

# GameBoy Z80 CPU Opcodes

NOP	0 0	0 0 0 0 0 0	
LD (N),SP	0 0	0 0 1 0 0 0	16 Bit Address
LD R,N	0 0	R 0 0 0 1	16 Bit Immediate
ADD HL,R	0 0	R 1 0 0 1	
LD (R),A	0 0	0 R 0 0 1 0	
LD A,(R)	0 0	0 R 1 0 1 0	
INC R	0 0	R 0 0 1 1	
DEC R	0 0	R 1 0 1 1	
INC D	0 0	D 1 0 0	
DEC D	0 0	D 1 0 1	
LD D,N	0 0	D 1 1 0	8 Bit Immediate
RdCA	0 0	0 0 D 1 1 1	
RdA	0 0	0 1 D 1 1 1	
STOP	0 0	0 1 0 0 0 0	
JR N	0 0	0 1 1 0 0 0	8 Bit Displacement
JR F,N	0 0	1 F 0 0 0	8 Bit Displacement
LDI (HL),A	0 0	1 0 0 0 1 0	
LDI A,(HL)	0 0	1 0 1 0 1 0	
LDD (HL),A	0 0	1 1 0 0 1 0	
LDD A,(HL)	0 0	1 1 1 0 1 0	
DAA	0 0	1 0 0 1 1 1	
CPL	0 0	1 0 1 1 1 1	
SCF	0 0	1 1 0 1 1 1	
CCF	0 0	1 1 1 1 1 1	
LD D,D	0 1	D D	
HALT	0 1	1 1 0 1 1 0	
ALU A,D	1 0	ALU D	
ALU A,N	1 1	ALU 1 1 0	8 Bit Immediate
POP R	1 1	R 0 0 0 1	
PUSH R	1 1	R 0 1 0 1	
RST N	1 1	N >> 3 1 1 1	
RET F	1 1	0 F 0 0 0	
RET	1 1	0 1 0 0 1	
RETI	1 1	0 1 1 0 0 1	
JP F,N	1 1	0 F 0 1 0	16 Bit Address
JP N	1 1	0 0 0 1 1	16 Bit Address
CALL F,N	1 1	0 F 1 0 0	16 Bit Address
CALL N	1 1	0 0 1 1 0 1	16 Bit Address
ADD SP,N	1 1	1 0 1 0 0 0	8 Bit Immediate
LD HL,SP+N	1 1	1 1 0 0 0	8 Bit Immediate
LD (FF00+N),A	1 1	1 0 0 0 0	8 Bit Immediate
LD A,(FF00+N)	1 1	1 1 0 0 0	8 Bit Immediate
LD (C),A	1 1	1 0 0 0 1 0	
LD A,(C)	1 1	1 1 0 0 1 0	
LD (N),A	1 1	1 0 1 0 1 0	16 Bit Address
LD A,(N)	1 1	1 1 1 0 1 0	16 Bit Address
JP HL	1 1	1 0 1 0 0 1	
LD SP,HL	1 1	1 1 0 0 1	
DI	1 1	1 1 0 0 1 1	
EI	1 1	1 1 0 1 1	
RdC D	1 1	0 0 1 0 1 1	0 0 0 0 D D
Rd D	1 1	0 0 1 0 1 1	0 0 0 1 D D
SdA D	1 1	0 0 1 0 1 1	0 0 1 0 D D
SWAP D	1 1	0 0 1 0 1 1	0 0 1 1 0 D
SRL D	1 1	0 0 1 0 1 1	0 0 1 1 1 D
BIT N,D	1 1	0 0 1 0 1 1	0 1 N D
RES N,D	1 1	0 0 1 0 1 1	1 0 N D
SET N,D	1 1	0 0 1 0 1 1	1 1 N D

Register	R	R	R
BC	0	0	0
DE	1	0	1
HL	/	1	0
SP	/	1	1
AF	/	/	1

Destination	D
B	0 0 0
C	0 0 1
D	0 1 0
E	0 1 1
H	1 0 0
L	1 0 1
(HL)	1 1 0
A	1 1 1

Condition	Mnemonic	F
Not Zero	NZ	0 0
Zero	Z	0 1
Not Carry	NC	1 0
Carry	C	1 1

Operation	ALU
ADD	0 0 0
ADC	0 0 1
SUB	0 1 0
SBC	0 1 1
AND	1 0 0
XOR	1 0 1
OR	1 1 0
CP	1 1 1

Direction	d	D
Left	L	0
Right	R	1

Operation Type	I
Increment	0
Decrement	1

Direction	D
Memory to register	0
Register to memory	1

Register	Contents
AF	Accumulator Z N H C 0 0 0 0
BC	B C
DE	D E
HL	H L
SP	Stack Pointer
PC	Program Counter

Flag	F
Zero Flag	Z
Operation Flag	N
Half Carry Flag	H
Carry Flag	C