

Arrays and Functions

1 Arrays as Function Parameters

An array can be the parameter of a function. An array passed as a parameter to a function does not have to have its size declared. Instead it is common to specify the size of the array as a second parameter. For example, here is code to check whether a given array is sorted in increasing order or not:

```
int isSorted(float A[], int size)
{
    int i;
    for(i=0; i<size-1; i++) {
        if(A[i]>A[i+1])
            return 0;    // false
    }
    return 1;           // true
}
```

Note that changes to the contents of the array in the function DO affect the original array (why is discussed later).

2 Sample code: linearSearch.c

A *linear search* is just a fancy name for the idea of looking for something by going through the array until it is found.

```
/* linear search in an array */
// linearSearch.c - WDG
#include <stdio.h>

int indexOf(int A[], int size, int val);

int main(void)
{
    int test[] = {1,3,5,7,2,4,6};
    int arraySize = 7;
    int testVal, position;

    testVal=3;
    position = indexOf(test, arraySize, testVal) ;
    printf("%d is at %d\n", testVal, position );

    testVal=33;
    position = indexOf(test, arraySize, testVal) ;
    printf("%d is at %d\n", testVal, position );

    return 0;
}

// returns index of first occurrence of val in array A (-1 if failure)
int indexOf(int A[], int size, int val)
{
    int i;
    for(i=0; i<size; i++) {
        if( val == A[i] )
            return i;
    }
    // failing which
    return -1;
}
```