

MICROPROCESSOR

BCA 3RD SEMESTER 2020

LECTURE- 9

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8085 INSTRUCTION SET

- **DATA TRANSFER INSTRUCTIONS**
- **ARITHMETIC INSTRUCTIONS**
- **BRANCHING INSTRUCTIONS**
- **LOGICAL INSTRUCTIONS**
- **CONTROL INSTRUCTIONS**

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8085 INSTRUCTION SET

ARITHMETIC INSTRUCTIONS

Add register or memory to accumulator

ADD	R
	M

ADD B or ADD M

Add register to accumulator with carry

ADC	R
	M

ADC B or ADC M

8085 INSTRUCTION SET

ARITHMETIC INSTRUCTIONS (Cont.)

Add immediate to accumulator

ADI 8-bit data

ADI 45H

Add immediate to accumulator with carry

ACI 8-bit data

ACI 45H

8085 INSTRUCTION SET

ARITHMETIC INSTRUCTIONS (Cont.)

Add register pair to H and L registers

DAD	Reg. pair
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DAD H

Subtract register or memory from accumulator

SUB	R
	M

SUB B or SUB M

8085 INSTRUCTION SET

ARITHMETIC INSTRUCTIONS (Cont.)

Subtract source and borrow from accumulator

SBB	R
	M

SBB B or SBB M

Subtract immediate from accumulator

SUI	8-bit data
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SBI 45H

8085 INSTRUCTION SET

ARITHMETIC INSTRUCTIONS (Cont.)

Increment register or memory by 1

INR	R
	M

INR B or INR M

Increment register pair by 1

INX	R
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INX H

8085 INSTRUCTION SET

ARITHMETIC INSTRUCTIONS (Cont.)

Decrement register or memory by 1

DCR	R
	M

DCR B or DCR M

Decrement register pair by 1

DCX	R
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DCX H

8085 INSTRUCTION SET

ARITHMETIC INSTRUCTIONS (Cont.)

Decimal adjust accumulator

DAA	none
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The contents of the accumulator are changed from a binary value to two 4-bit binary coded decimal (BCD) digits.

If the value of the low-order 4-bits in the accumulator is greater than 9 or if AC flag is set, the instruction adds 6 to the low-order four bits.

DAA

8085 INSTRUCTION SET

BRANCHING INSTRUCTIONS

JMP Instruction

Jump unconditionally
JMP 16-bit address

Jump conditionally

Operand: 16-bit address

Opcode	Description	Flag Status
JC	Jump on Carry	CY = 1
JNC	Jump on no Carry	CY = 0
JP	Jump on positive	S = 0
JM	Jump on minus	S = 1
JZ	Jump on zero	Z = 1
JNZ	Jump on no zero	Z = 0
JPE	Jump on parity even	P = 1
JPO	Jump on parity odd	P = 0

8085 INSTRUCTION SET

BRANCHING INSTRUCTIONS (Cont.)

CALL Instruction

Unconditional subroutine call
CALL 16-bit address

Call conditionally

Operand: 16-bit address

Opcode	Description	Flag Status
CC	Call on Carry	CY = 1
CNC	Call on no Carry	CY = 0
CP	Call on positive	S = 0
CM	Call on minus	S = 1
CZ	Call on zero	Z = 1
CNZ	Call on no zero	Z = 0
CPE	Call on parity even	P = 1
CPO	Call on parity odd	P = 0

The background is a blue gradient with decorative white circuit-like lines in the corners. The lines consist of straight segments and small circles, resembling a network or data flow diagram.

THANK YOU

End of Lecture- 9

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