b	Index of bit within an 8 bit value for bit test, reset and set opcodes: 0 to 7 (3-bit value embeded as bbb in machine code)
nn	Byte with a range of 0x00 to 0xFF (8-bit value)
nnmm	16-bit little-endian value, e.g. JP 1234H machine code is C3 34 12
(nnmm)	This is a 16 bit address in RAM where an 8 bit value is stored
(Reg)	This is a 16 bit register pair (e.g. HL, BC etc) that points to where in RAM an 8 bit value is stored
dd	8-bit 2's complement displacement (offset) Positive = 0-7F, 80-FF = Negative

r/s/p/q
X/Y

Register A, B, C, D, E, H or L (3 bit value embedded as rrr in opcode)

rrr	r	sss	s	ppp	p	qqq	q	xx	x	yy	y
111	A	111	A	111	A	111	A	00	BC	00	BC
000	B	000	B	000	B	000	B	01	DE	01	DE
001	C	001	C	001	C	001	C	10	HL	10	HL
002	D	002	D	002	D	002	D	11	SP	11	AF
011	E	011	E	011	E	011	E				
100	H	100	H	100	IXh	100	IYh				
101	L	101	L	101	IXl	101	IYl				

Other registers

IR	Register pair (Below)
I	Interrupt vector (Not part of IX or IY)
R	Refresh counter
IX	Index X register pair
IY	Index Y register pair

Function Operators

?	Compare without modification
<>	Exchange contents
[BxC]	Carry from bit x
[BxB]	Borrow from bit x
[OF]	Overflow
[Neg]	Negative
[0]	Result was 0x00
[PE]	Parity is even

Flags

7	S	Sign	1=MSB of A was 1, 0=MSB of A was 0
6	Z	Zero	1=Result was zero, 0=Result was not zero
5	X	Not used	---
4	H	Half Carry	1=Carry from bit 3 to 4 (Add) or Borrow from Bit 4 (Sub), 0=No carry or borrow
3	X	Not used	---
2	P	Parity/Overflow	1=Even number of 1s, 0=Odd number of 1s
1	N	Decimal Add/Sub	1=Subtraction, 0=Addition
0	C	Carry	1=Carry (Add) or borrow (sub) occured, 0=Neither carry not borrow occured

[Condition]Flag=1 **If condition met then flag set to 1 else cleared to 0, Other bits unchanged. FLAG? means the flag behaviour is not defined.**

0.....0	8 bit pattern with embedded register and bit values
Tstates	Number of clock cycles to execute this opcode, Time in uS is T x (1/ClockMHz): T4 at 4MHz = 1uS execution time

Opcode	Param	Function	Machine Code	Size	T	Flags	Notes
LOAD AND EXCHANGE							
LD	(BC),A	(BC) = A	02	1	7	None	
LD	(DE),A	(DE) = A	12	1	7	None	
LD	(HL),nn	(HL) = nn	36 nn	2	10	None	
LD	(HL),r	(HL) = r	01110rrr	1	7	None	
LD	(IX+dd),nn	(IX+dd) = nn	DD 36 dd nn	4	19	None	
LD	(IX+dd),r	(IX+dd) = r	DD 01110rrr dd	3	19	None	
LD	(IY+dd),nn	(IY+dd) = nn	FD 36 dd nn	4	19	None	
LD	(IY+dd),r	(IY+dd) = r	FD 01110rrr dd	3	19	None	
LD	(nnmm),A	(nnmm) = A	32 mm nn	3	13	None	
LD	(nnmm),BC	(nnmm+1)=B,(nnmm)=C	ED 43 mm nn	4	20	None	
LD	(nnmm),DE	(nnmm+1)=D,(nnmm)=E	ED 53 mm nn	4	20	None	
LD	(nnmm),HL	(nnmm+1)=H,(nnmm)=L	22 mm nn	3	16	None	
LD	(nnmm),IX	(nnmm+1)=I,(nnmm)=X	DD 22 mm nn	4	20	None	
LD	(nnmm),IY	(nnmm+1)=I,(nnmm)=Y	FD 22 mm nn	4	20	None	
LD	(nnmm),SP	(nnmm+1)=SPH,(nnmm)=SPL	ED 73 mm nn	4	20	None	
LD	A,(BC)	A = (BC)	0A	1	7	None	
LD	A,(DE)	A = (DE)	1A	1	7	None	
LD	A,(HL)	A = (HL)	7E	1	7	None	
LD	A,(IX+dd)	A = (IX+dd)	DD 7E dd	3	19	None	
LD	A,(IY+dd)	A = (IY+dd)	FD 7E dd	3	19	None	
LD	A,(nnmm)	A = (nnmm)	3A mm nn	3	13	None	
LD	A,nn	A = nn	3E nn	2	7	None	
LD	A,r	A = r	01111rrr	1	4	None	
LD	A,IXp	A = p	DD 01111ppp	2	8	None	
LD	A,IYq	A = q	FD 01111qqq	2	8	None	
LD	A,I	A = I	ED 57	2	9	[Neg]S1,[0]Z1,H0,N0,P=IFF2	P0 if interrupt during execution
LD	A,R	A = R	ED 5F	2	9	[Neg]S1,[0]Z1,H0,N0,P=IFF2	P0 if interrupt during execution
LD	I,A	I = A	ED 47	2	9	None	
LD	R,A	R = A	ED 4F	2	9	None	
LD	B,(HL)	B = (HL)	46	1	7	None	
LD	B,(IX+dd)	B = (IX+dd)	DD 46 dd	3	19	None	
LD	B,(IY+dd)	B = (IY+dd)	FD 46 dd	3	19	None	
LD	B,nn	B = nn	06 nn	2	7	None	
LD	B,r	B = r	01000rrr	1	4	None	
LD	B,IXp	B = p	DD 01000ppp	2	8	None	

LD	B,IYq	B = q	FD 01000qqq	2	8	None	
LD	C,(HL)	C = (HL)	4E	1	7	None	
LD	C,(IX+dd)	C = (IX+dd)	DD 4E dd	3	19	None	
LD	C,(IY+dd)	C = (IY+dd)	FD 4E dd	3	19	None	
LD	C,nn	C = nn	0E nn	2	7	None	
LD	C,r	C = r	01001rrr	1	4	None	
LD	C,IXp	C = p	DD 01001ppp	2	8	None	
LD	C,IYq	C = q	FD 01001qqq	2	8	None	
LD	BC,(nnmm)	B=(nnmm+1),C=(nnmm)	ED 4B mm nn	4	20	None	
LD	BC,nnmm	BC = nnmm	01 mm nn	3	10	None	
LD	D,(HL)	D = (HL)	56	1	7	None	
LD	D,(IX+dd)	D = (IX+dd)	DD 56 dd	3	19	None	
LD	D,(IY+dd)	D = (IY+dd)	FD 56 dd	3	19	None	
LD	D,nn	D = nn	16 nn	2	7	None	
LD	D,r	D = r	01010rrr	1	4	None	
LD	D,IXp	D = p	DD 01010ppp	2	8	None	
LD	D,IYq	D = q	FD 01010qqq	2	8	None	
LD	E,(HL)	E = (HL)	5E	1	7	None	
LD	E,(IX+dd)	E = (IX+dd)	DD 5E dd	3	19	None	
LD	E,(IY+dd)	E = (IY+dd)	FD 5E dd	3	19	None	
LD	E,nn	E = nn	1E nn	2	7	None	
LD	E,r	E = r	01011rrr	1	4	None	
LD	E,IXp	E = p	DD 01011ppp	2	8	None	
LD	E,IYq	E = q	FD 01011qqq	2	8	None	
LD	DE,(nnmm)	D=(nnmm+1),E=(nnmm)	ED 5B mm nn	4	20	None	
LD	DE,nnmm	DE = nnmm	11 mm nn	3	10	None	
LD	H,(HL)	H = (HL)	66	1	7	None	
LD	H,(IX+dd)	H = (IX+dd)	DD 66 dd	3	19	None	
LD	H,(IY+dd)	H = (IY+dd)	FD 66 dd	3	19	None	
LD	H,nn	H = nn	26 nn	2	7	None	
LD	H,r	H = r	01100rrr	1	4	None	
LD	L,(HL)	L = (HL)	6E	1	7	None	
LD	L,(IX+dd)	L = (IX+dd)	DD 6E dd	3	19	None	
LD	L,(IY+dd)	L = (IY+dd)	FD 6E dd	3	19	None	
LD	L,nn	L = nn	2E nn	2	7	None	
LD	L,r	L = r	01101rrr	1	4	None	
LD	HL,(nnmm)	H=(nnmm+1),L=(nnmm)	2A mm nn	3	16	None	
LD	HL,nnmm	HL = nnmm	21 mm nn	3	10	None	
LD	IX,(nnmm)	I=(nnmm+1),X=(nnmm)	DD 2A mm nn	4	20	None	
LD	IX,nnmm	IX = nnmm	DD 21 mm nn	4	14	None	
LD	IXh,nn	I = nn	DD 26 nn	3	11	None	
LD	IXh,p	I = p	DD 01100ppp	2	8	None	
LD	IXl,nn	X = nn	DD 2E nn	3	11	None	
LD	IXl,p	X = p	DD 01101ppp	2	8	None	
LD	IY,(nnmm)	I=(nnmm+1),Y=(nnmm)	FD 2A mm nn	4	20	None	
LD	IY,nnmm	IY = nnmm	FD 21 mm nn	4	14	None	
LD	IYh,nn	IYh = nn	FD 26 nn	3	11	None	
LD	IYh,q	IYh = q	FD 01100qqq	2	8	None	
LD	IYl,nn	IYL = nn	FD 2E nn	3	11	None	
LD	IYl,q	IYL = q	FD 01101qqq	2	8	None	
LD	SP,(nnmm)	SPH=(nnmm+1),SPL=(nnmm)	ED 7B mm nn	4	20	None	
LD	SP,HL	SP = HL	F9	1	6	None	
LD	SP,IX	SP = IX	DD F9	2	10	None	
LD	SP,IY	SP = IY	FD F9	2	10	None	
LD	SP,nnmm	SP = nnmm	31 mm nn	3	10	None	
LD	(nnmm),x	nnmm = x	ED 01xx0011 mm nn	4	20	None	General form of LD
LD	r,nn	r = nn	00rrr110 nn	2	7	None	
LD	r,s	r = s	01rrrsss	1	4	None	
LD	r,(HL)	r = (HL)	01rrr110	1	7	None	
LD	r,(IX+dd)	r = (IX+dd)	DD 01rrr110 dd	3	19	None	
LD	r,(IY+dd)	r = (IY+dd)	FD 01rrr110 dd	3	19	None	
LD	x,nnmm	x = nnmm	00xx0001 mm nn	3	10	None	
LD	x,(nnmm)	X = nnmm	ED 01xx1011 mm nn	4	20	None	
LDD	---	(DE)=(HL),DE--,HL--,BC--	ED A8	2	16	[BC-1<>0]P1,H0,N0	
LDDR	---	(DE)=(HL),DE--,HL--,BC--	ED B8	2	21/16	[BC-1<>0]P1,H0,N0	Loop til BC=0: [BC<>0]T=21:T16
LDI	---	(DE)=(HL),DE++,HL++,BC--	ED A0	2	16	[BC-1<>0]P1,H0,N0	

LDIR	---	(DE)=(HL),DE++,HL++,BC--	ED B0	2	21/16	[BC-1<>0]P1,H0,N0	Loop til BC=0: [BC<>0]T=21:T16
EX	(SP),HL	H<>(SP+1),L<>(SP)	E3	1	19	None	
EX	(SP),IX	I<>(SP+1),X<>(SP)	DD E3	2	23	None	
EX	(SP),IY	I<>(SP+1),Y<>(SP)	FD E3	2	23	None	
EX	AF,AF'	AF<>AF'	08	1	4	None	
EX	DE,HL	DE<>HL	EB	1	4	None	
EXX	---	BC<>BC',DE<>DE',HL<>HL'	D9	1	4	None	
ADD							
ADD	A,(HL)	A = A+(HL)	86	1	7	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADD	A,(IX+dd)	A = A+(IX+dd)	DD 86 dd	3	19	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADD	A,(IY+dd)	A = A+(IY+dd)	FD 86 dd	3	19	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADD	A,nn	A = A+nn	C6 nn	2	7	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADD	A,r	A = A+r	10000rrr	1	4	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADD	A,IXp	A = A+p	DD 10000ppp	2	8	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADD	A,IYq	A = A+q	FD 10000qqq	2	8	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADD	HL,BC	HL = HL+BC	09	1	11	[B11C]H1,N0,[B15C]C1	
ADD	HL,DE	HL = HL+DE	19	1	11	[B11C]H1,N0,[B15C]C1	
ADD	HL,HL	HL = HL+HL	29	1	11	[B11C]H1,N0,[B15C]C1	
ADD	HL,SP	HL = HL+SP	39	1	11	[B11C]H1,N0,[B15C]C1	
ADD	IX,BC	IX = IX+BC	DD 09	2	15	[B11C]H1,N0,[B15C]C1	
ADD	IX,DE	IX = IX+DE	DD 19	2	15	[B11C]H1,N0,[B15C]C1	
ADD	IX,IX	IX = IX+IX	DD 29	2	15	[B11C]H1,N0,[B15C]C1	
ADD	IX,SP	IX = IX+SP	DD 39	2	15	[B11C]H1,N0,[B15C]C1	
ADD	IY,BC	IY = IY+BC	FD 09	2	15	[B11C]H1,N0,[B15C]C1	
ADD	IY,DE	IY = IY+DE	FD 19	2	15	[B11C]H1,N0,[B15C]C1	
ADD	IY,IY	IY = IY+IY	FD 29	2	15	[B11C]H1,N0,[B15C]C1	
ADD	IY,SP	IY = IY+SP	FD 39	2	15	[B11C]H1,N0,[B15C]C1	
ADC	A,(HL)	A = A+(HL)+C	8E	1	7	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADC	A,(IX+dd)	A = A+(IX+dd)+C	DD 8E dd	3	19	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADC	A,(IY+dd)	A = A+(IY+dd)+C	FD 8E dd	3	19	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADC	A,nn	A = A+nn+C	CE nn	2	7	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADC	A,r	A = A+r+C	10001rrr	1	4	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADC	A,IXp	A = A+p+C	DD 10001ppp	2	8	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADC	A,IYq	A = A+q+C	FD 10001qqq	2	8	[Neg]S1,[0]Z1,[B3C]H1,[OF]P1,N0,[B7C]C1	
ADC	HL,BC	HL = HL+BC+C	ED 4A	2	15	[Neg]S1,[0]Z1,[B11C]H1,[OF]P1,N0,[B15C]C1	
ADC	HL,DE	HL = HL+DE+C	ED 5A	2	15	[Neg]S1,[0]Z1,[B11C]H1,[OF]P1,N0,[B15C]C1	
ADC	HL,HL	HL = HL+HL+C	ED 6A	2	15	[Neg]S1,[0]Z1,[B11C]H1,[OF]P1,N0,[B15C]C1	
ADC	HL,SP	HL = HL+SP+C	ED 7A	2	15	[Neg]S1,[0]Z1,[B11C]H1,[OF]P1,N0,[B15C]C1	
SUBTRACT							
SUB	(HL)	A = A-(HL)	96	1	7	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SUB	(IX+dd)	A = A-(IX+dd)	DD 96 dd	3	19	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SUB	(IY+dd)	A = A-(IY+dd)	FD 96 dd	3	19	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SUB	nn	A = A-nn	D6 nn	2	7	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SUB	r	A = A-r	10010rrr	1	4	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SUB	IXp	A = A-p	DD 10010ppp	2	8	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SUB	IYp	A = A-q	FD 10010ppp	2	8	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SBC	A,(HL)	A = A-(HL)-C	9E	1	7	[Neg]S1,[0]Z1,[B3B]H1,[OF]P1,N0,[B7B]C1	
SBC	A,(IX+dd)	A = A-(IX+dd)-C	DD 9E dd	3	19	[Neg]S1,[0]Z1,[B4B]H1,[OF]P1,N0,[B7B]C1	
SBC	A,(IY+dd)	A = A-(IY+dd)-C	FD 9E dd	3	19	[Neg]S1,[0]Z1,[B4B]H1,[OF]P1,N0,[B7B]C1	
SBC	A,nn	A = A-nn-C	DE nn	2	7	[Neg]S1,[0]Z1,[B4B]H1,[OF]P1,N0,[B7B]C1	
SBC	A,r	A = A-r-C	10011rrr	1	4	[Neg]S1,[0]Z1,[B4B]H1,[OF]P1,N0,[B7B]C1	
SBC	A,IXp	A = A-p-C	DD 10011ppp	2	8	[Neg]S1,[0]Z1,[B4B]H1,[OF]P1,N0,[B7B]C1	
SBC	A,IYq	A = A-q-C	FD 10011qqq	2	8	[Neg]S1,[0]Z1,[B4B]H1,[OF]P1,N0,[B7B]C1	
SBC	HL,BC	HL = HL-BC-C	ED 42	2	15	[Neg]S1,[0]Z1,[B12B]H1,[OF]P1,N1,[B15B]C1	
SBC	HL,DE	HL = HL-DE-C	ED 52	2	15	[Neg]S1,[0]Z1,[B12B]H1,[OF]P1,N1,[B15B]C1	
SBC	HL,HL	HL = HL-HL-C	ED 62	2	15	[Neg]S1,[0]Z1,[B12B]H1,[OF]P1,N1,[B15B]C1	
SBC	HL,SP	HL = HL-SP-C	ED 72	2	15	[Neg]S1,[0]Z1,[B12B]H1,[OF]P1,N1,[B15B]C1	
AND/OR/XOR							
AND	(HL)	A = A AND (HL)	A6	1	7	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
AND	(IX+dd)	A = A AND (IX+dd)	DD A6 dd	3	19	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
AND	(IY+dd)	A = A AND (IY+dd)	FD A6 dd	3	19	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
AND	nn	A = A AND nn	E6 nnn	2	7	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
AND	r	A = A AND r	10100rrr	1	4	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
AND	IXp	A = A AND p	DD 10100ppp	2	8	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	

AND	IYq	A = A AND q	FD 10100qqq	2	8	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
OR	(HL)	A = A OR (HL)	B6	1	7	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
OR	(IX+dd)	A = A OR (IX+dd)	DD B6 dd	3	19	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
OR	(IY+dd)	A = A OR (IY+dd)	FD B6 dd	3	19	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
OR	nn	A = A OR nn	F6 nn	2	7	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
OR	r	A = A OR r	10110rrr	1	4	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
OR	IXp	A = A OR p	DD 10110ppp	2	8	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
OR	IYq	A = A OR q	FD 10110qqq	2	8	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
XOR	(HL)	A = A XOR (HL)	AE	1	7	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
XOR	(IX+dd)	A = A XOR (IX+dd)	DD AE dd	3	19	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
XOR	(IY+dd)	A = A XOR (IY+dd)	FD AE dd	3	19	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
XOR	nn	A = A XOR nn	EE nn	2	7	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
XOR	r	A = A XOR r	10101rrr	1	4	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
XOR	IXp	A = A XOR p	DD 10101ppp	2	8	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
XOR	IYq	A = A XOR q	FD 10101qqq	2	8	[Neg]S1,[0]Z1,H1,[OF]P1,N0,C0	
COMPARE							
CP	(HL)	A?(HL)	BE	1	7	[Neg]S1,[Equ]Z1,[B4B]H1,[OF]P1,N1,[B7B]C1	Neither value modified for all compares
CP	(IX+dd)	A?(IX+dd)	DD BE dd	3	19	[Neg]S1,[Equ]Z1,[B4B]H1,[OF]P1,N1,[B7B]C1	
CP	(IY+dd)	A?(IY+dd)	FD BE dd	3	19	[Neg]S1,[Equ]Z1,[B4B]H1,[OF]P1,N1,[B7B]C1	
CP	nn	A?nn	FE nn	2	7	[Neg]S1,[Equ]Z1,[B4B]H1,[OF]P1,N1,[B7B]C1	
CP	r	A?r	10111rrr	1	4	[Neg]S1,[Equ]Z1,[B4B]H1,[OF]P1,N1,[B7B]C1	
CP	IXp	A?p	DD 10111ppp	2	8	[Neg]S1,[Equ]Z1,[B4B]H1,[OF]P1,N1,[B7B]C1	
CP	IYq	A?q	FD 10111qqq	2	8	[Neg]S1,[Equ]Z1,[B4B]H1,[OF]P1,N1,[B7B]C1	
CPD	---	A?(HL),HL--,BC--	ED A9	2	16	[Neg]S1,[Equ]Z1,[B4B]H1,[B<>0]P1,N1	
CPDR	---	A?(HL),HL--,BC--	ED B9	2	21/16	[Neg]S1,[Equ]Z1,[B4B]H1,[B<>0]P1,N1	Loop til A=(HL) or BC=0: [BC<>0]T21:16
CPI	---	A?(HL),HL++,BC--	ED A1	2	16	[Neg]S1,[Equ]Z1,[B4B]H1,[B<>0]P1,N1	
CPIR	---	A?(HL),HL++,BC--	ED B1	2	21/16	[Neg]S1,[Equ]Z1,[B4B]H1,[B<>0]P1,N1	Loop til A=(HL) or BC=0: [BC<>0]T21:16
DECREMENT/INCREMENT							
DEC	(HL)	(HL) = (HL)-1	35	1	11	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	(IX+dd)	(IX+dd) = (IX+dd)-1	DD 35 dd	3	23	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	(IY+dd)	(IY+dd) = (IY+dd)-1	FD 35 dd	3	23	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	A	A = A-1	3D	1	4	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	B	B = B-1	05	1	4	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	C	C = C-1	0D	1	4	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	D	D = D-1	15	1	4	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	E	E = E-1	1D	1	4	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	H	H = H-1	25	1	4	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	L	L = L-1	2D	1	4	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	IXp	p = p-1	DD 00ppp101	2	8	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	IYq	q = q-1	FD 00qqq101	2	8	[Neg]S1,[0]Z1,[B4B]H1,[0x7F]P1,N1	
DEC	BC	BC = BC-1	0B	1	6	None	
DEC	DE	DE = DE-1	1B	1	6	None	
DEC	HL	HL = HL-1	2B	1	6	None	
DEC	IX	IX = IX-1	DD 2B	2	10	None	
DEC	IY	IY = IY-1	FD 2B	2	10	None	
DEC	SP	SP = SP-1	3B	1	6	None	
INC	(HL)	(HL) =(HL)+1	34	1	11	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	(IX+dd)	(IX+dd) = (IX+dd)+1	DD 34 dd	3	23	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	(IY+dd)	(IY+dd) = (IY+dd)+1	FD 34 dd	3	23	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	A	A = A+1	3C	1	4	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	B	B = B+1	04	1	4	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	C	C = C+1	0C	1	4	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	D	D = D+1	14	1	4	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	E	E = E+1	1C	1	4	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	H	H = H+1	24	1	4	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	L	L = L+1	2C	1	4	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	IXp	p = p+1	DD 00ppp100	2	8	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	IYq	q = q+1	FD 00qqq100	2	8	[Neg]S1,[0]Z1,[B3C]H1,[0x80]P1,N0	
INC	BC	BC = BC+1	03	1	6	None	
INC	DE	DE = DE+1	13	1	6	None	
INC	HL	HL = HL+1	23	1	6	None	
INC	IX	IX = IX+1	DD 23	2	10	None	
INC	IY	IY = IY+1	FD 23	2	10	None	
INC	SP	SP = SP+1	33	1	6	None	

ROTATE AND SHIFT

RL	(HL)	C<[7 < 0]<C	CB 16	2	15	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	Bx*=Value of bit prior to execution
RL	(IX+dd)	C<[7 < 0]<C	DD CB dd 16	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
RL	(IY+dd)	C<[7 < 0]<C	FD CB dd 16	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
RL	r	C<[7 < 0]<C	CB 00010rrr	2	8	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
RLA	---	C<[7 < 0]<C	17	1	4	H0,N0,C=B7*	
RLC	(HL)	C<[7 < 0]<[7]	CB 06	2	15	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
RLC	(IX+dd)	C<[7 < 0]<[7]	DD CB dd 06	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
RLC	(IY+dd)	C<[7 < 0]<[7]	FD CB dd 06	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
RLC	r	C<[7 < 0]<[7]	CB 00000rrr	2	8	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
RLCA	---	C<[7 < 0]<[7]	07	1	4	H0,N0,C=B7	
RLD	---	A[3:0]<[7:4]<[3:0]<A[3:0]	ED 6F	2	18	[Neg]S1,[0]Z1,H0,[PE]P1,N0	(HL) used, A[7:4] no change
RR	(HL)	C>[7 > 0]>C	CB 1E	2	15	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	Bx*=Value of bit prior to execution
RR	(IX+dd)	C>[7 > 0]>C	DD CB dd 1E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
RR	(IY+dd)	C>[7 > 0]>C	FD CB dd 1E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
RR	r	C>[7 > 0]>C	CB 00011rrr	2	8	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
RRA	---	C>[7 > 0]>C	1F	1	4	H0,N0,C=B0	
RRC	(HL)	[0]>[7 > 0]>C	CB 0E	2	15	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
RRC	(IX+dd)	[0]>[7 > 0]>C	DD CB dd 0E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
RRC	(IY+dd)	[0]>[7 > 0]>C	FD CB dd 0E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
RRC	r	[0]>[7 > 0]>C	CB 00001rrr	2	8	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
RRCA	---	[0]>[7 > 0]>C	0F	1	4	H0,N0,C=B0	
RRD	---	A[3:0]>[7:4]>[3:0]>A[3:0]	ED 67	2	18	[Neg]S1,[0]Z1,H0,[PE]P1,N0	(HL) used, A[7:4] no change
SLA	(HL)	C<[7 < 0]<0	CB 26	2	15	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	Bx*=Value of bit prior to execution
SLA	(IX+dd)	C<[7 < 0]<0	DD CB dd 26	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
SLA	(IY+dd)	C<[7 < 0]<0	FD CB dd 26	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
SLA	r	C<[7 < 0]<0	CB 00100rrr	2	8	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B7*	
SRA	(HL)	[7]>[7 > 0]>C	CB 2E	2	15	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	Bx*=Value of bit prior to execution
SRA	(IX+dd)	[7]>[7 > 0]>C	DD CB dd 2E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	Bit 7 is the bit shifted in
SRA	(IY+dd)	[7]>[7 > 0]>C	FD CB dd 2E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
SRA	r	[7]>[7 > 0]>C	CB 00101rrr	2	8	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
SRL	(HL)	0>[7 > 0]>C	CB 3E	2	15	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	Bx*=Value of bit prior to execution
SRL	(IX+dd)	0>[7 > 0]>C	DD CB dd 3E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
SRL	(IY+dd)	0>[7 > 0]>C	FD CB dd 3E	4	23	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	
SRL	r	0>[7 > 0]>C	CB 00111rrr	2	8	[Neg]S1,[0]Z1,[PE]P1,H0,N0,C=B0*	

BIT TEST/RESET/SET

BIT	b,(HL)	Z = Bit b of (HL)	CB 01bbb110	2	12	S?,[0]Z1,H1,P?,N0	Bit 7 is MSB, 0 = LSB
BIT	b,(IX+dd)	Z = Bit b of (IX+dd)	DD CB dd 01bbb110	4	20	S?,[0]Z1,H1,P?,N0	b 7 6 5 4 3 2 1 0
BIT	b,(IY+dd)	Z = Bit b of (IY+dd)	FD CB dd 01bbb110	4	20	S?,[0]Z1,H1,P?,N0	bbb 111 110 101 100 011 010 001 000
BIT	b,r	Z = Bit b of r	CB 01bbbrrr	2	8	S?,[0]Z1,H1,P?,N0	
RES	b,(HL)	Bit b of (HL) = 0	CB 10bbb110	2	15	None	
RES	b,(IX+dd)	Bit b of (HL) = 0	DD CB dd 10bbb110	4	23	None	
RES	b,(IY+dd)	Bit b of (HL) = 0	FD CB dd 10bbb110	4	23	None	
RES	b,r	Bit b of r = 0	CB 10bbbrrr	2	8	None	
SET	b,(HL)	Bit b of (HL) = 1	CB 11bbb110	2	15	None	
SET	b,(IX+dd)	Bit b of (HL) = 1	DD CB dd 11bbb110	4	23	None	
SET	b,(IY+dd)	Bit b of (HL) = 1	FD CB dd 11bbb110	4	23	None	
SET	b,r	Bit b of r = 1	CB 11bbbrrr	2	8	None	

COMPLEMENT/NEGATE/DECIMAL ADJUST/CARRY FLAG/NOP

CPL	---	A = A XOR 0xFF	2F	1	4	H1,N1	Complement
NEG	---	A = 0-A	ED 44	2	8	[Neg]S1,[0]Z1,[B4B]H1,[*]P1,N1[**]C1	*=0x80,**<>0x00 before execution
DAA	---	(See user manual)	27	1	4	[Neg]S1,[0]Z1,[PE]P1,H*,C*	For H* and C* see Z80 User manual
CCF		C = !C (Complement)	3F	1	4	H*C,N0,[0]C1,[1]C0	*C = Value of carry before execution
SCF	---	C = 1	37	1	4	H0,N0,C1	
NOP	---	(No operation)	00	1	4	None	

INPUT/OUTPUT

IN	A,(nn)	A=(nn)	DB nn	2	11	None	I/O port reads
IN	A,(C)	A=(C)	ED 78	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	
IN	F,(C)	F=(C)	ED 70	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	
IN	B,(C)	B=(C)	ED 40	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	
IN	C,(C)	C=(C)	ED 48	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	
IN	D,(C)	D=(C)	ED 50	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	
IN	E,(C)	E=(E)	ED 58	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	

IN	H,(C)	H=(C)	ED 60	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	
IN	L,(C)	L=(C)	ED 68	2	12	[Neg]S1,[0]Z1,H0,[PE]P1,N0	
IND	---	(HL)=(C),B--,HL--	ED AA	2	16	S?,[B=0]Z1,H?,P?,N1	I/O port at (C) read into memory=(HL)
INDR	---	(HL)=(C),B--,HL--	ED BA	2	21/16	S?,Z1,H?,P?,N1 (Z1 after B decrements to 0)	B=0 = 256 cycles [B=0]T16:T21
INI	---	(HL)=(C),B--,HL++	ED A2	2	16	S?,[B=0]Z1,H?,P?,N1	I/O port at (C) read into memory=(HL)
INIR	---	(HL)=(C),B--,HL++	ED B2	2	21/16	S?,Z1,H?,P?,N1 (Z1 after B decrements to 0)	B=0 = 256 cycles [B=0]T16:T21
OUT	(nn),A	(nn) = A	D3 nn	2	11	None	I/O port writes
OUT	(C),A	(C) = A	ED 79	2	12	None	
OUT	(C),B	(C) = B	ED 41	2	12	None	
OUT	(C),C	(C) = C	ED 49	2	12	None	
OUT	(C),D	(C) = D	ED 51	2	12	None	
OUT	(C),E	(C) = E	ED 59	2	12	None	
OUT	(C),H	(C) = H	ED 61	2	12	None	
OUT	(C),L	(C) = L	ED 69	2	12	None	
OUTD	---	(C)=HL,B--,HL--	ED AB	2	16	S?,[B=0]Z1,H?,P?,N1	I/O port at (C) write from memory=(HL)
OTDR	---	(C)=HL,B--,HL--	ED BB	2	21/16	S?,Z1,H?,P?,N1 (Z1 after B decrements to 0)	B=0 = 256 cycles [B=0]T16:T21
OUTI	---	(C)=HL,B--,HL++	ED A3	2	16	S?,[B=0]Z1,H?,P?,N1	I/O port at (C) write from memory=(HL)
OTIR	---	(C)=HL,B--,HL++	ED B3	2	21/16	S?,Z1,H?,P?,N1 (Z1 after B decrements to 0)	B=0 = 256 cycles [B=0]T16:T21
POP AND PUSH							
POP	AF		F1	1	10	None	
POP	BC		C1	1	10	None	
POP	DE		D1	1	10	None	
POP	HL		E1	1	10	None	
POP	IX		DD E1	2	14	None	
POP	IY		FD E1	2	14	None	
POP	y	SP-2=yL,SP-1=yH	11yy0001	1	10	None	General form of POP,AF etc
PUSH	AF		F5	1	11	None	
PUSH	BC		C5	1	11	None	
PUSH	DE		D5	1	11	None	
PUSH	HL		E5	1	11	None	
PUSH	IX		DD E5	2	15	None	
PUSH	IY		FD E5	2	15	None	
PUSH	y	SP-2=yL,SP-1=yH	11yy0101	1	11	None	General form of PUSH,AF etc
HALT AND INTERRUPTS							
HALT	---		76	1	4	None	
DI	---	IFF1 = 0, IFF2 = 0	F3	1	4	None: Disable maskable interrupts	
EI	---	IFF1 = 1, IFF2 = 1	FB	1	4	None: Enable maskable interrupts	
IM	0	(Maskable interrupt M0)	ED 46	2	8	None: 8080A mode where interrupter puts instruction on bus and Z80 executes it	
IM	1	(Maskable interrupt M1)	ED 56	2	8	None: Restart at 0x0038	
IM	2	(Maskable interrupt M2)	ED 5E	2	8	None: I register plus interrupter bits (n=nnnnnnn0) forms a 16 bit ISR jump address	
PROGRAM CONTROL							
RST	0x00	(SP-1)=PCH, (SP-2)=PCL	C7	1	11	None	
RST	0x08	PCH=0, PCL=0xNN	CF	1	11	None	
RST	0x10		D7	1	11	None	
RST	0x18		DF	1	11	None	
RST	0x20		E7	1	11	None	
RST	0x28		EF	1	11	None	
RST	0x30		F7	1	11	None	
RST	0x38		FF	1	11	None	
JP	nnmm	PC=nnmm	C3 mm nn	3	10	None	
JP	(HL)	PC=HL	E9	1	4	None	
JP	(IX)	PC=IX	DD E9	2	8	None	
JP	(IY)	PC=IY	FD E9	2	8	None	
JP	C,nnmm	If C=1, PC=nnmm:PC=PC+3	DA mm nn	3	10	None	
JP	NC,nnmm	If C=0, PC=nnmm:PC=PC+3	D2 mm nn	3	10	None	
JP	M,nnmm	If S=1, PC=nnmm:PC=PC+3	FA mm nn	3	10	None	
JP	P,nnmm	If S=0, PC=nnmm:PC=PC+3	F2 mm nn	3	10	None	
JP	Z,nnmm	If Z=1, PC=nnmm:PC=PC+3	CA mm nn	3	10	None	
JP	NZ,nnmm	If Z=0, PC=nnmm:PC=PC+3	C2 mm nn	3	10	None	
JP	PE,nnmm	If P=1, PC=nnmm:PC=PC+3	EA mm nn	3	10	None	
JP	PO,nnmm	If P=0, PC=nnmm:PC=PC+3	E2 mm nn	3	10	None	
JR	dd	PC=PC+dd	18 dd	2	12	None	dd is a signed 8 bit value
JR	C,dd	If C=1, PC=PC+dd:PC=PC+3	38 dd	2	12/7	None	The valid range is -126 to +129 bytes
JR	NC,dd	If C=0, PC=PC+dd:PC=PC+3	30 dd	2	12/7	None	(Adjusted for this 2 byte instruction)

JR	Z,dd	If Z=1, PC=PC+dd:PC=PC+3	28 dd	2	12/7	None	
JR	NZ,dd	If Z=0, PC=PC+dd:PC=PC+3	20 dd	2	12/7	None	
DJNZ	dd	B--,[0]PC=PC+3:PC=PC+dd	10 dd	2	13/8	None	
CALL	nnmm	SP-1=PCH,SP-2=PCL,PC=nnmm	CD mm nn	3	17	None	General call
CALL	C,nnmm	If C=1, Call nnmm	DC mm nn	3	17/10	None	Conditional calls follow general call
CALL	NC,nnmm	If C=0, Call nnmm	D4 mm nn	3	17/10	None	
CALL	M,nnmm	If S=1, Call nnmm	FC mm nn	3	17/10	None	
CALL	P,nnmm	If S=0, Call nnmm	F4 mm nn	3	17/10	None	
CALL	Z,nnmm	If Z=1, Call nnmm	CC mm nn	3	17/10	None	
CALL	NZ,nnmm	If Z=0, Call nnmm	C4 mm nn	3	17/10	None	
CALL	PE,nnmm	If P=1, Call nnmm	EC mm nn	3	17/10	None	
CALL	PO,nnmm	If P=0, Call nnmm	E4 mm nn	3	17/10	None	
RET	---	PCL=(SP),PCH=SP+1	C9	1	10	None	General return
RET	C	If C=1, Return	D8	1	11/5	None	Conditional returns follow general Ret
RET	NC	If C=0, Return	D0	1	11/5	None	
RET	M	If S=1, Return	F8	1	11/5	None	
RET	P	If S=0, Return	F0	1	11/5	None	
RET	Z	If Z=1, Return	C8	1	11/5	None	
RET	NZ	If Z=0, Return	C0	1	11/5	None	
RET	PE	If P=1, Return	E8	1	11/5	None	
RET	PO	If P=0, Return	E0	1	11/5	None	
RETI	---	Ret from maskable ISR	ED 4D	2	14	None	
RETN	---	Ret from non-maskable ISR	ED 45	2	14	None, IFF2 coppied to IFF1 to re-enable NMI	