Data Structure and Algorithm

Laboratory Activity No. 2

Algorithm Analysis and Flowchart

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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 task 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 to improve the efficiency of computers
* Convert algorithms into flowcharting symbols

# Methods

* 1. Explain algorithm and flowchart

-x, x<0

x, x ≥ 0

* 1. Write algorithm to find the result of equation: f (x) = and draw its flowchart
  2. Write a short recursive Python function that finds the minimum and maximum values in a sequence without using any loops

# Results **A.**

An algorithm is a step-by-step set of instructions or a logical sequence of actions designed to solve a specific problem or perform a task, usually written in plain language or pseudocode. A flowchart is a visual representation of an algorithm, using symbols such as ovals, rectangles, diamonds, and arrows to illustrate the process flow, decisions, and sequence of steps, making it easier to understand and follow the logic.

**B. ALGORITHM**1. Start  
2. Input the value of x

3. if x < 0, then f (x) = -x  
4. Else, f (x) = x

5. Output f (x)

6. End

**Flowchart**

**A diagram of a algorithm

AI-generated content may be incorrect.**

**C. PROGRAM**

A screenshot of a computer program

AI-generated content may be incorrect.

# Conclusion

In conclusion, this program help us to learn the use of algorithms and flowcharts to understand the flow of the code and make a functional program and by using the algorithms and flowchart symbols it makes me easier to understand how the program will run.

**References**

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