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8085 MICRO-PROCESSOR PROGRAMS

ADDITION OF TWO 16-BIT NUMBERS USING 8085

➢ An Assembly Language Program to perform addition of two 16-bit numbers using 8085?

Algorithm

1) Start the program by loading HL register pair with address of 1st number.
2) Copy the data to DE register pair.
3) Load the second number to HL pair.
4) Add the two register pair contents.
5) Check for carry.
6) Store the value of sum and carry in memory locations.
7) Terminate the program.

Program

MEMORY	LABEL	MNEMONIC	HEX CODE	COMMENT
4200		MVI C,00	0E	Initialize C a 0
4201			00	
4202		LHLD 4500	2A	Load address of 1st number to HL pair
4203			00	
4204			45	
4205		XCHG	EB	Copy 1st number to DE pair
4206		LHLD 4502	2A	Load address of 2nd number to HL pair
4207			02	
4208			45	
4209		DAD D	19	Add HL pair with DE pair
420A		JNC GO	D2	Jump on no carry to the label GO
420B			0E	
420C			42	
420D		INR C	0C	Increment C by 1
420E	GO	SHLD 4100	22	Store HL pair content to 4100
420F			00	
4210			41	
4211		MOV A,C	79	Content of C copied to A
4212		STA 4102	32	Store accumulator content to 4102
4213			02	
4214			41	
4215		HLT	76	Program ends

Observation

Input at 4500 : 0603_H
4502 : 0009_H

Output at 4100 : $060C_H$
4102 : 00_H

PROGRAMMING

C Programmir
Data Structured
System Software
Hardware Prograr
Micro Processor
Java Network Pro
Database Prograr
Network Simulato
HTML & Javascrip
ASP .net with C#

8085 Micro-Processor Programs

Multiplication of two 8-bit numbers using 8085 Ø An Assembly Language Program to perform multiplication of two 8-bit numbers us...

Sine,Cosine & Exponential Series

6. Program to evaluate Sine Series, Cosine Series and Exponential Series? Sine series : sin x = x - ((x^3)/3!) + ...

Identification of Keyword or valid Identifier

22. Program to check whether the given string is a keyword or a valid identifier? Program #include<stdio.h> #include<...

LABELS

8085 (13) ASP .NET WITH C# (2)

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C++ PROGRAM (3) DBMS (2)

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MICRO-CONTROLLER PROGRAM (2)

MICRO-PROCESSOR PROGRAM (13)

NS2 (2)

NS2 INSTALLATION GUIDE (1)

PROGRAMS AND CODES (1)

SUBTRACTION OF TWO 16-BIT NUMBERS USING 8085

➢ An Assembly Language Program to perform subtraction of two 16-bit numbers using 8085?

Algorithm

1) Start the program by loading HL register pair with address of 1st number.
2) Copy the data to DE register pair.
3) Load the second number to HL pair.
4) Copy data in register E to Accumulator.
5) Copy date in register L to register B.
6) Subtract data in register B from Accumulator.
7) Check for carry.
8) If carry is present take 2's complement of Accumulator.
9) Store the difference value in the memory location.
10) Copy data in register D to Accumulator.
11) Subtract data in register H from Accumulator along with borrow.
12) Check for carry.
13) If carry is present take 2's complement of Accumulator.
14) Store the difference value and borrow in the memory location.
15) Terminate the program.

Program

MEMORY	LABEL	MNEMONIC	HEX CODE	COMMENT
4400		LHLD 4600	2A	Load 1st numbers address to HL pair
4401			00	
4402			46	
4403		XCHG	EB	Exchange between HL and DE pair
4404		LHLD 4602	2A	Load address of 2nd number to HL pair
4405			02	
4406			46	
4407		MVI C,00	0E	Initialize C as 0
4408			00	
4409		MOV A,E	7B	Copy content of E to accumulator
440A		MOV B,L	45	Copy content of register L to B
440B		SUB B	90	Subtract B from Accumulator
440C		JNC GO	D2	Jump on no carry to label GO
440D			11	
440E			44	
440F		CMA	2F	Compliment Accumulator content
4410		INR A	3C	Increment Accumulator content by 1
4411	GO	STA 4300	32	Store accumulator content to 4300
4412			00	
4413			43	
4414		MOV A,D	7A	Copy content of D to accumulator
4415		SBB H	9C	Subtract content of H from accumulator along with borrow
4416		JNC LABEL	D2	Jump on no carry to LABEL
4417			1C	
4418			44	
4419		INR C	0C	Increment C by 1
441A		CMA	2F	Compliment Accumulator content
441B		INR A	3C	Increment accumulator content by 1
441C	LABEL	STA 4301	32	Store accumulator content to 4301
441D			01	
441E			43	
441F		MOV A,C	79	Copy carry to the accumulator

4420		STA 4302	32	Store the accumulator content to 4302
4421			02	
4422			43	
4423		HLT	76	Program ends

Observation

Input at 4600 : $080F_H$

4602 : 0603_H

Output at 4300 : $0C_H$

4301 : 02_H

4302 : 00_H

Labels: 8085, Hardware Programs, Micro-Processor Program

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