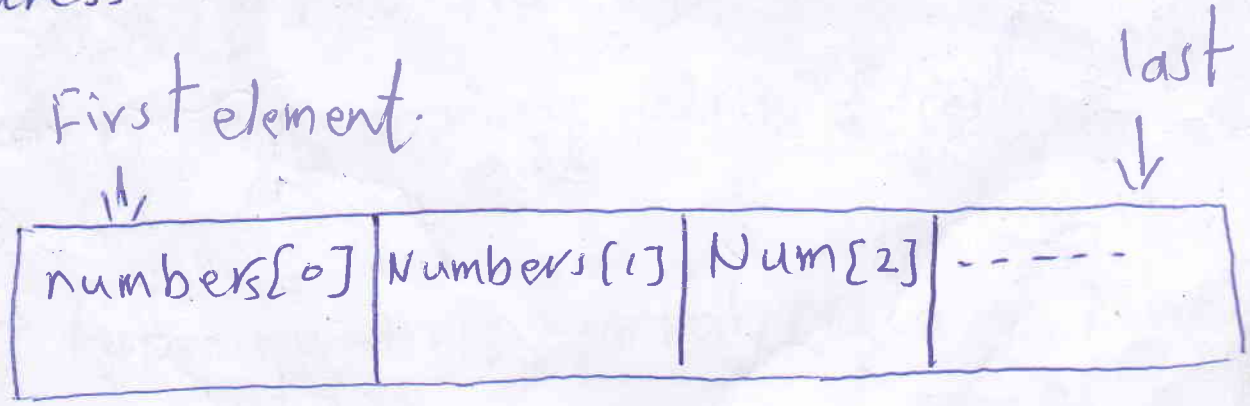
unit 2 lecture 6

Arrays:

pascal programming language provides a data structure called the array which can store a fixed-size sequential collection of elements of the same type. an array is used to store a collection of data.

All arrays consist of contiguous (متجاورة) memory locations. The lowest address corresponds (يطابق) to the First element and the highest address corresponds to the last element.



Declaring Arrays:

The general form of type declaration of one-dimensional array is: ذات البعد الواحد

```
type
array_identifier = array [index-type] of element type
```

or

type array_name = array [lower..upper] of data_type ;

* lower and upper define the boundaries for the array.

* data type; is the type of the variable which the array will store.

ex:- type numbers = Array [1..20] of integer

ربما نتعرف في ال Var

Syntax :

var

array name : Array [elements] of type
(range ↓ elements)

ex:

var

numbers : Array [1..5] of integer;

ex: Pr

* ادخال قيمة عن طريق جملة التعيين (اعطاء قيمة ثابتة للمتغير).

```
var
X: array [1..10] of integer;
Begin
X[1] := 3;
X[5] := 2;
writeln (X[1] * X[5]);
writeln (X[1]);
end.
```

ملاحظة: استخدام (For) اد... اده كل الاعداد ... دون ادخال قيم ثابتة للمتغير.

output

6
3

How charecters are represented:-
internally most computers store charecte
according to the ASCII Formate; ASCII
stands for American Standard Code for
Information Interchange.
charecter are store according to a numbered
sequence, where A has value 64 in
decimal system, B avalue of 65 etc
several Function which manipulate
charecters follow.

- CHR:- the chr or charecter Function returns the charecter associated with the ASCII code being asked.

  ex: chr(65) will return the B

- ORD:- or ordinal Function returns th
ASCII value of a requested charecte

  ex:- ord('c') will give 66

SUCC :- the successor Function determines the next value or symbol in the set.

ex: succ('d') will return e

- PRED :- Predecessor function determines the Previous value or symbol in the set.

ex:- Pred('d') will return c.

H.w :- write pascal stmt to create an array called Mynumbers, of type numbers which is an integer array with elements ranging From 1 to 20.

ex: Prog
var
n: array[1..10] of integer;
i,j: integer;
begin
For i:= 1 to 10 do
n[i]:= i+100;
For i:= 1 to 10
writeln ('element[', i, ']=', n[i]);

ملاحظة:-

لإدخال العناصر عن طريق عملية الإدخال:

إذا كانت لدينا صفوفة مكونة من ثلاثين عنصر (موقع) ونريد قراءتهم جميعاً فإنه يعتبر صعباً للوقت أن نقرأ عنصر عنصر هكذا:

```
Read (x[1]);
Read (x[2]);
  :
Read (x[30]);
```

لذلك وجب استخدام تكرار حيث نقوم بقراءة جميع القيم في سطرين فقط.

```
For i:=1 to 30 do
Readln (x[i]);
```

برنامج يقرأ 10 أحرف في مصفوفة ثم يقوم بطباعتها بالعكس.

```
Program array;
var
 I: integer;
 X: array[1..10] of char;
   Begin
     For i:=1 to 10 do
     Read (x[i]);

     For i:=10 down to 1 do
     write (x[i]);

end.
```