Data Structure and Algorithm

Laboratory Activity No. 3

Translating Algorithm to Program

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I. Objectives

Introduction

Data structure is a systematic way of organizing and accessing data, and an algorithm is a step-by-step procedure for performing some tasks in a finite amount of time. These concepts are central to computing, but to be able to classify some data structures and algorithms as "good," we must have precise ways of analyzing them.

This laboratory activity aims to implement the principles and techniques in:

- Writing a well-structured procedure in programming
- Writing algorithm that best suits to solve computing problems
- Writing an efficient Python program from translated algorithms

II. Methods

- Design an algorithm and the corresponding flowchart (Note: You may use LucidChart or any application) for adding the test scores as given below if the number is even: 26,49,98,87,62,75
- Translate the algorithm to a Python program (using Google Colab)
- Save your source codes to GitHub

III. Results

Algorithm :

- Start
- Initialize a list of test scores
- For each number in the list:

    If the number is even, add it to total
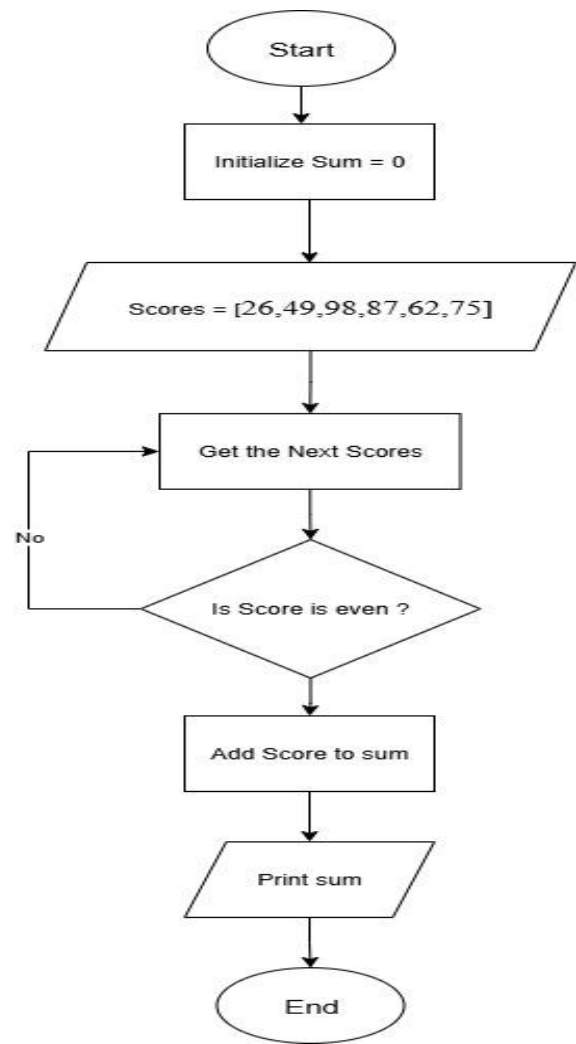- Print the value of total
- End

Flowchart:

Figure 1 Flowchart

Source Code:


```
scores = [88, 56, 77, 11, 37, 75, 105]

total = 0

for score in scores:
    if score % 2 == 0:
        total += score

print("Sum of even scores:", total)
```

Sum of even scores: 144

Figure 2 Screenshot of Sourcecode

Link of Sourcecode: LAB-3 - Colab

IV. Conclusion

This activity helped me gain a clearer understanding of how algorithms, flowcharts, and code are interconnected. Starting with a basic task adding only the even numbers from a list, I was able to break it into simple steps, represent it visually through a flowchart, and then turn it into working Python code. Seeing how each part contributes to the overall process made it feel more practical and easier to understand. It showed me that even straightforward exercises can be very educational when approached step by step.