

Key terms:UDT

\* Non-Composite (Not made up of other data types)

- Enumerations
- Pointers.

\* Composite (Made up of other data types)

- Sets
- Classes
- Records.

Enumeration Data Types:

Syntax: TYPE <identifier> = (val1, val2, val3, ..., valn)

Example: TYPE Tmonth = (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec)

```
DECLARE thisMonth : Tmonth
DECLARE nextMonth : Tmonth
```

```
thisMonth ← Nov
nextMonth ← thisMonth + 1
```

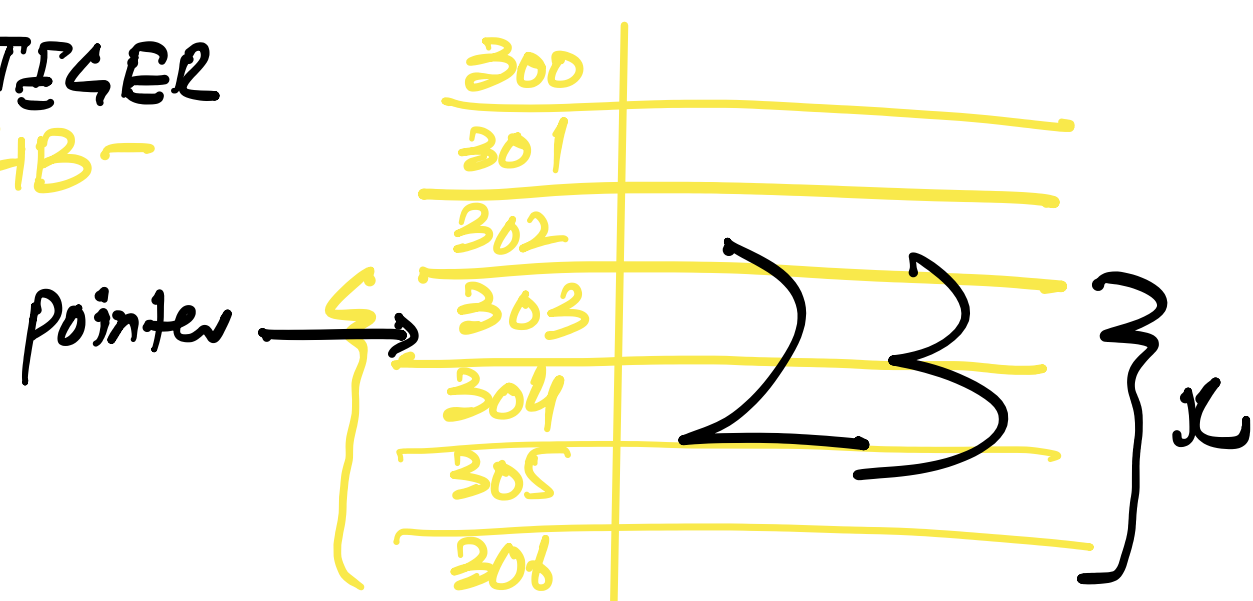
Another Example: TYPE TnumMonth = (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12)

```
TYPE TnumMonth = (1..12)
TYPE TnumMonth = 1..12
```

POINTER DATA TYPE:

Concept: DECLARE x : INTEGER  
x ← 23

-4B-



Syntax: TYPE <pointer> = ^<Type name>

Example: TYPE TpointerINT = ^INTEGER  
DECLAR x : INTEGER  
x ← 23  
DECLARE xPointer : TpointerINT  
xPointer ← ^x

Dereferencing, Accessing value at a pointer (location):

```
z ← xPointer^ + 7
```

Another Example:

```
TYPE TmonthPointer = ^Tmonth
DECLARE xPointer : TmonthPointer
xPointer ← ^thisMonth
```

```
DECLARE previousMonth : Tmonth
previousMonth ← xPointer^ - 1
```