

INSTRUCTION	C	Z	P/V	S	N	H	COMMENTS
ADD s; ADC s	↑	↑	↑	↑	0	↑	8-bit add or add with carry
SUB s; SBC s; CP s; NEG	↑	↑	↑	↑	1	↑	8-bit subtract, subtract with carry, compare and negate accumulator
AND s	0	↑	P	↑	0	1	Logical operations
OR s; XOR s	0	↑	P	↑	0	0	And sets different flags
INC s	0	↑	P	↑	0	↑	8-bit increment
DEC s	0	↑	P	↑	1	↑	8-bit decrement
ADD DD, SS	↑	↑	V	↑	0	X	16-bit add
ADC HL, SS	↑	↑	V	↑	0	X	16-bit add with carry
SBC HL, SS	↑	↑	V	↑	1	X	16-bit subtract with carry
RLA; RLCA, RRA, RRCA	↑	↑	V	↑	0	0	Rotate accumulator
RL s; RLC s; RR s; RRC s	↑	↑	P	↑	0	0	Rotate and shift location s
SLA s; SRA s; SRL s	↑	↑	P	↑	0	0	Rotate left and right
RLD, RRD	0	↑	P	↑	0	0	Decompose adjust accumulator
DAA	↑	↑	P	↑	1	↑	Complement accumulator
CPL	↑	↑	V	↑	0	0	Set carry
SCF	↑	↑	V	↑	0	0	Complement carry
CCF	↑	↑	V	↑	0	0	Input register indirect
IN i, (C)	0	↑	P	↑	0	0	Block input and output
OUT i, (C)	0	↑	P	↑	1	X	Z = 0 if B ≠ 0 otherwise Z = 1
INIR; INDR; OTIR; OTDR	0	↑	P	↑	1	X	Block transfer instructions
LDI, LDD	0	↑	P	↑	0	0	P/V = 1 if BC ≠ 0, otherwise P/V = 0
LDIR, LDDR	0	↑	P	↑	0	0	Block search instructions
CPI, CPIR, CPD, CPDR	0	↑	P	↑	1	X	Z = 1 if A = (HL), otherwise Z = 0
LD A, i; LD A, R	0	↑	IFF	↑	0	0	P/V = 1 if BC ≠ 0, otherwise P/V = 0
BIT b, s	0	↑	X	X	0	1	The content of the interrupt enable flip-flop (IEF) is copied into the P/V flag
NEG	↑	↑	V	↑	1	↑	The state of bit b of location s is copied into the Z flag

The following notation is used in this table:

SYMBOL

C Carry/link flag. C=1 if the operation produced a carry from the MSB of the operand or result.
Z Zero flag. Z=1 if the result of the operation is zero.
S Sign flag. S=1 if the MSB of the result is one.
P/V Parity or overflow flag. Parity (P) and overflow (V) share the same flag. Logical operations affect this flag with the parity of the result while arithmetic operations affect this flag with the overflow of the result. If P/V holds parity, P/V=1 if the result of the operation is even, P/V=0 if result is odd. If P/V holds overflow, P/V=1 if the result of the operation produced an overflow.
H Half-carry flag. H=1 if the add or subtract operation produced a carry into or borrow from into bit 4 of the accumulator.
N Subtract flag. N=1 if the previous operation was a subtract.
H and N flags are used in conjunction with the decimal adjust instruction (DAA) to properly correct the result into packed BCD format following addition or subtraction using operands with packed BCD format.
The flag is affected according to the result of the operation.
The flag is unchanged by the operation.
The flag is reset by the operation.
The flag is set by the operation.
The flag is a "don't care".
P/V flag affected according to the overflow result of the operation.
Any one of the CPU registers A, B, C, D, E, H, L.
Any 8-bit location for all the addressing modes allowed for the particular instruction.
Any 16-bit location for all the addressing modes allowed for that instruction.
Refresh counter.
8-bit value in range <0, 255>.
16-bit value in range <0, 65535>.

OPERATION

SUMMARY OF FLAG OPERATION

INSTRUCTION	SYMBOLIC OPERATION	FLAGS	OP-CODE	NO. OF T. CYCLES	COMMENTS
LD r, r'	r ← r'	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	76 543 210	4	r, r' Reg. 000 B 001 C 010 D 011 E 100 H 101 L 111 A
LD r, r'	r ← r'	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 r' 110	7	
LD r, (HL)	r ← (HL)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 r 110	7	
LD r, (IX+d)	r ← (IX+d)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 011 101	19	
LD r, (IX+d)	r ← (IX+d)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 r 110	7	
LD r, (Y+d)	r ← (Y+d)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	19	
LD (HL), r	(HL) ← r	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 110 r	7	
LD (IX+d), r	(IX+d) ← r	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	19	
LD (Y+d), r	(Y+d) ← r	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 110 r	7	
LD (HL), n	(HL) ← n	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 110 110	10	
LD (IX+d), n	(IX+d) ← n	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 011 101	19	
LD (Y+d), n	(Y+d) ← n	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 110 110	10	
LD (Y+d), n	(Y+d) ← n	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	19	
LD (BC), A	(BC) ← A	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 000 010	7	
LD (DE), A	(DE) ← A	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 010 010	7	
LD (mn), A	(mn) ← A	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 110 010	13	
LD A, i	A ← i	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 101 101	9	
LD A, R	A ← R	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 010 111	9	
LD i, A	i ← A	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 011 111	9	
LD R, A	R ← A	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 101	9	
LD dd, mn	dd ← mn	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 000 001	10	
LD IX, mn	IX ← mn	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 011 101	14	
LD IY, mn	IY ← mn	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	14	
LD HL, (mn)	HL ← (mn)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 101 010	16	
LD dd, (mn)	dd ← (mn)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	01 001 011	20	
LD IX, (mn)	IX ← (mn)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 011 101	20	
LD IY, (mn)	IY ← (mn)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	20	
LD (mn), HL	(mn) ← HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 100 010	16	

INSTRUCTION	SYMBOLIC OPERATION	FLAGS	OP-CODE	NO. OF T. CYCLES	COMMENTS
LD (mn), dd	(mn) ← dd	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 101	20	
LD (mn), IX	(mn) ← IX	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 100 010	20	
LD (mn), IY	(mn) ← IY	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	20	
LD SP, HL	SP ← HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 001	6	
LD SP, IX	SP ← IX	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 001	10	
LD SP, IY	SP ← IY	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 001	10	
PUSH qq	(SP-2) ← qq	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 011 101	14	
PUSH IX	(SP-2) ← IX	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 100 101	15	
PUSH IY	(SP-2) ← IY	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	15	
POP qq	qq ← (SP+1)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 000 001	10	
POP IX	IX ← (SP+1)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 101	14	
POP IY	IY ← (SP+1)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 100 101	14	
EX DE, HL	DE ↔ HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 011	4	
EX AF, AF	AF ↔ AF	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	00 001 000	4	
EXX	BC ↔ DE DE ↔ HL HL ↔ IX	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 011 001	4	Register bank and auxiliary register bank exchange
EX (SP), HL	(SP) ↔ HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 100 011	19	
EX (SP), IX	(SP) ↔ IX	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 011 101	23	
EX (SP), IY	(SP) ↔ IY	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 111 101	23	
LDI	(DE) ← HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 101	16	Load (HL) into (DE), increment the pointers and decrement the byte counter (BC)
LDIR	(DE) ← HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 000	21	If BC = 0
LDD	(DE) ← HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 101	16	If BC = 0
LDDR	(DE) ← HL	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 000	21	If BC = 0
CPI	A ← (HL)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 101	16	
CPIR	A ← (HL)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 001	21	If BC ≠ 0 and A ≠ (HL)
CPD	A ← (HL)	C: ↑ Z: ↑ P/V: ↑ S: ↑ N: ↑ H: ↑	11 101 101	16	If BC = 0 or A = (HL)