8051 Insctruction Set + Opcodes

Opcode	Bytes	Mnemonic	Operands	MC
00	1	NOP		1
01	2	AJMP	addr11	2
02	3	LJMP	addr16	2
03	1	RR	A	1
04	1	INC	A	1
05	2	INC	direct	1
06	1	INC	@R0	1
07	1	INC	@R1	1
08	1	INC	R0	1
09	1	INC	R1	1
0A	1	INC	R2	1
0B	1	INC	R3	1
0C	1	INC	R4	1
0D	1	INC	R5	1
0E	1	INC	R6	1
0F	1	INC	R7	1
10	3	JBC	bit, offset	2
11	2	ACALL	addr11	2
12	3	LCALL	addr16	2
13	1	RRC	A	1
14	1	DEC	A	1
15	2	DEC	direct	1
16	1	DEC	@R0	1
17	1	DEC	@R1	1
18	1	DEC	R0	1
19	1	DEC	R1	1
1A	1	DEC	R2	1
1B	1	DEC	R3	1
1C	1	DEC	R4	1
1D	1	DEC	R5	1
1E	1	DEC	R6	1
1F	1	DEC	R7	1
20	3	JB	bit, offset	2
21	2	AJMP	addr11	2
22	1	RET		2
23	1	RL	A	1
24	2	ADD	A, #immed	1
25	2	ADD	A, direct	1
26	1	ADD	A, @R0	1
27	1	ADD	A, @R1	1
28	1	ADD	A, R0	1
29	1	ADD	A, R1	1
2A	1	ADD	A, R2	1
2B	1	ADD	A, R3	1
2C	1	ADD	A, R4	1
2D	1	ADD	A, R5	1
2E	1	ADD	A, R6	1
2F	1	ADD	A, R7	1
30	3	JNB	bit, offset	2
31	2	ACALL	addr11	2
32	1	RETI		2
33	1	RLC	A	1
34	2	ADDC	A, #immed	1
35	2	ADDC	A, direct	1
36	1	ADDC	A, @R0	1
37	1	ADDC	A, @R1	1
38	1	ADDC	A, R0	1
39	1	ADDC	A, R1	1
3A	1	ADDC	A, R2	1
3B	1	ADDC	A, R3	1
3C	1	ADDC	A, R4	1
3D	1	ADDC	A, R5	1
3E	1	ADDC	A, R6	1
3F	1	ADDC	A, R7	1
40	2	JC	offset	2
41	2	AJMP	addr11	2
42	2	ORL	direct, A	1
43	3	ORL	direct, #immed	2
44	2	ORL	A, #immed	1
45	2	ORL	A, direct	1
46	1	ORL	A, @R0	1
47	1	ORL	A, @R1	1
48	1	ORL	A, R0	1
49	1	ORL	A, R1	1
4A	1	ORL	A, R2	1
4B	1	ORL	A, R3	1
4C	1	ORL	A, R4	1
4D	1	ORL	A, R5	1
4E	1	ORL	A, R6	1
4F	1	ORL	A, R7	1
50	2	JNC	offset	2
51	2	ACALL	addr11	2
52	2	ANL	direct, A	1
53	3	ANL	direct, #immed	2
54	2	ANL	A, #immed	1
55	2	ANL	A, direct	1
56	1	ANL	A, @R0	1
57	1	ANL	A, @R1	1
58	1	ANL	A, R0	1
59	1	ANL	A, R1	1
5A	1	ANL	A, R2	1
5B	1	ANL	A, R3	1
5C	1	ANL	A, R4	1
5D	1	ANL	A, R5	1
5E	1	ANL	A, R6	1
5F	1	ANL	A, R7	1
60	2	JZ	offset	2
61	2	AJMP	addr11	2
62	2	XRL	direct, A	1
63	3	XRL	direct, #immed	2
64	2	XRL	A, #immed	1
65	2	XRL	A, direct	1
66	1	XRL	A, @R0	1
67	1	XRL	A, @R1	1
68	1	XRL	A, R0	1
69	1	XRL	A, R1	1
6A	1	XRL	A, R2	1
6B	1	XRL	A, R3	1
6C	1	XRL	A, R4	1
6D	1	XRL	A, R5	1
6E	1	XRL	A, R6	1
6F	1	XRL	A, R7	1
70	2	JNZ	offset	2
71	2	ACALL	addr11	2
72	2	ORL	C, bit	2
73	1	JMP	@A+DPTR	2
74	2	MOV	A, #immed	1
75	3	MOV	direct, #immed	2
76	2	MOV	@R0, #immed	1
77	2	MOV	@R1, #immed	1
78	2	MOV	R0, #immed	1
79	2	MOV	R1, #immed	1
7A	2	MOV	R2, #immed	1
7B	2	MOV	R3, #immed	1
7C	2	MOV	R4, #immed	1
7D	2	MOV	R5, #immed	1
7E	2	MOV	R6, #immed	1
7F	2	MOV	R7, #immed	1
80	2	SJMP	offset	2
81	2	AJMP	addr11	2
82	2	ANL	C, bit	2
83	1	MOVC	A, @A+PC	2
84	1	DIV	AB	4
85	3	MOV	direct, direct	2
86	2	MOV	direct, @R0	2
87	2	MOV	direct, @R1	2
88	2	MOV	direct, R0	2
89	2	MOV	direct, R1	2
8A	2	MOV	direct, R2	2
8B	2	MOV	direct, R3	2
8C	2	MOV	direct, R4	2
8D	2	MOV	direct, R5	2
8E	2	MOV	direct, R6	2
8F	2	MOV	direct, R7	2
90	3	MOV	DPTR, #immed	2
91	2	ACALL	addr11	2
92	2	MOV	bit, C	2
93	1	MOVC	A, @A+DPTR	2
94	2	SUBB	A, #immed	1
95	2	SUBB	A, direct	1
96	1	SUBB	A, @R0	1
97	1	SUBB	A, @R1	1
98	1	SUBB	A, R0	1
99	1	SUBB	A, R1	1
9A	1	SUBB	A, R2	1
9B	1	SUBB	A, R3	1
9C	1	SUBB	A, R4	1
9D	1	SUBB	A, R5	1
9E	1	SUBB	A, R6	1
9F	1	SUBB	A, R7	1
A0	2	ORL	C, /bit	2
A1	2	AJMP	addr11	2
A2	2	MOV	C, bit	2
A3	1	INC	DPTR	2
A4	1	MUL	AB	4
A5		reserved		
A6	2	MOV	@R0, direct	2
A7	2	MOV	@R1, direct	2
A8	2	MOV	R0, direct	2
A9	2	MOV	R1, direct	2
AA	2	MOV	R2, direct	2
AB	2	MOV	R3, direct	2
AC	2	MOV	R4, direct	2
AD	2	MOV	R5, direct	2
AE	2	MOV	R6, direct	2
AF	2	MOV	R7, direct	2
B0	2	ANL	C, /bit	2
B1	2	ACALL	addr11	2
B2	2	CPL	bit	1
B3	1	CPL	C	1
B4	3	CJNE	A, #immed, offset	2
B5	3	CJNE	A, direct, offset	2
B6	3	CJNE	@R0, #immed, offset	2
B7	3	CJNE	@R1, #immed, offset	2
B8	3	CJNE	R0, #immed, offset	2
B9	3	CJNE	R1, #immed, offset	2
BA	3	CJNE	R2, #immed, offset	2
BB	3	CJNE	R3, #immed, offset	2
BC	3	CJNE	R4, #immed, offset	2
BD	3	CJNE	R5, #immed, offset	2
BE	3	CJNE	R6, #immed, offset	2
BF	3	CJNE	R7, #immed, offset	2
C0	2	PUSH	direct	2
C1	2	AJMP	addr11	2
C2	2	CLR	bit	1
C3	1	CLR	C	1
C4	1	SWAP	A	1
C5	2	XCH	A, direct	1
C6	1	XCH	A, @R0	1
C7	1	XCH	A, @R1	1
C8	1	XCH	A, R0	1
C9	1	XCH	A, R1	1
CA	1	XCH	A, R2	1
CB	1	XCH	A, R3	1
CC	1	XCH	A, R4	1
CD	1	XCH	A, R5	1
CE	1	XCH	A, R6	1
CF	1	XCH	A, R7	1
D0	2	POP	direct	2
D1	2	ACALL	addr11	2
D2	2	SETB	bit	1
D3	1	SETB	C	1
D4	1	DA	A	1
D5	3	DJNZ	direct, offset	2
D6	1	XCHD	A, @R0	1
D7	1	XCHD	A, @R1	1
D8	2	DJNZ	R0, offset	2
D9	2	DJNZ	R1, offset	2
DA	2	DJNZ	R2, offset	2
DB	2	DJNZ	R3, offset	2
DC	2	DJNZ	R4, offset	2
DD	2	DJNZ	R5, offset	2
DE	2	DJNZ	R6, offset	2
DF	2	DJNZ	R7, offset	2
E0	1	MOVX	A, @DPTR	2
E1	2	AJMP	addr11	2
E2	1	MOVX	A, @R0	2
E3	1	MOVX	A, @R1	2
E4	1	CLR	A	1
E5	2	MOV	A, direct	1
E6	1	MOV	A, @R0	1
E7	1	MOV	A, @R1	1
E8	1	MOV	A, R0	1
E9	1	MOV	A, R1	1
EA	1	MOV	A, R2	1
EB	1	MOV	A, R3	1
EC	1	MOV	A, R4	1
ED	1	MOV	A, R5	1
EE	1	MOV	A, R6	1
EF	1	MOV	A, R7	1
F0	1	MOVX	@DPTR, A	2
F1	2	ACALL	addr11	2
F2	1	MOVX	@R0, A	2
F3	1	MOVX	@R1, A	2
F4	1	CPL	A	1
F5	2	MOV	direct, A	1
F6	1	MOV	@R0, A	1
F7	1	MOV	@R1, A	1
F8	1	MOV	R0, A	1
F9	1	MOV	R1, A	1
FA	1	MOV	R2, A	1
FB	1	MOV	R3, A	1
FC	1	MOV	R4, A	1
FD	1	MOV	R5, A	1
FE	1	MOV	R6, A	1
FF	1	MOV	R7, A	1