enter your value: 2
Enter your value: 2
10
```

## Experiment:

Accept 5 int values from user. Store in list, get value to find duplicate elem and print index if found that element from list.

In [9]:
```
mylist = []
result = 0
for i in range(5):
    mylist.append(int(input("Enter your value: ")))

val = int(input("Enter you value to find: "))
for i in range(0, len(mylist)):
    if mylist[i] == val:
        print("\nValue is found at index: " + str(i))
        result = i
        break
    else:
        result = -1

if result == -1:
    print("Value not found")
```

```
Enter your value: 1
Enter your value: 2
Enter your value: 3
Enter your value: 4
Enter your value: 5
Enter you value to find: 5

Value is found at index: 4
```

## Activity 3:

Accept 5 integer values from user. Store these values in a list and display the list in ascending order.

In [11]:
```
mylist = []
for i in range(5):
    mylist.append(int(input("Enter your value: ")))
mylist.sort()
print(mylist)
```

```
Enter your value: 1
Enter your value: 2
Enter your value: 3
Enter your value: 4
Enter your value: 5
[1, 2, 3, 4, 5]
```

## Activity 4:

Accept two lists from user and display their join.

In [1]:
```
list1 = []
list2 = []
for i in range(3):
    list1.append(input("Enter value for 1 list: "))

for i in range(3):
    list2.append(input("Enter value for 2 list: "))
print("Combination of both list: ", list1+list2)
```

```
Enter value for 1 list: 1
Enter value for 1 list: 2
Enter value for 1 list: 3
Enter value for 2 list: 4
Enter value for 2 list: 5
Enter value for 2 list: 6
Combination of both list:  ['1', '2', '3', '4', '5', '6']
```

## Activity 5:

Write a Python code to accept a list from user and find a required element in it.

In [12]:
```
mylist = []
for i in range(5):
    mylist.append(int(input("Enter your value: ")))

val = int(input("Enter you value to find: "))
if val in mylist:
    print("\nElement has been found!")
else:
    print("\nElement not found")
```

```
Enter your value: 1
Enter your value: 2
Enter your value: 3
Enter your value: 4
Enter your value: 5
Enter you value to find: 5

Element has been found!
```

## Activity 6:

Write a function called say_hello that takes in a person's name as a parameter. The function should print a greeting message with the person's name. Then call the function three times with three different names.

In [17]:
```
def name_generator(name):
    print("Welcome! " + name + ", We're glad to see you\n")

for i in range(3):
    name_generator(input("Enter your name: "))
```

```
Enter your name: Hammad Rafique
Welcome! Hammad Rafique, We're glad to see you

Enter your name: M Nouman
Welcome! M Nouman, We're glad to see you

Enter your name: Umar Waseem
Welcome! Umar Waseem, We're glad to see you
```

## Activity 7:

A palindrome is a string which is same read forward or backwards. For example: "dad" is the same in forward or reverse direction. Another example is "aibohphobia" which literally means, an irritable fear of palindromes.

Write a function in python that receives a string and returns True if that string is a palindrome and False otherwise. Remember that difference between upper and lower case characters are ignored during this determination.

In [12]:
```
def palindron_verify_method1(value):
    reverse = value[::-1]
    if reverse == value:
        print("Given string is palindron!")
    else:
        print("Given string is not palindron!")

value = input("Enter your string: ")
palindron_verify_method1(value.upper())
```

```
Enter your string: dad
Given string is palindron! DAD
```

## Activity 8:

Imagine two matrices given in the form of 2D lists as under;

a = [[1, 0, 0], [0, 1, 0], [0, 0, 1] ]

b = [[1, 2, 3], [4, 5, 6], [7, 8, 9] ]

Write a python code that finds another matrix/2D list that is a product of and b, i.e.,

In [14]:
```
# a = [[1, 0, 0], [0, 1, 0], [0, 0, 1] ]
# b = [[1, 2, 3], [4, 5, 6], [7, 8, 9] ]
# c = [0]

# for i in range(len(a)):
#     temp = 0
#     for j in range(len(a)):
#         temp = temp + a[i][j] * b[i][j]
#     c.append(temp)
# print(c)
```

```
[0, 1, 5, 9]
```

## Experiment:

In [10]:
```
mylist = []
for i in range(5):
    mylist.append(int(input("Enter your value: ")))
print("\nMax value iin list: " + str(max(mylist)))
```

```
Enter your value: 1
Enter your value: 2
Enter your value: 3
Enter your value: 4
Enter your value: 5

Max value iin list: 5
```