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Z80 CPU

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CHART

Example of reading instruction set tables: ADC A,A... ADC A, - entry says to see table; table shows opcode 8F, 4 states; and flag code 'A' which is defined under 'Flag Codes'.
ADC HL,BC... 2 byte opcode is ED,4A; flag code is H, takes 15 states. CALL C, address... opcode is DC followed by 2 byte address; flag code is Z; states are described by note 5.

Instruction Set

ADC	A,—	TABLE	A	LD	(IX+d),C	DD71d	Z19
ADC	HL,BC	ED4A	H15	LD	(IX+d),D	DD72d	Z19
ADC	HL,DE	ED5A	H15	LD	(IX+d),E	DD73d	Z19
ADC	HL,HL	ED6A	H15	LD	(IX+d),H	DD74d	Z19
ADC	HL,SP	ED7A	H15	LD	(IX+d),L	DD75d	Z19
ADD	A,—	TABLE	A	LD	(IX+d),n	DD36dn	Z19
ADD	HL,BC	09	G11	LD	(IY+d),A	FD77d	Z19
ADD	HL,DE	19	G11	LD	(IY+d),B	FD70d	Z19
ADD	HL,HL	29	G11	LD	(IY+d),C	FD71d	Z19
ADD	HL,SP	39	G11	LD	(IY+d),D	FD72d	Z19
ADD	IX,BC	DD09	G15	LD	(IY+d),E	FD73d	Z19
ADD	IX,DE	DD19	G15	LD	(IY+d),H	FD74d	Z19
ADD	IX,IX	DD29	G15	LD	(IY+d),L	FD75d	Z19
ADD	IX,SP	DD39	G15	LD	(IY+d),n	FD36dn	Z19
ADD	IY,BC	FD09	G15	LD	(aa),A	32aa	Z13
ADD	IY,DE	FD19	G15	LD	(aa),BC	ED43aa	Z20
ADD	IY,IY	FD29	G15	LD	(aa),DE	ED53aa	Z20
ADD	IY,SP	FD39	G15	LD	(aa),HL	22aa	Z16
AND	—	TABLE	C	LD	(aa),IX	DD22aa	Z20
BIT	—	TABLE	V	LD	(aa),IY	FD22aa	Z20
CALL	aa	Caa	Z17	LD	(aa),SP	ED73aa	Z20
CALL	C,aa	CDaa	Z(5)	LD	A,(BC)	0A	Z7
CALL	M,aa	FCaa	Z(5)	LD	A,(DE)	1A	Z7
CALL	NC,aa	DAaa	Z(5)	LD	A,(aa)	3Aaa	Z13
CALL	NZ,aa	CAaa	Z(5)	LD	A,I	ED57	U9
CALL	P,aa	FAaa	Z(5)	LD	A,R	ED5F	U9
CALL	PE,aa	EAaa	Z(5)	LD	A,—	TABLE	Z
CALL	PO,aa	EAaa	Z(5)	LD	B,—	TABLE	Z
CALL	Z,aa	CAaa	Z(5)	LD	BC,(aa)	ED4Baa	Z20
CCF	3F	G4	C—	LD	C,—	TABLE	Z
CP	—	TABLE	B	LD	D,—	TABLE	Z
CPD	EDA9	T(1)	LD	DE,(aa)	ED5Baa	Z20	
CPDR	EDB9	T(1)	LD	DE,aa	11aa	Z10	
CPI	EDA1	T16	LD	E,—	TABLE	Z	
CPIR	EDB1	T(1)	LD	H,—	TABLE	Z	
CPL	2F	M4	LD	HL,(aa)	2Aaa	Z16	
DAA	27	F4	LD	HL,aa	21aa	Z16	
DEC	(HL)	35	F11	LD	IA	ED47	Z9
DEC	(IX+d)	DD35d	F23	LD	IX,(aa)	DD21aa	Z14
DEC	(IY+d)	DD35d	F23	LD	IX,aa	DD21aa	Z14
DEC	A	05	F4	LD	IY,(aa)	FD2Aaa	Z20
DEC	BC	0B	Z6	LD	IY,aa	FD21aa	Z14
DEC	C	0D	F4	LD	L,—	TABLE	Z
DEC	D	15	F4	LD	R,A	ED4F	Z9
DEC	DE	1B	Z6	LD	SP,(aa)	ED7Baa	Z20
DEC	E	1D	F4	LD	SP,HL	F9	Z6
DEC	H	25	F4	LD	SP,IX	DDF9	Z10
DEC	HL	2B	Z6	LD	SP,IY	DDF9	Z10
DEC	IX	DD2B	Z10	LD	SP,aa	31aa	Z10
DEC	IY	DD2B	Z10	LDD	EDA8	R16	
DEC	L	2D	F4	LDDR	EDB8	S(1)	
DEC	SP	3B	Z6	LDI	EDB8	R16	
DI	F3	Z4	LDIR	EDB0	S(1)		
DJNZ	d	10d	NEG	ED44	B8		
EI	—	TABLE	OR	00	Z4		
EX	(SP),HL	E3	OTDR	EDB8	Q(1)		
EX	(SP),IX	DDE3	OTIR	EDB3	Q(1)		
EX	AF,AF	0B	OUT	(C),A	ED79	Z12	
EX	DE,HL	0B	OUT	(C),B	ED41	Z12	
EXX	—	TABLE	OUT	(C),C	ED49	Z12	
HALT	—	TABLE	OUT	(C),D	ED51	Z12	
IM	0	ED46	OUT	(C),E	ED59	Z12	
IM	1	ED56	OUT	(C),H	ED61	Z12	
IM	2	ED66	OUT	(C),L	ED69	Z12	
IN	A,(C)	ED78	OUT	(m),A	DD33	Z11	
IN	A,(n)	D6n	OUTD	—	EDAB	P16	
IN	B,(C)	ED40	OUT I	—	EDAD	P16	
IN	C,(C)	ED48	POP	AF	F1	Z10	
IN	D,(C)	ED50	POP	BC	C1	Z10	
IN	E,(C)	ED58	POP	DE	D1	Z10	
IN	H,(C)	ED60	POP	HL	E1	Z10	
IN	L,(C)	ED68	POP	IX	DDE1	Z14	
INC	(HL)	34	POP	IY	FD1E	Z14	
INC	(IX+d)	DD34d	PUSH	AF	F5	Z11	
INC	(IY+d)	FD34d	PUSH	BC	D5	Z11	
INC	A	3C	PUSH	DE	05	Z11	
INC	B	04	PUSH	HL	E5	Z11	
INC	BC	03	PUSH	IX	DDE5	Z15	
INC	C	0C	PUSH	IY	FDE5	Z15	
INC	D	14	RES	—	TABLE	Z	
INC	DE	13	RET	C	D9	Z10	
INC	E	1C	RET	M	D8	Z(4)	
INC	H	24	RET	NC	F8	Z(4)	
INC	HL	23	RET	NC	00	Z(4)	
INC	IX	DD23	RET	NZ	C0	Z14	
INC	IY	DD23	RET	P	F0	Z(4)	
INC	L	2C	RET	PE	E8	Z(4)	
INC	SP	33	RET	PO	E0	Z(4)	
IND	—	TABLE	RET	Z	C8	Z14	
INDR	—	TABLE	RETI	—	ED4D	Z14	
INI	—	TABLE	RETN	—	ED45	Z14	
INIR	—	TABLE	RLA	—	TABLE	K	
JP	(HL)	E9	RLC	—	TABLE	J4	
JP	(IX)	DDE9	RLCA	—	TABLE	J4	
JP	(IY)	FDE9	RLD	—	ED6F	L18	
JP	aa	C3aa	RR	—	TABLE	K	
JP	C,aa	DAaa	RRR	—	TABLE	K	
JP	M,aa	FAaa	RRCA	—	TABLE	K	
JP	NC,aa	D2aa	RRR	—	ED67	J18	
JP	NZ,aa	C2aa	RST	00H	C7	Z11	
JP	P,aa	F2aa	RST	08H	CF	Z11	
JP	PE,aa	EAaa	RST	10H	DF	Z11	
JP	PO,aa	E2aa	RST	18H	DF	Z11	
JP	Z,aa	CAaa	RST	20H	E7	Z11	
JR	C,d	38d	RST	28H	EF	Z11	
JR	d	18d	RST	30H	F7	Z11	
JR	NC,d	30d	RST	35H	F7	Z11	
JR	NZ,d	20d	RST	3FH	F7	Z11	
JR	Z,d	28d	SBC	A	TABLE	B	
LD	(BC),A	02	SBC	HL,BC	ED42	I15	
LD	(DE),A	12	SBC	HL,DE	ED52	I15	
LD	(HL),A	77	SBC	HL,HL	ED62	I15	
LD	(HL),B	70	SCF	HL,SP	ED72	I15	
LD	(HL),C	71	SET	—	TABLE	O4	
LD	(HL),D	72	SET	—	TABLE	K	
LD	(HL),E	73	SRA	—	TABLE	K	
LD	(HL),H	74	SRL	—	TABLE	K	
LD	(HL),L	75	SUB	—	TABLE	B	
LD	(HL),n	36n	XOR	—	TABLE	O	
LD	(IX+d),A	DD77d					
LD	(IX+d),B	DD70d					

	A	B	C	D	E	H	L	(HL)	(IX+d)	(IY+d)
BIT 0	CB,47	CB,40	CB,41	CB,42	CB,43	CB,44	CB,45	CB,46	DD,CB,d,46	FD,CB,d,46
BIT 1	CB,4F	CB,48	CB,49	CB,4A	CB,4B	CB,4C	CB,4D	CB,4E	DD,CB,d,4E	FD,CB,d,4E
BIT 2	CB,57	CB,50	CB,51	CB,52	CB,53	CB,54	CB,55	CB,56	DD,CB,d,56	FD,CB,d,56
BIT 3	CB,5F	CB,58	CB,59	CB,5A	CB,5B	CB,5C	CB,5D	CB,5E	DD,CB,d,5E	FD,CB,d,5E
BIT 4	CB,67	CB,60	CB,61	CB,62	CB,63	CB,64	CB,65	CB,66	DD,CB,d,66	FD,CB,d,66
BIT 5	CB,6F	CB,68	CB,69	CB,6A	CB,6B	CB,6C	CB,6D	CB,6E	DD,CB,d,6E	FD,CB,d,6E
BIT 6	CB,77	CB,70	CB,71	CB,72	CB,73	CB,74	CB,75	CB,76	DD,CB,d,76	FD,CB,d,76
BIT 7	CB,7F	CB,78	CB,79	CB,7A	CB,7B	CB,7C	CB,7D	CB,7E	DD,CB,d,7E	FD,CB,d,7E

	A	B	C	D	E	H	L	(HL)	(IX+d)	(IY+d)
RES 0	CB,87	CB,80	CB,81	CB,82	CB,83	CB,84	CB,85	CB,86	DD,CB,d,86	FD,CB,d,86
RES 1	CB,8F	CB,88	CB,89	CB,8A	CB,8B	CB,8C	CB,8D	CB,8E	DD,CB,d,8E	FD,CB,d,8E
RES 2	CB,97	CB,90	CB,91	CB,92	CB,93	CB,94	CB,95	CB,96	DD,CB,d,96	FD,CB,d,96
RES 3	CB,9F	CB,98	CB,99	CB,9A	CB,9B	CB,9C	CB,9D	CB,9E	DD,CB,d,9E	FD,CB,d,9E
RES 4	CB,A7	CB,A0	CB,A1	CB,A2	CB,A3	CB,A4	CB,A5	CB,A6	DD,CB,d,A6	FD,CB,d,A6
RES 5	CB,AF	CB,A8	CB,A9	CB,AA	CB,AB	CB,AC	CB,AD	CB,AE	DD,CB,d,AE	FD,CB,d,AE
RES 6	CB,B7	CB,B0	CB,B1	CB,B2	CB,B3	CB,B4	CB,B5	CB,B6	DD,CB,d,B6	FD,CB,d,B6
RES 7	CB,BF	CB,B8	CB,B9	CB,BA	CB,BB	CB,BC	CB,BD	CB,BE	DD,CB,d,BE	FD,CB,d,BE
SET 0	CB,C7	CB,C0	CB,C1	CB,C2	CB,C3	CB,C4	CB,C5	CB,C6	DD,CB,d,C6	FD,CB,d,C6
SET 1	CB,CF	CB,C8	CB,C9	CB,CA	CB,CB	CB,CC	CB,CD	CB,CE	DD,CB,d,CE	FD,CB,d,CE
SET 2	CB,D7	CB,D0	CB,D1	CB,D2	CB,D3	CB,D4	CB,D5	CB,D6	DD,CB,d,D6	FD,CB,d,D6
SET 3	CB,DF	CB,D8	CB,D9	CB,DA	CB,DB	CB,DC	CB,DD	CB,DE	DD,CB,d,DE	FD,CB,d,DE
SET 4	CB,E7	CB,E0	CB,E1	CB,E2	CB,E3	CB,E4	CB,E5	CB,E6	DD,CB,d,E6	FD,CB,d,E6
SET 5	CB,EF	CB,E8	CB,E9	CB,EA	CB,EB	CB,EC	CB,ED	CB,EE	DD,CB,d,EE	FD,CB,d,EE
SET 6	CB,F7	CB,F0	CB,F1	CB,F2	CB,F3	CB,F4	CB,F5	CB,F6	DD,CB,d,F6	FD,CB,d,F6
SET 7	CB,FF	CB,F8	CB,F9	CB,FA	CB,FB	CB,FC	CB,FD	CB,FE	DD,CB,d,FE	FD,CB,d,FE

	A(8)	B	C	D	E	H	L	(HL)	(IX+d)	(IY+d)
RLC	CB,07	CB,00	CB,01	CB,02	CB,03	CB,04	CB,05	CB,06	DD,CB,d,06	FD,CB,d,06
RRC	CB,0F	CB,08	CB,09	CB,0A	CB,0B	CB,0C	CB,0D	CB,0E	DD,CB,d,0E	FD,CB,d,0E
RL	CB,17	CB,10	CB,11	CB,12	CB,13	CB,14	CB,15	CB,16	DD,CB,d,16	FD,CB,d,16
RR	CB,1F	CB,18	CB,19	CB,1A	CB,1B	CB,1C	CB,1D	CB,1E	DD,CB,d,1E	FD,CB,d,1E
SLA	CB,27	CB,20	CB,21	CB,22	CB,23	CB,24	CB,25	CB,26	DD,CB,d,26	FD,CB,d,26
SRA	CB,2F	CB,28	CB,29	CB,2A	CB,2B	CB,2C	CB,2D	CB,2E	DD,CB,d,2E	FD,CB,d,2E
SRL	CB,3F	CB,38	CB,39	CB,3A	CB,3B	CB,3C	CB,3D	CB,3E	DD,CB,d,3E	FD,CB,d,3E

Flag Codes

	C	Z	P	V	S	N	H
A	C	Z	V	S	0	H	
B	C	Z	V	S	1	H	
C	C	Z	V	S	0	0	
D	0	=	Z	P	S	0	1
E	=	=	Z	V	S	0	1
F	=	=	Z	V	S	0	H
G	=	=	=	=	=	0	U
H	C	Z	V	S	1	U	U
I	C	=	=	=	=	0	0
J	C	Z	=	=	=	0	0
K	C	Z	P	S	0	0	0
L	C	Z	P	S	0	0	H
M	=	=	=	=	=	1	1
N	=	=	=	=	=	1	0
O	1	U	U	U	U	U	U
P	U	U	U	U	U	U	U
Q	=	U	F	U	U	0	0
R	=	U	F	U	U	0	0
S	=	F	F	S	U	0	1
T	=	F	F	S	U	0	1
U	=	Z	U	U	0	1	U
V	=	Z	U	U	0	1	U
W	=	Z	P	S	0	U	
X							
Y							
Z	=	=	=	=	=	=	=