Branching operations—

group of instructions alters the sequence of instruction either conditionally or unconditionally.

Jump — change the sequence on zero or carry Flag.

Call, Return and Restart —

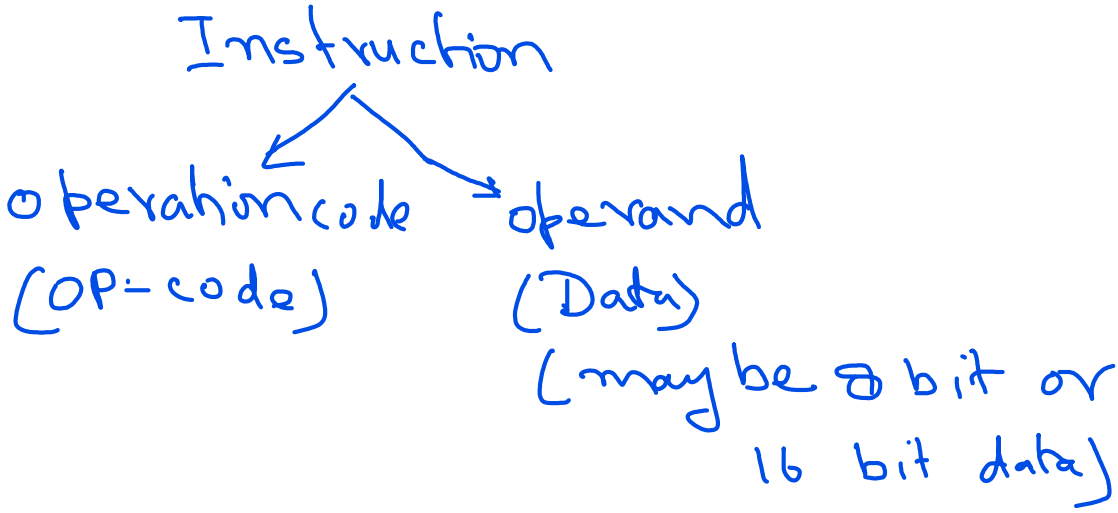
change the sequence by - either calling subroutine or returning from a subroutine

Machine control operations —

HLT, interrupt or donothing.

Instruction, Data Format and storage

Instruction is a command to the microprocessor to perform a task on a specified data.



Instruction word Size —

→ byte

- one byte instruction
- two byte "
- three byte "

One Byte Instruction —

Ex			Binary code	Hexcode
	MOV	C, A	01001111	4FH
	ADD	B	10000000	80H
	CMA		00101111	2FH

Two Byte Instruction —

Opcode	operand	Binary code	Hexcode
MVI	A, 32H	0011 1110 0011 0010	3E → First Byte 32 → 2nd Byte
MVI	B, F2H	0000 0110 1111 0010	06 F2

Three Byte Instruction —

LDA	2050H (memory address)	0011 1010	3A →	1 Byte
		0101 0000	50 →	1 Byte
		0010 0000	20 →	1 Byte
				3 Byte
JMP	2055H	1100 0011	C3	3 Byte
		1000 0101	85	
		0010 0000	20	

- Write an Assembly language program, Assemble and execute.

Hex code

2000 3E → MVI A, 32H
2001 32
2002 06 → MVI B, 48H
2003 48
2004 80 → ADD B
2005 D3 → OUT 01H → Display accumulator content at PORT 01H
2006 01
or
2007 32 → STA 2050H
2008 50
2009 20
200A 76 → HLT

→ 2007 memory