KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Project Proposal

Department: Elecctronics and Communications Engineering

Course No.: ECE 2204

Course Title: Microprocessors and Microcomputers Laboratory

Topic: Series Analyzer and Generator.

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Submitted By:

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Objectives:

1. To implement a assembly code for analyzing and building a series.

2. To perform division, multiplication, addition, subtraction

3.To find difference and sum for a nth element of a given series.

4.To find the series from a given 1st element of a series and the difference between two elements. Also, find the sum for nth elements.

5.To be able to use 8086 microprocessor.

Apparatus:

Table-1: List of required apparatus: -

Apparatus name	Quantity	Ratings
Microprocessor kit (8086-trainer-kit)	01	0-5V
Microprocessor software (emu8086)	01	_____

Description:

In this project there are two sections. One is series analyzer and the other is series builder. Let's discuss both sections:

Mathematically,

$$Tn=a+(n-1)\times d$$

Where,

Tn= Nth element of a series

a= First element of a series

n= No of element of a series

d= difference between two elements of a series

Sn=Sum of n element of a series

$$Sn=n\times(2a+(n-1)\times d)/2$$

Series analyzer: For a given series it will find the difference by which the series was built and store the result in a location. Then find the sum of the n element and store into the next element.

Series Builder: IF the data like difference between two respective elements and the first element is given then the series can be built. The Nth element of the series and sum of N element can bou found.

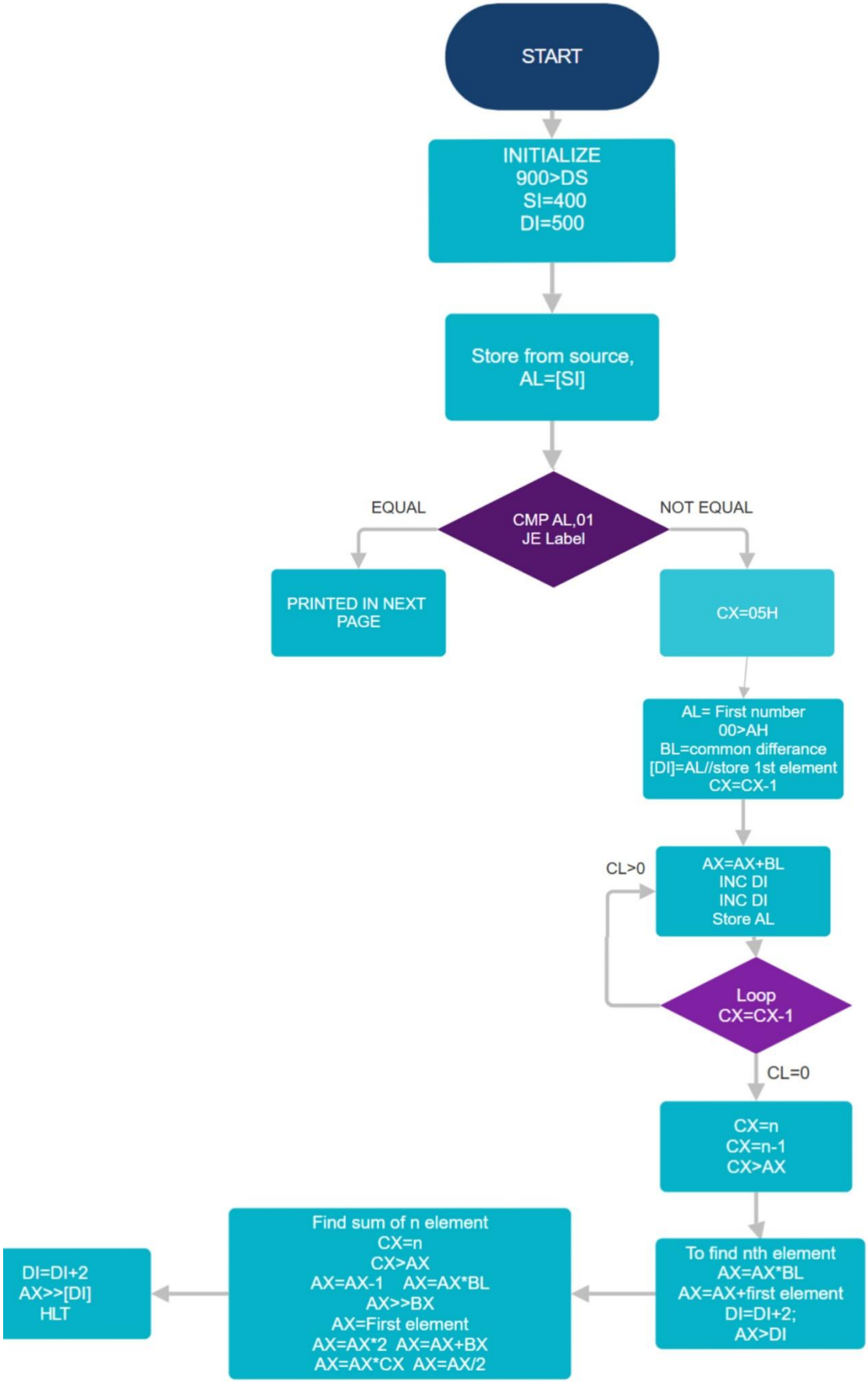

Fig 1: FLOWCHART of Series Builder.

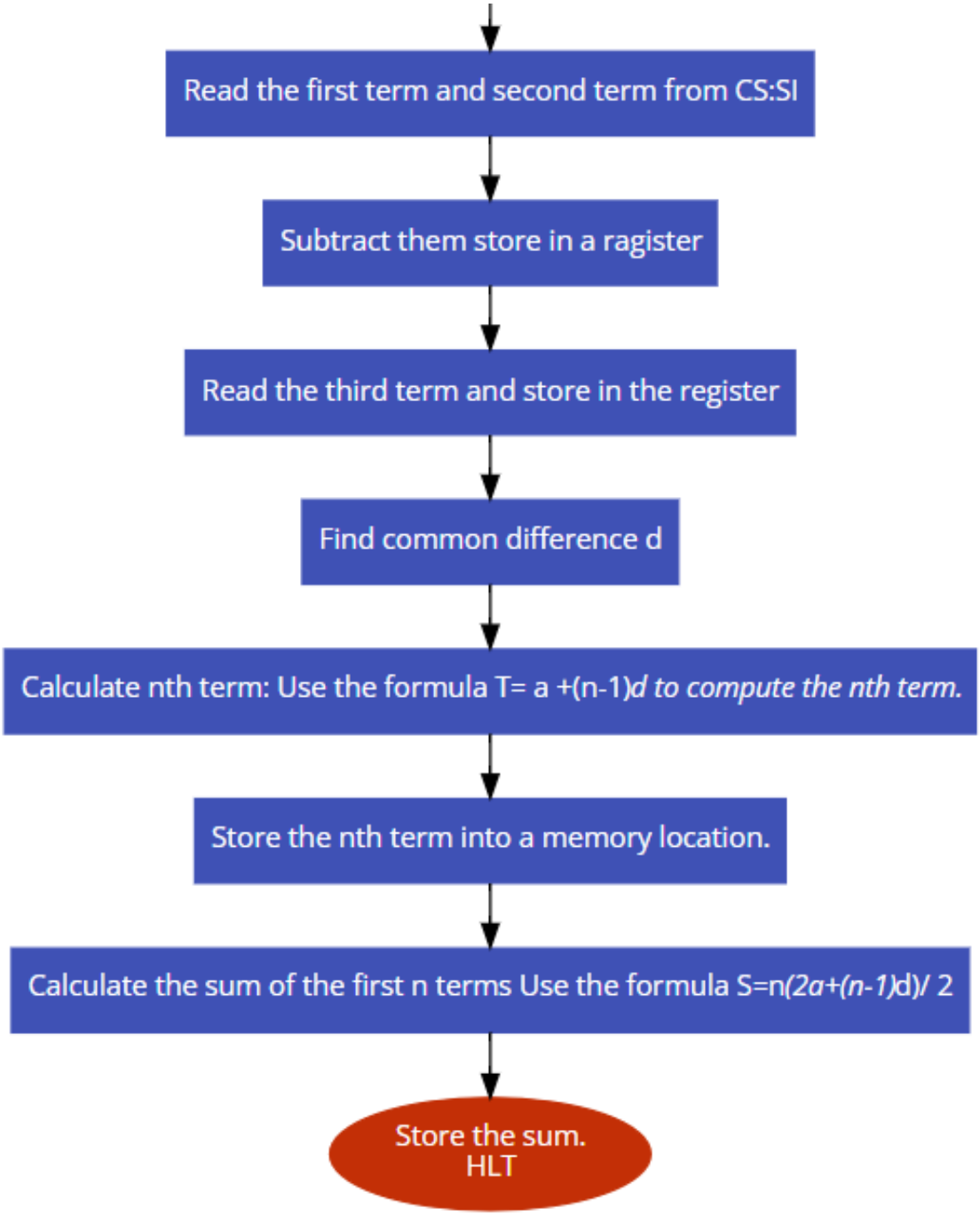

Fig. 2: Flowchart for series analyzer

Conclusion:

This project will provide to operate with series. Both the analyzer and the generator have practical applications in various fields, from academic mathematics to practical real-world problems in finance, engineering, and physics. They provide a structured way to work with sequences and can be implemented in many programming environments, including assembly language or higher-level languages, depending on the need for performance and simplicity.

Reference:

1. *https://www.tutorialspoint.com/microprocessor/microprocessor_8086_overview.htm*
2. *https://www.javatpoint.com/8086-microprocessor*
3. *https://www.tutorialspoint.com/microprocessor/microprocessor_8086_instruction_sets.htm*
4. *https://www.geeksforgeeks.org/8086-instruction-set/*