CS271 WK5 BOOK N.

4.9, 8.1, 8.2

4.9

Indirect Addressing

- Direct addressing is rarely used because it is impractical.
- Instead, Indirect Addressing (using PTR's in REG's) is used.

Ex: (Protected Mode)

```
byte_val BYTE 0x10
mov esi OFFSET byte_val
mov al [esi]  ;AL = 10h = 0x10.
```

- If [reg] supplied as Dest, i.e. mov [esi], bL, then the contents of bL will be placed at the location Pointed to by esi
- Sometimes, the assembler needs to know the size:

```
inc [esi]  ;generates error...
↳ inc BYTE PTR [esi]  ;all happy!
```

Indexed Operands

- adding a constant to a reg to generate an effective address:
  - → constant[reg]
  - → [reg + constant]

Note: constant can be offset to an array...

- TYPE var_name returns the number of bytes used by each element in var_name

Pointers

- Point to memory offset of a var.
  - → ptr_name DWORD var_to_be_ptd_to
  - → ptr_name DWORD OFFSET var_yore

TYPEDEF

- Lets the user create custom types
  - → ~~TYPEDEF~~
  - → PBYTE TYPEDEF PTR BYTE
    - ↳ Creates a type, PBYTE, that serves as a ptr to a BYTE