

## **\*\* Report on Assignment 01 – Data Structures**

Source Code Link: <https://github.com/Engy9/Assignment-DataStructure01>

### **Question 1: Search for an Element in an Array**

Description:

The program searches for a specific target value inside an integer array. If the target exists, it prints the index; otherwise, it prints “Not found.”

Input array → [1, 3, 5, 7, 9]

Target value → 5

Output: Found at index: 2

### **Question 2: Calculate the Sum of Array Elements**

Description:

The code adds all numbers in a one-dimensional array and prints the total.

Input array → [2, 4, 6, 7, 9]

Output: Sum of array elements: 28

### **Question 3: Remove a Specific Key from an Array**

Description:

The code removes all occurrences of a specific key from an integer array.

Input array → [1, 2, 1, 3, 5, 1]

Key → 1

Output: Array after removing Key: [2, 3, 5]

#### **Question 4: Calculate the Sum of ArrayList Elements (Version 1)**

Description:

Creates an ArrayList of integers, adds elements to it, and calculates the total sum.

ArrayList → [2, 4, 6, 7, 9]

Output: Sum of ArrayList elements: 28

#### **Question 5: Calculate the Sum of ArrayList Elements (Version 2)**

Description:

A similar approach to Question 4, but demonstrates working with another ArrayList variable.

ArrayList → [2, 4, 6, 7, 9]

Output: Sum of ArrayList elements: 28

#### **Question 6: Get Elements After a Given Key**

Description:

This question uses a separate class (ExerciseSix) that contains a method called `getElementsAfterKey()` which returns all elements that come immediately after a specific key value in an ArrayList.

Input array → [1, 2, 1, 3, 5, 1]

Key → 1

Output: [2, 3, 5]