

PASCAL - DYNAMIC ARRAYS

http://www.tutorialspoint.com/pascal/pascal_dynamic_arrays.htm

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In case of a dynamic array type, the initial length of the array is zero. The actual length of the array must be set with the standard **SetLength** function, which will allocate the necessary memory for storing the array elements.

Declaring Dynamic Arrays

For declaring dynamic arrays you do not mention the array range. For example –

```
type
    darray = array of integer;
var
    a: darray;
```

Before using the array, you must declare the size using the **setlength** function –

```
setlength(a, 100);
```

Now, the array a has a valid array index range from 0 to 999: the array index is always zero-based.

The following example declares and uses a two dimensional dynamic array –

```
program exDynarray;
var
    a: array of array of integer; (* a 2 dimensional array *)
    i, j : integer;

begin
    setlength(a, 5, 5);
    for i:=0 to 4 do
        for j:=0 to 4 do
            a[i,j] := i * j;

        for i:=0 to 4 do
            begin
                for j:= 0 to 4 do
                    write(a[i,j]:2, ' ');
                writeln;
            end;
        end;
    end.
```

When the above code is compiled and executed, it produces the following result –

```
0 0 0 0 0
0 1 2 3 4
0 2 4 6 8
0 3 6 9 12
0 4 8 12 16
```