2D ARRAY

2D array is a multi-dimensional array, it stores data in a format consisting of rows and columns

Declaration of
2D ARRAYS

				Row		Column	

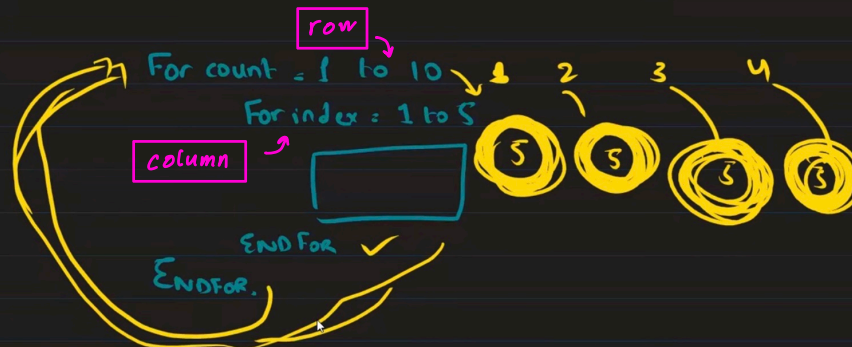DECLARE   Name OF Array : ARRAY [LB : UB , LB : UB] OF DATA TYPE

DECLARE   Numbers : ARRAY [1 : 4 , 1:4] OF INTEGER

Q- Declare an Array of D.T string (Names) of 545 rows
and 250 columns.

1 ... 250
1
⋮
545

DECLARE   Names : ARRAY [1 : 545 , 1 : 250] OF STRING

Q. Initialize variables/elements of an array with data type String, integer, boolean

Integer = 0

String = " "

Boolean = True / False

Q- Construct an array of data type string having 500 rows and 45 columns and initialize all the elements

DECLARE Row, Column : INTEGER
DECLARE EmptyBox : ARRAY[1:500, 1:45] OF STRING

· FOR Row ← 1 TO 500
        FOR Column ← 1 TO 45
            EmptyBox [Row, Column] ← " "
        END FOR
END FOR

SEARCHING 2-D ARRAYS

Q- There is already an array (Search Box) with 500 rows and 30 columns. Search for the word "Empty" and print how many times it was repeated.

```
DECLARE Row, Column, Times : INTEGER
DECLARE SearchBox : ARRAY[ 1:500, 1:30] OF STRING

Times ← 0
FOR Row ← 1 TO 500
    FOR Column ← 1 TO 30
        IF SearchBox[ Row, Column] ← "Empty"
            THEN
                Times ← Times + 1
        END IF
    ENDFOR
```

END FOR

OUTPUT "'Empty' was repeated", Times, "times."

Q- There is already an array (Search-Box) with 500 rows and 356 columns. Search for the word "Empty" and replace it with "Papersdock".

```
DECLARE Row, Column: INTEGER
DECLARE Search-Box: ARRAY[1:500, 1:356] OF STRING

FOR Row ← 1 TO 500
    FOR Column ← 1 TO 356
        IF Search-Box[Row, Column] ← "Empty"
            THEN
                Search-Box[Row, Column] ← "Papersdock"
        ENDIF
    ENDFOR
ENDFOR
```