

CMSC 106 Quiz 4 Worksheet

The next quiz for the course will be on Wed, Nov 13. The following list provides additional information about the quiz:

- The quiz will be a written quiz (no computer).
- Closed book, closed notes quiz.
- Answers must be neat and legible.
- Quiz instructions can be found at <http://www.cs.umd.edu/~nelson/classes/utilities/examRules.html>

The following exercises cover the material to be included in this quiz. Solutions to these exercises will not be provided, but you are welcome to discuss your solutions with the TA or instructor during office hours. It is recommended that you try these exercises on paper first (without using the computer).

Exercises

1. What does the name of an array represent?
2. Rewrite the following assignment using pointer arithmetic.

`a[x] = 20;`

3. Draw a memory map for the following code.

```
#include <stdio.h>

int main() {
    int val[3] = {10, 7, 14};

    int data = 100;
    int *p = &data;
    int y = 1;
    int **q = &p;

    *p += 100;
    printf("First %d %d %d\n", *p, data, y);

    y++;
    printf("Second %d\n", **q);

    p = &val[y];
    printf("Third %d\n", **q);

    return 0;
}
```

4. Write a function that takes as parameters two integer arrays (and their sizes) and returns 1 if the arrays have the same elements (**in the same order**) and zero otherwise.
5. Write a function that takes as parameters two integer arrays (and their sizes) and returns 1 if the arrays have the same elements (**in any order**) and zero otherwise.
6. The function called **filter** has the following prototype:

```
int filter(int src[], int dest[], int array_size,
           int lower_bound, int upper_bound)
```

The function initializes the dest array with elements that have values in the range defined by lower_bound (inclusive) and upper_bound (inclusive). The size of src and dest is array_size. The function will return the number of elements placed in dest. You can assume lower_bound is less than or equal to upper_bound.