

CS 31 Homework 1: C Arrays

Due 11:59pm via Gradescope, Thursday, September 18, 2025

Post your answers to Gradescope in the assignment marked “HW1”.

Names and Roles:

Question 1

Given the following C code snippet, list the **value** and **type** of each expression below.

```
int x = 4, i;  
int myarray[10];  
float f = 4.3;  
for(i=0; i < 10; i++) {  
    myarray[i] = i % x;  
}
```

Code snippet	VALUE	TYPE
1. <code>x + i</code>		
1. <code>x + f</code>		
2. <code>myarray[4]</code>		
3. <code>myarray[4] > myarray[3]</code>		
4. <code>myarray</code>		

Question 2

Trace through the following C code, and draw the stack at the execution point indicated in `mystery`, and show the output produced by a complete run of the program. (Assume `stdio.h` has been included.)

```
void print_array(int a[], int s) { // YOUR STACK DRAWING
    int i;
    for (i = 0; i < s; i++) {
        printf("%d:%d, ", i, a[i]);
    }
    printf("\n");
}

int mystery(int a[], int s){
    int i, val;
    val = 0;
    for (i = 0; i < s; i++) {
        a[i] = a[i] * i;
        val++;
    }
    // DRAW THE STACK WHEN EXECUTION GETS HERE
    return val;
}

int main(void) {
    int i, myarray[10], num;
    num = 1;

    for (i = 0; i < 10; i++) {
        myarray[i] = i;
    }

    printf("Before: num = %d\n", num);
    print_array(myarray, 10);
    num = mystery(myarray, 7);
    printf("After: num = %d\n", num);
    print_array(myarray, 10); // PROGRAM OUTPUT

    return 0;
}
```