

Registers

AX	Accumulator; used to store some calculation results
BX	Base; index register for MOVE
CX	Counter; count for string operations & shifts
DX	Datas; port address for IN and OUT
SP	Points to top of stack
BP	Points to base of stack frame
SI	Points to a source in stream operations
DI	Points to a destination in stream operations
CS	Points to base of segment containing code
DS	Points to base of segment containing datas
SS	Points to base of segment containing the stack
ES	Points to base of an additionnal segment
IP	Points to the next instruction to be run

Loops

LOOP	Decrements CX and jumps to label if CX <> 0
LOOPE	Decrements CX and jumps to label if CX <> 0 and ZF = 1
LOOPNE	Decrements CX and jumps to label if CX <> 0 and ZF = 0
LOOPNZ	Decrements CX and jumps to label if CX <> 0 and ZF = 0
JCXZ	Jumps to label if CX = 0

Remember: Loops uses CX and ZF registers

Instructions

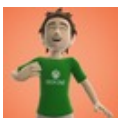
Instructi on	Usage	Example
MOV	Assigns value to register	MOV AX, 15h
ADD	Adds value to register	ADD AX, BX
SUB	Substracts value to register	SUB AX, 1
AND	Executes binary AND operation	AND AL, 1101111b
OR	Executes binary OR operation	OR AL, BX
NOT	Executes binary NOT operation	NOT AL
XOR	Executes binary XOR operation	XOR AL, 01010101b
SHL/SAL /SHR/SA R	Shifts to the left or to the right. When arithmetic, the sign bit doesn't shift. Explused bit is stocked in CF	SHL AL, 1 / SAL AL, 2
ROL/RC L/ROR/R- CR	Rotates to the left or to the right, using or not CF	ROL AL, 1 / RCR AL, 2
INC / DEC	Increments or decrements a value	INC AX / DEC BX
ADC / SBB	Does an addition or subtraction of >16bits numbers, by storing restraint in CF	ADC AX, CX
STC / CLS / CMC	Sets CF to 1, 0 or inverts it	STC
STD / CLD	Sets DF to 1 or 0	STD
STI / CLI	Sets IF to 1 or 0	CLI

Instructions (cont)

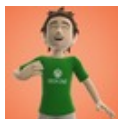
MUL / IMUL / DIV / IDIV	Multiplies or divides two numbers and stores it to AX (+DX for most significant bit)	MUL AL, 0001Ah MUL 00002h
JMP	Jumps to a label	JMP calc
CMP	Performs a comparison	CMP AL, 01234b
PUSH / PUSHA / PUSHF	Pushes a data to SS: [SP] / all registers / FLAGS	PUSH 10h
POP / POPA / POPF	Restores fatas form SS: [SP] / all registers (except SP) / FLAGS	POP AX

Conditional jumps

Instruct ion	Description	Condition
JA	Jump if Above	CF = 0 and ZF = 0
JAE	Jump if Above or Equal	CF = 0
JB	Jump if Below	CF = 1
JBE	Jump if Below or Equal	CF = 1 or ZF = 1
JC	Jump if Carry	CF = 1
JE	Jump if Equal	ZF = 1
JG	Jump if Greater	ZF = 0 and SF = OF
JGE	Jump if Greater or Equal	SF = OF
JL	Jump if Less	SF <> OF
JLE	Jump if Less or Equal	ZF = 1 or SF <> OF
JO	Jump if Overflow	OF = 1
JP	Jump if Parity	PF = 1
JPE	Jump if Parity Even	PF = 1
JS	Jump if Sign	SF = 1
JZ	Jump if Zero	ZF = 1



Colors			
Decimal	Hexa	Binary	Color
0	00h	0000b	Black
1	01h	0001b	Blue
2	02h	0010b	Green
3	03h	0011b	Colbalt blue
4	04h	0100b	Red
5	05h	0101b	Violet
6	06h	0110b	Brown
7	07h	0111b	Light grey
8	08h	1000b	Dark grey
9	09h	1001b	Light blue
10	0Ah	1010b	Light green
11	0Bh	1011b	Light cobalt
12	0Ch	1100b	Light red
13	0Dh	1101b	Light violet
14	0Eh	1110b	Yellow
15	0Fh	1111b	White



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Page 2 of 2.

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