**Exercise 1:**

CRUD operations (Create, Read, Update, Delete) in an array

**PROGRAM**

**Using function**

arr = []

def create(element): arr.append(element)

def read(): print("Array:", arr if arr else "Empty")

def update(index, value): arr[index] = value if 0 <= index < len(arr) else print("Invalid index")

def delete(index): print(f"Deleted: {arr.pop(index)}") if 0 <= index < len(arr) else print("Invalid index")

# CRUD operations

create(10)

create(20)

create(30)

read()

update(1, 25)

read()

delete(0)

read()

**OUTPUT**

Array: [10, 20, 30]

Array: [10, 25, 30]

Deleted: 10

Array: [25, 30]

**Without function**

arr = [10, 20, 30]

arr.append(40)

print("After Create:", arr)

print("Read:", arr)

arr[1] = 25

print("After Update:", arr)

del arr[2]

print("After Delete:", arr)

**OUTPUT**

After Create: [10, 20, 30, 40]

Read: [10, 20, 30, 40]

After Update: [10, 25, 30, 40]

After Delete: [10, 25, 40]

**Exercise 2:**

**Take user input of numbers to perform linear search in an array or list**

**PROGRAM**

def linear\_search(arr, target):

    for i in range(len(arr)):

        if arr[i] == target:

            return f"Element found at index {i}"

    return "Element not found"

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

arr = []

print(f"Enter {n} elements:")

for \_ in range(n):

    arr.append(int(input()))

target = int(input("Enter the element to search: "))

result = linear\_search(arr, target)

print(result)

**OUTPUT**

Enter the number of elements in the array: 3

Enter 3 elements:

10

25

36

Enter the element to search: 25

Element found at index 1