" 2D array "

in this type of arrays, there are rows and Column
in which the work is different with thos
working with the single array, although they hav
the Same prepertres in Sequentially Storage
and ~~po~~ the possibility of dealing randomly wit
the location as-well-as time to access any
location in the array. the array is defin
as follows.

Name: array [no. of rows, no. of Columns] of
typ

* the elements of array are integer.

X: array [1..3, 1..4] of integers;

* the elements of array are real.

X: array[1..3, 1..4] of reals;

* the elements of array are Charecte

X: array [1..3, 1..4] of chars;

(how to read an element in a
arra

Readln (X[row, Column])

~~here~~

(how to write an element in an a

write (X[row, Column]).

:i read and write the element in 2D array (3*4).

```
Program array;
Var
   A:array [1..3, 1..4] of integer;
    i,j: integer;
begin
   writeln( 'enter array value: ');
    for i:= 1 to 3 DO
        For j:= 1 to 4 DO
         Read (A[i,j]);
  writeln( 'the array element');
   for i:= 1 to 3 DO
      begin
        for j:= 1 to 4 DO
        write( A[i,j]:5);
        writeln;
         readln;
       end;
         end.
```

وضع فراغ بين العناصر

ملاحظة :

قراءة وخزن القيم في المصفوفة . الدالة For الخارجية I للصفوف والداخلية J للاعمدة ،
اي سوف يبدأ بقراءة قيم الصف الاول لـ 4 اعمدة ثم يعود الى الدالة
الخارجية ليزداد المتغير I بـ 1 ليكون 2 اي الصف الثاني
وينتقل الى الدالة J ليبدأ ادخال قيم الصف الثاني في عناصر العمود
1 الى العمود 4 وهكذا .

condition,
Satisfy the elements that stay upper of the Secondary diagonal is.

(i+j < no. of row+1)

the Condition to Satisfy the element that Stay at lower of the Secondar Diagonal is.

(i+j > no. of row +1).

ex! program to Sum the elements of 2 arrays in 2D array (3 *4

```
var
    A, B, C: array [ 1..3, 1..4] of integers
     i, j: integers
begin
     writeln ('enter first array element')
      For i:= 1 to 3 do
      For j:= 1 to 4 do
        Readln(A [i,j]);
     writeln ('enter second array elemen
        For i:= 1 to 3 do
         For j:= 1 to 4 do
          Readln (B [i,j]);
```

```
For i:= 1 to 3 do
For j:= 1 to 4 do
 C[i,j] := A[i,j] + B[i,j];
 writeln('the result of array element');
   For i:= 1 to 3 do
     Begin
      For j:= 1 to 4 do
      write(C[i,j]);
      writeln;
      End;
     End.
```

Sum the element OF the main Diag
in 2D array (4 * 4) .

```
var
 A:array [1..4, 1..4] OF integer;
  i,j,s : integers;
begin
      For i:= 1 to 4 do
      For j:= 1 to 4 do
   Readln (A [i,j]);

S:=0;
       For i:= 1 to 4 do
       For j:= 1 to 4 do
      if (i=j) then
      S:= S + A [i,j]
     writeln ('the sum:= , s);

     End.
```

Sum the element that Stay upper of
the Secondary Diagonal. in 2D (4

```
var
   A: array [1..4, 1..4) of integer.
   i, j, s : integer.
begin
   for i:=   1 to 4   do
  for j:=   1 to 4   do
      Read ln(A[i,j]);

     S:=0;
        for i:=1      to 4 do
          for j:=1     to 4 do
     if ((I+j) <5) then
      S:= S+ A[i,j];
     writeln (s);
     End.
```