**Lab ASC 10.10.2023**

32 Biti 16 Biti 8 Biti

EAX AX AH/AL

EBX BX BH/BL

ECX CX CH/CL

EDX DX DH/DL

ESP SP

EBP BP

EDI DI

ESI SI

EAX

AX

|  |  |  |
| --- | --- | --- |
|  | AH | AL |

8 Biti 8 Biti

Data

Nume\_var tip lista\_val

**DB**

**DW**

**DD**

**DQ**

**ADUNARE:**

**a DB 1**

**RESB**

**RESW**

**RESD**

**RESQ**

**b RESB 3**

lista TIMES 10 DB ‚a’

**add AL, a** -> adauga adresa

**add AL, [a]** -> adauga valoarea

**add AL, 3**

**add byte [a], 3** (scriem **byte** ca sa stie ca acolo este un byte)

pentru adunare ambele valori trebuie sa fie de aceeasi dimensiune(acelasi tip: DB,DW,DD,DQ)

cel mult un operand poate fi o locatie de memorie

**add [b], [a]** NU SE POATE

**SCADERE:**

**sub byte [a], 2**

**INMULTIRE:**

rezulatele merg in primul registru

**mul CL** -> AX=AL\*CL

**SINTAXA**

**mul** **<op8>**; AX ← AL \* <op8>

**mul** **<op16>**; DX:AX ← AX \* <op16>

**mul** **<op32>**; EDX:EAX ← EAX \* <op32>

**mov AL,[a]**

**mul byte 3** – nu functioneaza

**mov BL,3**

**mul BL**

**Ex:**

**mul** **DH**; AX ← AL \* DH

**mul** **DX**; DX:AX ← AX \* DX

**mul** **EBX**; EDX:EAX ← EAX \* EBX

**mul** **BYTE [mem8]**; AX ← AL \* BYTE [mem8]

**mul** **WORD [mem16]**; DX:AX ← AX \* WORD [mem8]

**IMPARTIREA:**

**div**

**SINTAXA:**

**div** **<reg8>**; AL ← AX / <reg8>, AH ← AX % <reg8>

**div** **<reg16>**; AX ← DX:AX / <reg16>, DX ← DX:AX % <reg16>

**div** **<reg32>**; EAX ← EDX:EAX / <reg32>, EDX ← EDX:EAX % <reg32>

**div** **<mem8>**; AL ← AX / <mem8>, AH ← AX % <mem8>

**div** **<mem16>**; AX ← DX:AX / <mem16>, DX ← DX:AX % <mem16>

**div** **<mem32>**; EAX ← EDX:EAX / <mem32>, EDX ← EDX:EAX % <mem32>

**Daca facem o impartire cu ceva din memorie specificam dimensiunea**

**div word [a]** ;DX:AX ->AX

**restul impartirii merge in cazul impartirii:**

* **pe 8 biti in AH**
* **pe 16 biti in DX**
* **pe 32 biti in EDX**

**Ex:**

**div** **CL**; AL ← AX / CL, AH ← AX % CL

**div** **SI**; AX ← DX:AX / SI, DX ← DX:AX % SI

**div** **EBX**; EAX ← EDX:EAX / EBX, EDX ← EDX:EAX % EBX

**DECLARAREA VARIABILELOR/CONSTANTELOR**

a **DB** 0A2h ;se declara variabila a de tip BYTE si se initializeaza cu valoarea 0A2h

b **DW** 'ab' ;se declara variabila a de tip WORD si se initializeaza cu valoarea 'ab'

c **DD** 12345678h ;se declara variabila a de tip DOUBLE WORD si se initializeaza cu valoarea 12345678h

d **DQ** 1122334455667788h ;se declara variabila a de tip QUAD WORD si se initializeaza cu valoarea 1122334455667788h

zece **EQU** 10 ;se defineste constanta zece care are valoarea 10