Experiment One

To write a Python program to find the maximum of a list of numbers.

In [1]:
```python
# A function to find the maximum
def find_maximum(numbers):
    if not numbers:
        return None  # Return None if the list is empty

    maximum = numbers[0]  # Assume the first number is the maximum

    for num in numbers:
        if num > maximum:
            maximum = num

    return maximum
```

In [2]:
```python
# Using the function to find the maximum
numbers = [5, 8, 3, 10, 1]
max_num = find_maximum(numbers)
print("Maximum number:", max_num)
```

```
Maximum number: 10
```

Experiment Two

To write a python program to search an element in an array using Linear search technique.

In [3]:
```python
#The linear search funtion
def linear_search(array, target):
    for i in range(len(array)):
        if array[i] == target:
            return i  # Return the index if the element is found
    return -1  # Return -1 if the element is not found
```

In [4]:
```python
# Using recursion to have a funtion that prints the result.
def caller(array, target):
    result = linear_search(array, target)
    if result != -1:
        print("Element", target, "found at index", result)
    else:
        print("Element", target, "not found in the array.")
```

In [5]:
```
# Example usage:
arr = [5, 8, 3, 10, 1]
target_element = 3
caller(arr, target_element)
target_element = 4
caller(arr, target_element)
```

```
Element 3 found at index 2
Element 4 not found in the array.
```

Experiment Three

Python program to read and display the student's name and marks in three subjects.

In [6]:
```
# Function to read the student's name and marks
def read_student_data():
    name = input("Enter student's name: ")
    marks = []

    for i in range(3):
        subject = input("Enter marks for subject {}: ".format(i+1))
        marks.append(int(subject))

    return name, marks
```

In [7]:
```
#Funtion to display the student's name and marks
def display_student_data(name, marks):
    print("\nStudent's Name:", name)
    print("Marks in Subjects:")
    for i in range(3):
        print("Subject {}: {}".format(i+1, marks[i]))
```

In [8]:
```
name, marks = read_student_data()
display_student_data(name, marks)
```

```
Enter student's name: John Simon
Enter marks for subject 1: 87
Enter marks for subject 2: 78
Enter marks for subject 3: 98

Student's Name: John Simon
Marks in Subjects:
Subject 1: 87
Subject 2: 78
Subject 3: 98
```

Experiment Four

Performing methods on a list.

In [9]:
```
# Create an empty list
test = []
```

In [10]:
```
# append() method to add an element at the end of the list
test.append(10)
test.append(20)
test.append(30)
print("After appending elements:", test)
```

```
After appending elements: [10, 20, 30]
```

In [11]:
```
# insert() method to insert an element at a specific index
test.insert(1, 15)
print("After inserting an element:", test)
```

```
After inserting an element: [10, 15, 20, 30]
```

In [12]:
```
# remove() method to remove the first occurrence of an element
test.remove(20)
print("After removing an element:", test)
```

```
After removing an element: [10, 15, 30]
```

In [13]:
```
# len() method to get the length of the list
length = len(test)
print("Length of the list:", length)
```

```
Length of the list: 3
```

In [14]:
```
# pop() method to remove and return the last element
popped_element = test.pop()
print("Popped element:", popped_element)
print("List after popping:", test)
```

```
Popped element: 30
List after popping: [10, 15]
```

In [15]:
```
# clear() method to remove all elements from the list
test.clear()
print("List after clearing:", test)
```

```
List after clearing: []
```

Experiment Five

To find Student Grade.

In [16]:
```
def grader(percentage):
    if percentage >= 90:
        grade = 'A'
    elif percentage >= 80:
        grade = 'B'
    elif percentage >= 70:
        grade = 'C'
    elif percentage >= 60:
        grade = 'D'
    else:
        grade = 'F'
    return grade
```

In [17]:
```
percentage = float(input("Enter student's percentage: "))
grade = grader(percentage)
print("Student Grade:", grade)
```

```
Enter student's percentage: 56
Student Grade: F
```

In [18]:
```
percentage = float(input("Enter student's percentage: "))
grade = grader(percentage)
print("Student Grade:", grade)
```

```
Enter student's percentage: 78
Student Grade: C
```