



UNIVERSITY OF CALOOCAN CITY  
COMPUTER ENGINEERING DEPARTMENT



Data Structure and Algorithm

Laboratory Activity No. 3

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# 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

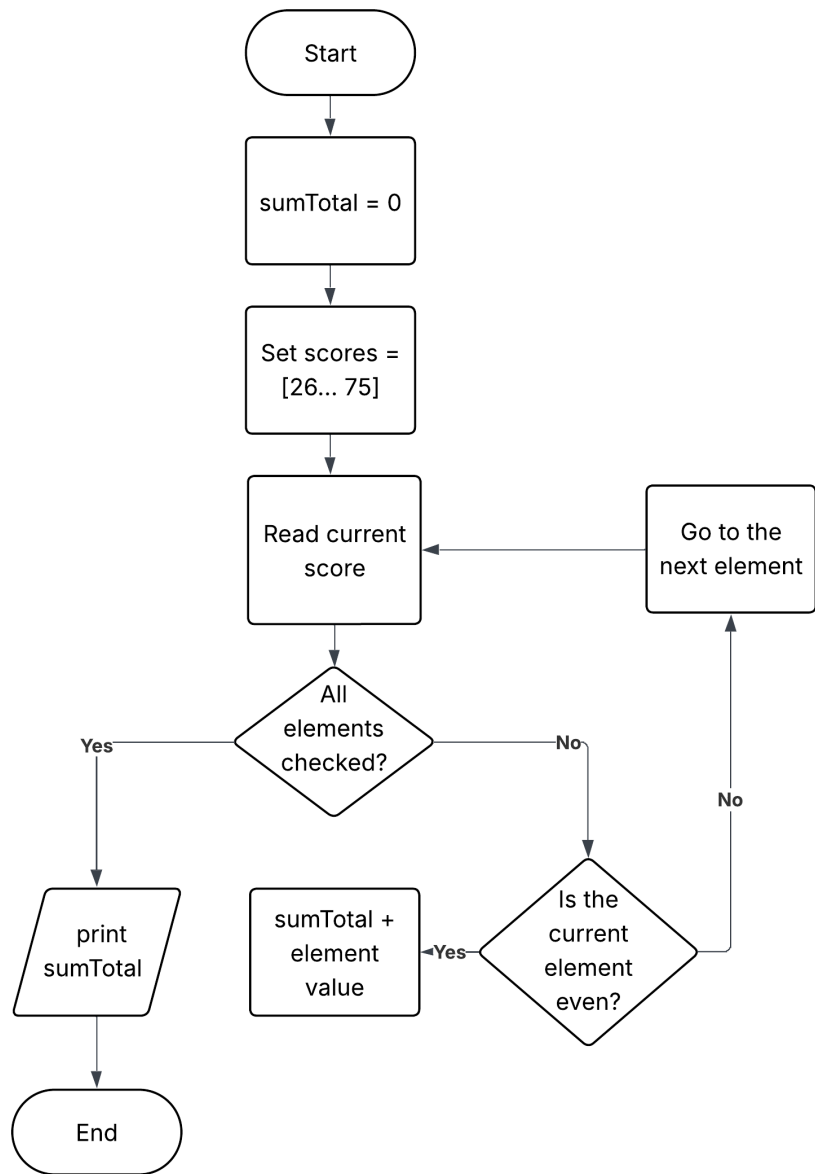


Figure 1: Screenshot of flowchart made in Lucidchart

This flowchart shows the initialization of sumTotal, then setting the list of scores. I don't know what the proper way to add a for loop is, so I just made my loop representation where it would read the current element in the list, then check if all elements are checked, and then if no, it would proceed to check if the current element is even; if yes, it adds to the sumTotal, and if no, it will move to the next element, and the cycle repeats until the check if all elements are checked returns a yes and it prints the sumTotal.

```
Sum even scores

[2] sumEven = 0

scores = [26,49,98,87,62,75]

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

print(f"Sum or even scores: {sumEven}")

Sum or even scores: 186
```

Figure 2: Screenshot of program made in Google Colab

The program I made is simple. It made use of modulus (%) and a for loop. I had to initialize sumEven as 0 so that the scores will just add there as the for loop goes and so it can easily be printed.

## IV. Conclusion

In conclusion, this laboratory report helped me understand for loops better, and it also helped me improve in terms of making better flowcharts. Overall, it helped me improve my logic-building skill.

## References

- [1] Co Arthur O.. “University of Caloocan City Computer Engineering Department Honor Code,” UCC-CpE Departmental Policies, 2020.