

**** 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]