Dynamic Allocation of Two Dimensional Arrays

The following example illustrates a C programming technique that is not necessarily Macintosh-specific.

```
// Dynamic allocation of two dimensional arrays
// An example of dynamic allocation of a two-dimensional array (matrix).  An array
// of ARRAYSIZE * ARRAYSIZE integers is allocated.  The elements of the array are
// then filled and printed out to prove that it worked.

#include <stdlib.h>
#include <stdio.h>

#define ARRAYSIZE       10

int **array;
int  i,j;

main ()
{

    array = (int **) malloc (ARRAYSIZE * sizeof (int *) );
    if (array) {
        for (i = 0; i < ARRAYSIZE; i++) {
            array[i] = (int *) malloc (ARRAYSIZE * sizeof (int) );
            if (!array[i]) {
                printf ("Not enough memory\n");
                exit(1);
            }
        }

        for (i = 0; i < ARRAYSIZE; i++)
            for (j = 0; j < ARRAYSIZE; j++)
                array[i][j] = i;

        for (i = 0; i < ARRAYSIZE; i++) {
            for (j = 0; j < ARRAYSIZE; j++)
                printf ("%d",array[i][j]);
            printf ("\n");
        }
    }
}
```