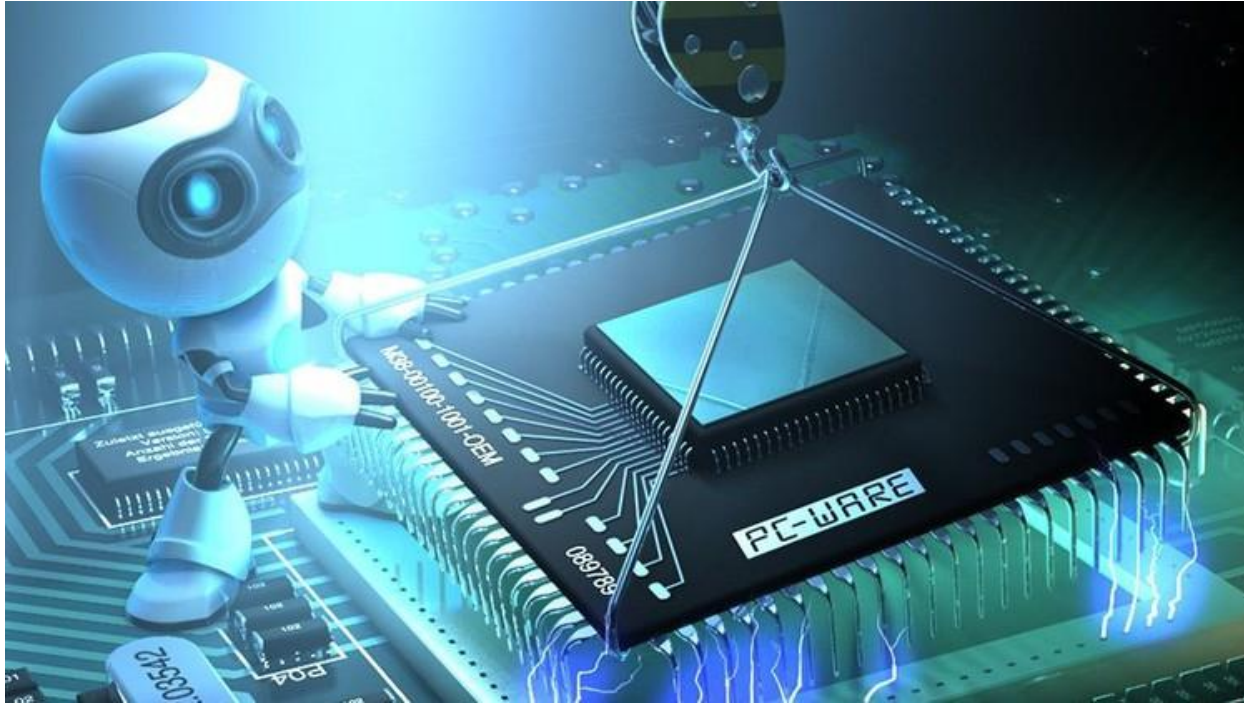


Data Movement Instructions



Data Movement Instructions



Instructions	Description	Notes	Example
MOVx op1, op2	$op2 \leftarrow op1$	$x = \{L, W, B\}$	MOVB \$-1,%AL
MOVSxy op1, op2	$op2 \leftarrow \text{ExtSign}(op1)$	$xy = \{BW, BL, WL\}$	MOVSBW %CH,%AX
MOVZxy op1, op2	$op2 \leftarrow \text{ExtZero}(op1)$	$xy = \{BW, BL, WL\}$	MOVZWL %BX,%EDX
PUSHL op1	$\%ESP \leftarrow \%ESP - 4;$ $M[\%ESP] \leftarrow op1$		PUSHL 12(%EBP)
POPL op1	$op1 \leftarrow M[\%ESP];$ $\%ESP \leftarrow \%ESP + 4;$		POPL %EAX
LEAL op1, op2	$op2 \leftarrow \&op1$	op1: memory	LEAL (%EBX,%ECX),%EAX

MOVZ Instruction



MOVZWL %BX, %EDX

$op_2 \leftarrow \text{ExtZero}(op_1)$

%BX 1001 1100 0001 1101

(Bit positions 15 and 0 are marked above the box)

%EDX 0000 0000 0000 0000 1001 1100 0001 1101

(Bit positions 31 and 0 are marked above the box)

MOVS Instruction



MOVS B W %CH, %AX

$\%AX \leftarrow \text{ExtSign}(\%CH)$

$\%CH$ ⁷ ⁰
1101 1110 8 bits

$\%AX$ ¹⁵ ⁰
1111 1111 1101 1110 16 bits