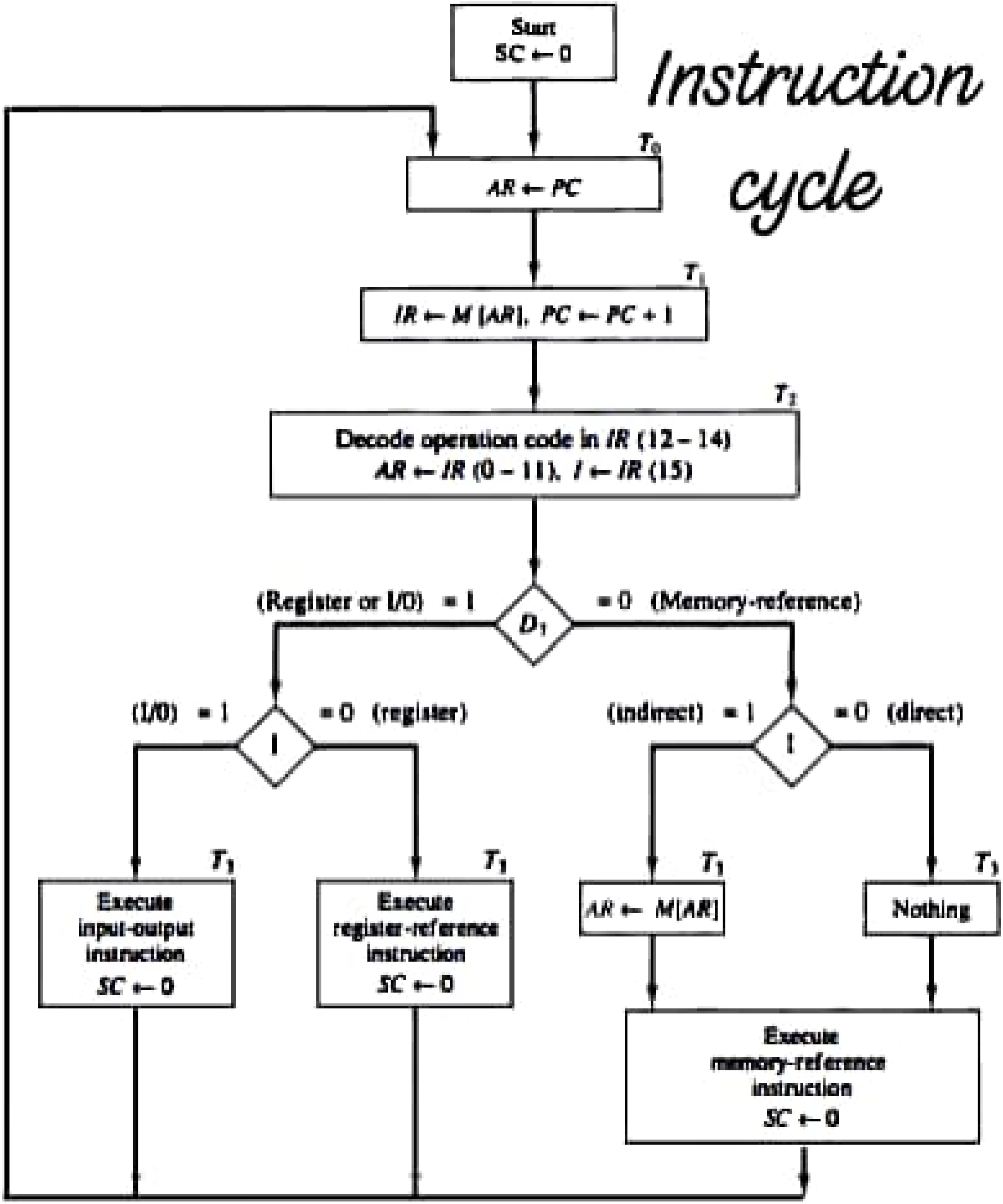


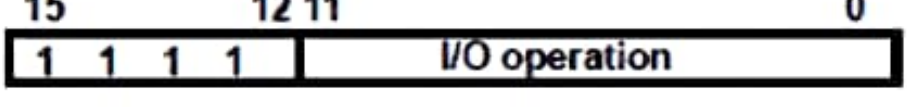
Figure Flowchart for instruction cycle (initial configuration).

Memory-Reference Instructions (OP-code = 000 ~ 110)

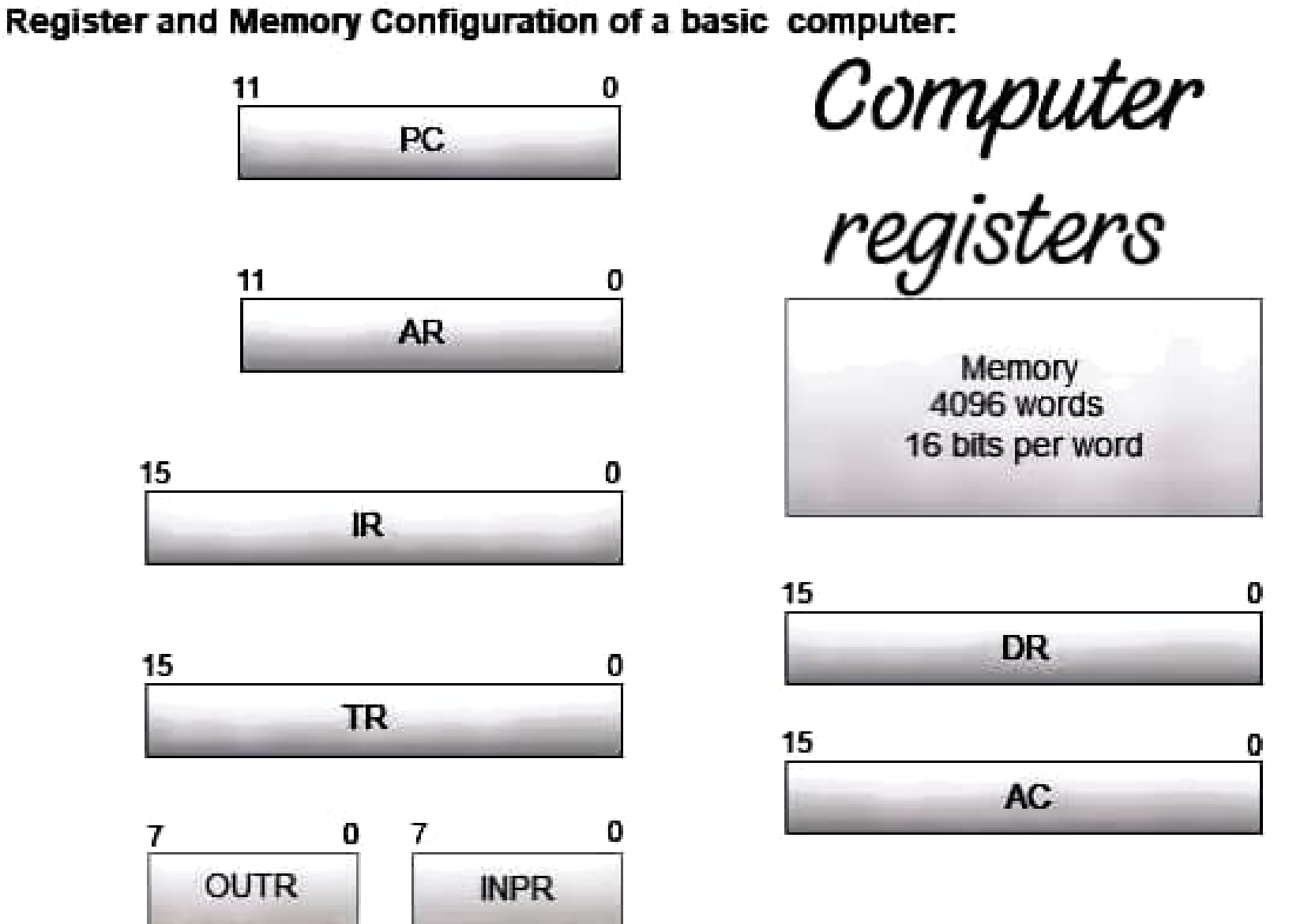
Types of instruction code/computer instructions

Register-Reference Instructions (OP-code = 111, I = 0)

Input-Output Instructions (OP-code =111, I = 1)



Register and Memory Configuration of a basic computer:



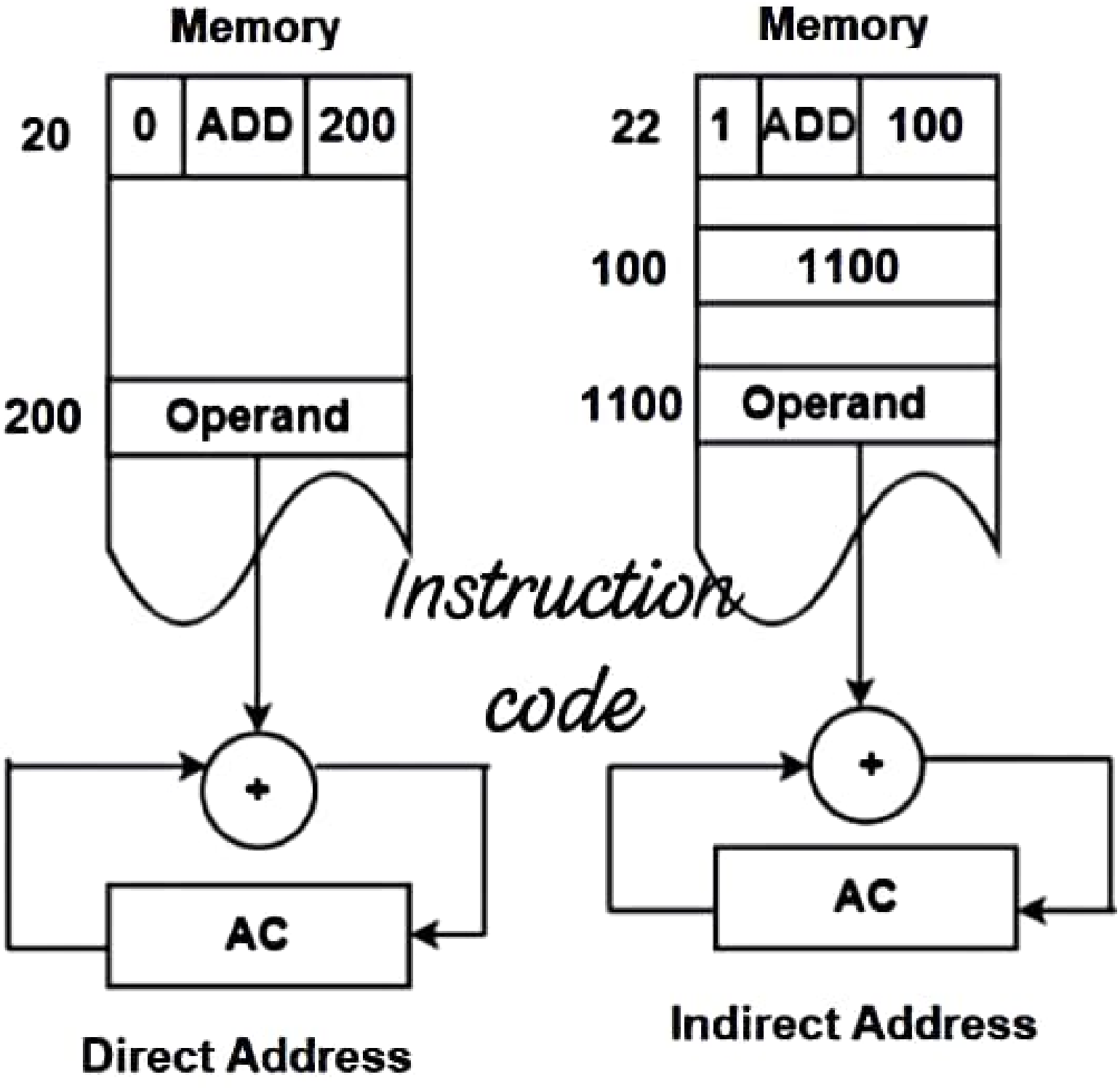
BASIC COMPUTER INSTRUCTIONS

Symbol	Hex Code I = 0	Hex Code I = 1	Description
AND	0xxx	8xxx	AND memory word to AC
ADD	1xxx	9xxx	Add memory word to AC
LDA	2xxx	Axxx	Load AC from memory
STA	3xxx	Bxxx	Store content of AC into memory
BUN	4xxx	Cxxx	Branch unconditionally
BSA	5xxx	Dxxx	Branch and save return address
ISZ	6xxx	Exxx	Increment and skip if zero
CLA	7800		Clear AC
CLE	7400		Clear E
CMA	7200		Complement AC
CME	7100		Complement E
CIR	7080		Circulate right AC and E
CIL	7040		Circulate left AC and E
INC	7020		Increment AC
SPA	7010		Skip next instr. if AC is positive
SNA	7008		Skip next instr. if AC is negative
SZA	7004		Skip next instr. if AC is zero
SZE	7002		Skip next instr. if E is zero
HLT	7001		Halt computer
INP	F800		Input character to AC
OUT	F400		Output character from AC
SKI	F200		Skip on input flag
SKO	F100		Skip on output flag
ION	F080		Interrupt on
IOF	F040		Interrupt off

Memory ref. Instruction

Register reference instructions

Input/output reference instructions


Memory
20
0
ADD
200
200
Operand
+
AC
Direct Address
Memory
22
1
ADD
100
100
1100
1100
Operand
+
AC
Indirect Address
Instruction
code