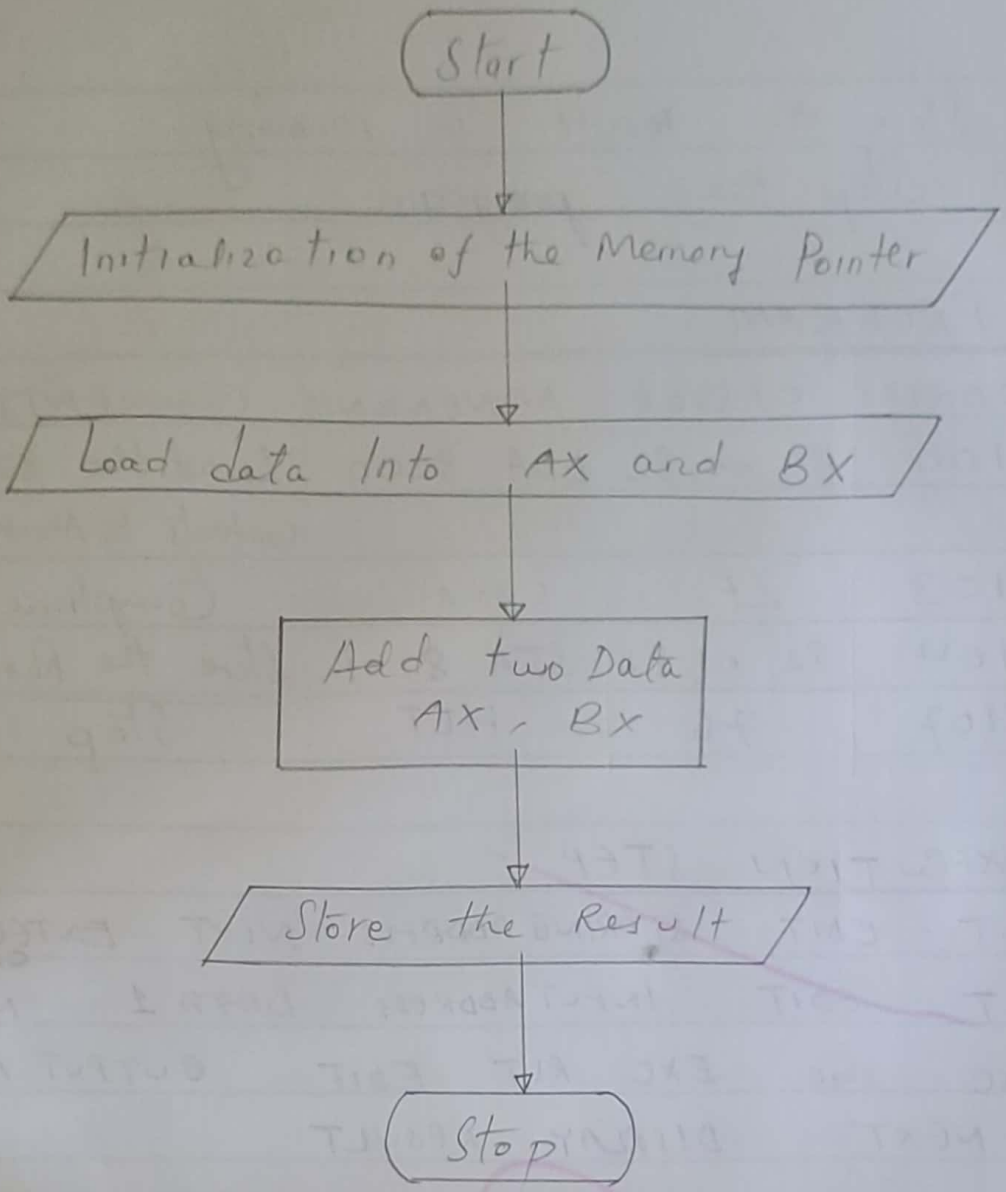
FLOW CHART


Start
Initialization of the Memory Pointer
Load data Into AX and BX
Add two Data AX, BX
Store the Result
Stop

EXP NO :- 06

DATE :- 13/7/016

16-BIT ADDITION FOR 8086

Aim:

To write the program and perform the 16-bit addition of two numbers

APPARATUS REQUIRED

S/NO	NAME OF APPARATUS	QUANTITY
1	8086 Microprocessor Trainer Kit	1
2	Power supply	1

Theory:

→ The result for addition of two 16-bit numbers is obtained by adding the most significant Bits of two numbers followed by addition of the least significant Bits of the respective numbers

ALGORITHM

1. Start the program
2. Initialize the memory pointer
3. Load the data into Accumulator A(x) and Base Register (BX)
4. Add the two Data

OBSERVATION

FOR INPUT

Memory Address	Data	
9300	06	— (1)
9301	05	— (2)
9302	04	— (3)
9303	01	— (2)

FOR OUTPUT

Memory Address	Data
9350	0A
9351	06

5. Store the Result
6. Stop the program

PROGRAM

ADDRESS	OPCODE	MNEMONIC	COMMENTS
8400	BE, 00, 93	MOV SI, 9300	Move 9300 into SI pointer
8403	AD	LOD SW	Load 1st data into Accumulator
8404	8B, D8	MOV BX, AX	Move AX value into BX
~~8406~~	~~AD~~		
8406	AD	LOD SW	Load 2nd data into AX
8407	01, C3	ADD BX, AX	Add AX and BX
8409	BF, 50, 93	MOV D, 9350	Load 9350 address Location to DI
840C	89, 1D	MOV I (DI)	Store DI Value to memory
840E	F4	HLT	End the program

EXECUTION STEP

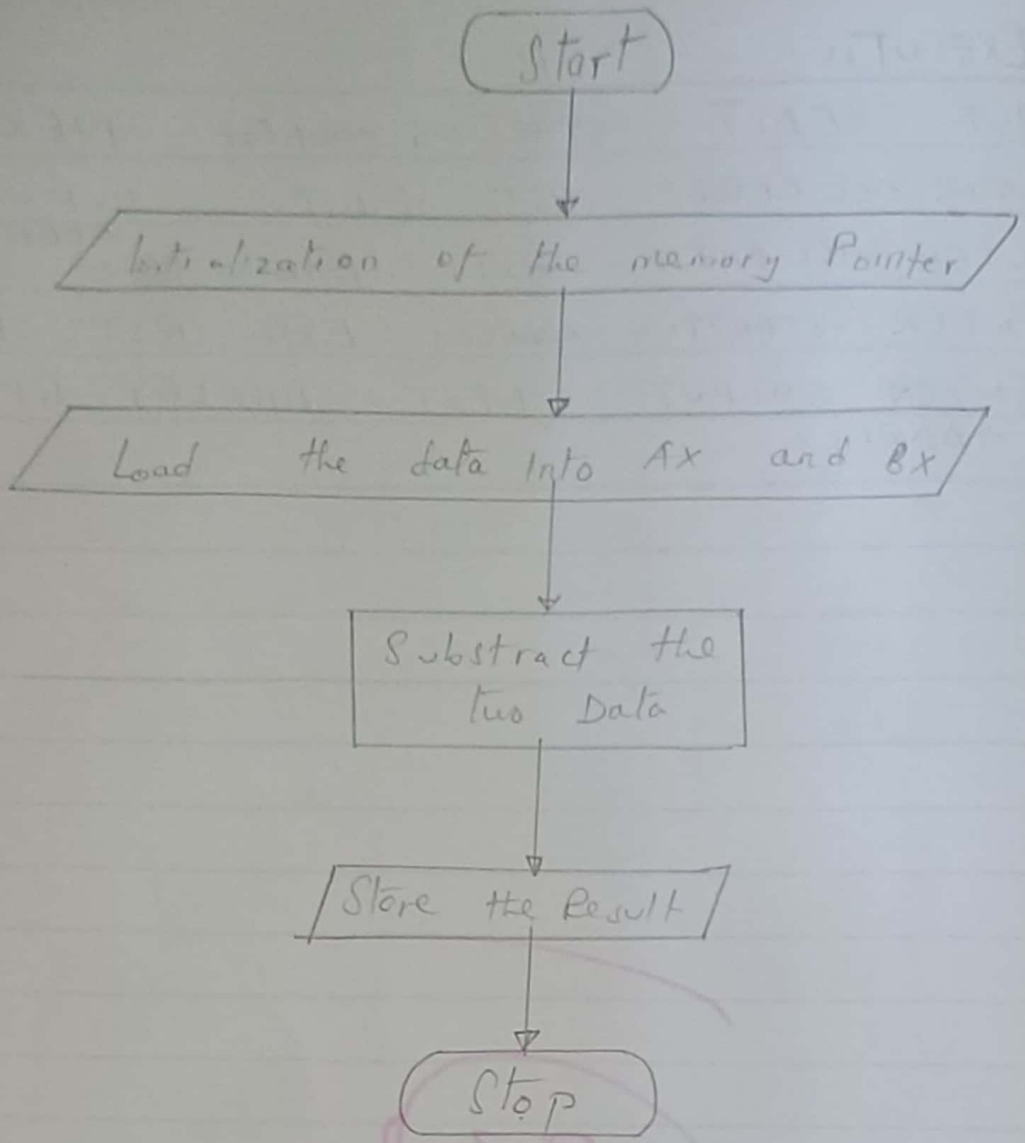
RST → EDIT → STARTING ADDRESS → NEXT →
ENTER ALL OPCODE → RST → EDIT → INPUT ADDRESS →
ENTER ALL DATA → RST → EXC → GO →
ENTER STARTING ADDRESS → EXC → RST → EDIT →
ENTER OUTPUT ADDRESS → NEXT → DISPLAY RESULT

8/10

RESULT:

Thus the program for 16-bit addition was successfully executed by using 8086 microprocessor trainer kit

Flow CHART


Start
Initialization of the memory Pointer
Load the data into Ax and Bx
Substract the two Data
Store the Result
Stop

EXP NO :- 07

DATE :- 13/7/016

16 - BIT SUBSTRACTION FOR 8086

Aim:

To write the program and perform the 16-Substraction of two numbers

APPARATUS REQUIRED

S/NO	NAME OF APPARATUS	QUANTITY
1	8086 Microprocessor Trainer kit	1
2	Opcode Sheet	1
3	Power Supply	1

Theory

The result for substraction of two 16-bit numbers is obtained by substracting the most significant Bits together followed by substraction of the least significant Bits of the two data

ALGORITHM

1) Start the program
2) Initialize the data into memory Pointer
3) Load the data into accumulator (AX) and Base Register (BX)
4) Substract the two Data

OBSERVATION

FOR INPUT

Memory Address	Data
9300	06
9301	05
9302	04
9303	01

FOR OUTPUT

Memory Address	Data
9350	02
9351	04

5) Store the result

6) Stop the program

PROGRAM

ADDRESS	OPCODE	MNEMONIC	COMMENTS
8400	BE, 00, 93	MOV SI, 9300	Move 9300 into SI pointer
8403	AD	LOD SW	Load 1st data into Accumulator
8404	8B, D8	MOV BX, AX	Move AX value into BX
8406	AD	LOD SW	Load 2nd data into AX
8407	2B, D8	SUB BX, AX	Substract AX and BX
8409	BF, 50, 93	MOV DI, 9350	Load 9350 address
			Location to DI
840C	89, 1D	MOV I, (DI)	Store DI value to
			memory
840E	F4	HLT	End the program

EXECUTION STEP

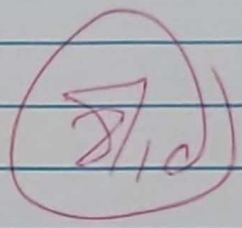
RST → EDIT → STARTING ADDRESS → NEXT → ENTER ALL OPCODE

→ RST → EDIT → INPUT ADDRESS → ENTER ALL DATA →

→ RST → EXC → GO → ENTER STARTING ADDRESS

→ EXC → RST → EDIT → OUTPUT ADDRESS

→ NEXT → DISPLAY RESULT



RESULT

Thus the program for 16-bit subtraction was successfully written and executed by using the microprocessor trainer kit.