

Ch 11

Addressing Modes

immediate (رقم)

Direct memory address

مشاكلها انه اذا المهورى كبيرة

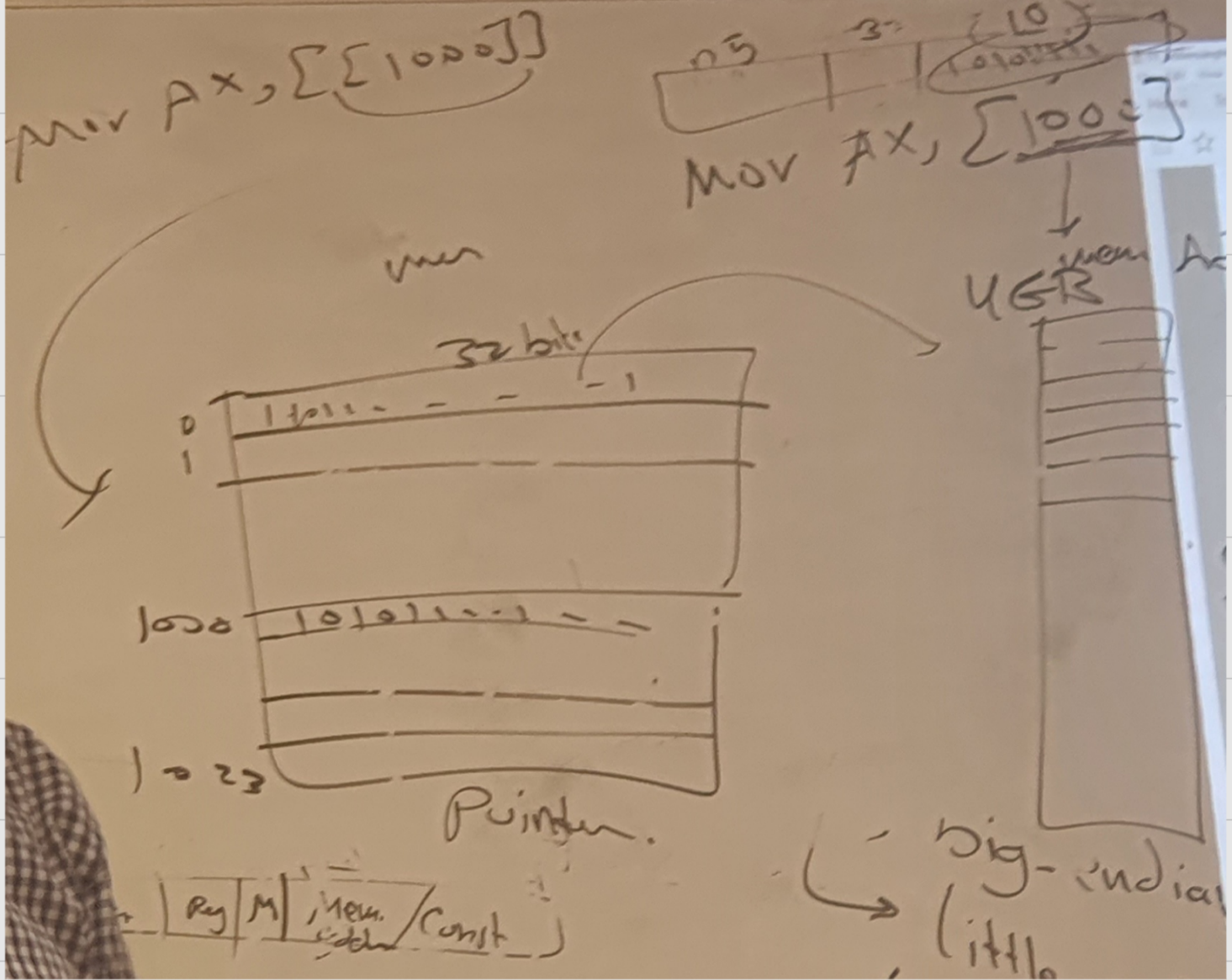
لونا عدد bits كبير كثير وهلا من اسي

يكنى

indirect

بتخلش access بشكل مباشر كما memory

لنسى المهورى صغيرة فيب address



محرریتہ ۱۰۰۰ کی پوزیشن

Register

ADD AX, BX

indirect

Indirect Register

Add Ax, [Bx]



The address is in Register

Mov Ax, [Bx]

Displacement (Indexes)

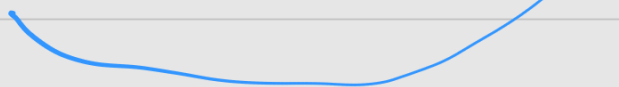
Mov Ax, [Bx + 1]

Mov Ax, [Bx + SI]

inc SI

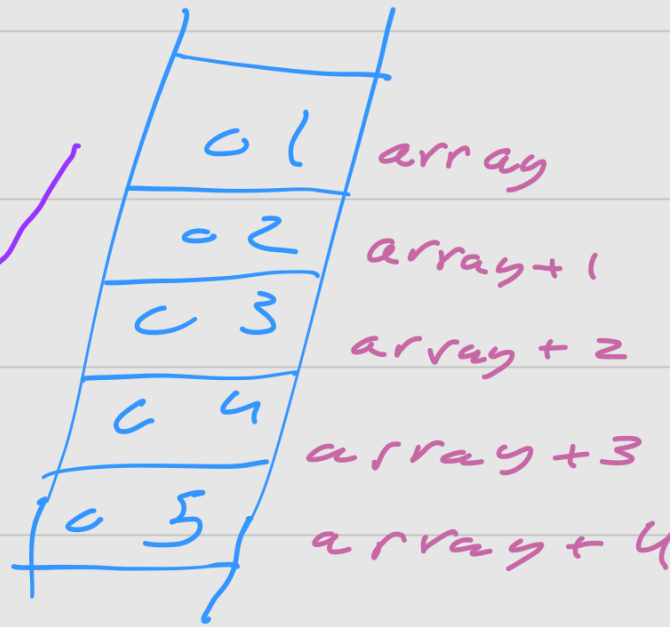
Scans index

loop



Array 0B 1, 2, 3, 4, 5

Define Byte



Address

و

ل

Mem Ax, [Array+3]

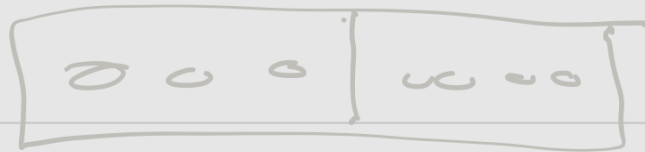
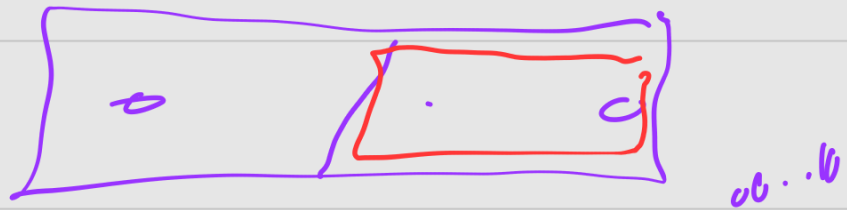
Ax = 0504

2 Byte ار رجیستری بوج

فقط 2 cell

mov Ax, 4

mov AL, 0 Ax = 0



mov cx, 20 20 لو جیم اری

mov AL, [Bx] Address = 60

inc Bx

dec cx

Jnz lco

لوپ لٹھا ہے الوری

=> stacks

واضہ

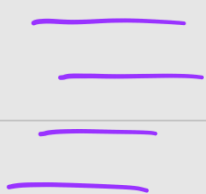


PC Relation

1- Shift -1



Jnz lco





mov --

1cc instruct → Jump جولت

PC → پلائی پلائی
↳ program counter

8 bits is signed so

$$-2^7 \rightarrow 2^7 + 1$$

⇒ if we write number

more than this range

assembler change it

$t \rightarrow$ long displacement

\Rightarrow 16 bit

$\Rightarrow -2^{15} \rightarrow 2^{15} + 1$

example: we have memory as:

content of any cell = cell address $\times 2$

and we have Register R_1 , offset Z

where: $R_1 = 10$

$Z = 100$

The result of $Add\ R_1, Z$

where addressing mode is:

① immediate (constant)

② Direct

(3) Indirect

(4) Index (Address R_1 , $[R_1 + \#]$)

1. $10 + 100 = 110$

$$R_1 = 110$$

2.

$R_1 = 100$ so contain 200

$$200 + 10 = 210$$

$$R_1 = 210$$

3.

100 contain 200

200 contain 400

$$\text{So } 400 + 10$$

$$R_1 = 410$$

u.

$$R_1 + Z = 110 \text{ contain } 2Z_0$$

$$2Z_0 + R_1 = 3Z_0$$

$$R_1 = 3Z_0$$

