Data Structure and Algorithm

Laboratory Activity No. 3

Translating Algorithm to Program

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# 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

# 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

# Results

Algorithm  
1. Start

2. Initialize a variable sum = 0

3. For each score in the list:  
a. If the score is even (i.e., score % 2 == 0), add it to sum  
b. If the score is not even skip to the end

4. After the scores processed, display the sum

5. End

A diagram of a graph

AI-generated content may be incorrect.

Figure 1 Screenshot of program

This flow chart shows that each shape has its own role like the diamond shape. The program will decide on this part if the score is even or not. If yes, the next process is to add score to sum, and it will go to display the score and it will end if not it will direct to the end of the program.

A screenshot of a computer program

AI-generated content may be incorrect.

Figure 1 Screenshot of program

This code is all about how to get the sum of even scores if you see the scores have odd and even so this code will get only the even scores once they get the even scores the next process is score % 2 == 0 then sum\_even + = score and it will print the total which is 186.

# Conclusion

The conclusion expresses the summary of the whole laboratory report as perceived by the authors of the report.

This Lab activity that I learn to design a step-by-step process that checks each number and adds it to the total only if the sum is even. While the flowchart each shape has corresponding roles.

**References**

**Lucidchart.** (n.d.). *What is a flowchart?* Retrieved from:  
<https://www.lucidchart.com/pages/what-is-a-flowchart>

**Google Colab.** (n.d.). *Welcome to Colaboratory*. Retrieved from:  
<https://colab.research.google.com>