#  Arrays Homework

1. Write some code to perform each of the following tasks:

 a) Define a constant MAX that holds a value of 50.

#define MAX 50

 b) Define an array of integers, num, containing MAX elements and initialize each of the the elements of the array to 0.

int num[ MAX ] = { 0 };

c) What is the name of the fourth element of the array.

num[ 3 ]

d) Output the value of the sixth element of the array.

printf("%d", num[ 5 ] );

e) Assign a value into the third element of array num.

num[2] = 25;

f) Initialize each of the 25 elements of the array to 500.

for ( i = 0; i < MAX; i++ )

num[ i ] = 500;

g) Sum up the elements of array num into summation variable sum.

for ( i = 0; i < MAX; i++ )

sum += num[ i ];

h) Copy the contents of array num into array foo, also of size MAX.

for ( i = 0; i < MAX; i++ )

foo[ i ] = num[ i ];

i) Increment each element of array foo by a value of 1.

for ( i = 0; i < MAX; i++ )

foo[ i ]++;

2. The code below assigns a random number from 1 to 10,000 into each element of array num. Writre a function that receives the array as a parameter and returns the smallest value of array.

srand((unsigned int) time(NULL));

for (i = 0; i < MAX; ++i) {

num[i] = rand() % 10000 + 1;

}

int smallest(int num[]) {

int i, small;

small = num[0];

for (i = 1; i < MAX; ++i) {

if (num[i] < small)

small = num[i];

}

return small;

}

3. As a practical joke, a friend gives you an int array for your birthday. As if that weren't bad enough, your friend tells you that the array contains almost all 0’s except for a small string of consecutive 1’s contained somewhere in the middle. Overwhelmed by the novelty of this you decide to write a function that will print out the location of the first 1 in the array, the location of the last 1 in the array, and the total number of 1’s in the list of consecutive 1 values. Given below is the function prototype:

void joke (int num[], int max);

where num is the array of int values and max contains the number of elements in the array.

**// joke.c**

#include <stdio.h>

void joke(int num[], int max);

int main(void) {

int num[25] = {0,0,0,0,0,0,0,0,0,0,0,0,1,1,1,1,1,1,1,1,1,0,0,0,0};

joke(num, 25);

return 0;

}

void joke(int num[], int max) {

int i, first, last, count;

first = last = count = 0;

for (i = 0; i < max; i++) {

if (first == 0 && num[i] != 0)

first = i;

last = i;

count = 1;

}

else if (num[i] == 1) {

last = i;

++count;

}

}

printf("First = %d\n", first);

printf(" Last = %d\n", last);

printf("Count = %d\n", count);

}

Output:

First = 12

Last = 20

Count = 9