

**The George Washington University**  
**School of Engineering and Applied Science**  
**Department of Computer Science**  
**CSci 4223 - Principles of Programming Languages - Spring 2018**  
**Extra Practice**  
**Instructor: A. Bellaachia**

**Problem 1:** C program to merge two sorted array, Assume the two arrays have the same size and contains integers.

Given the following inputs:

Input first array elements: 1, 4, 6, 9, 15

Input second array elements: 2, 5, 8, 10

The output is:

Merged array in ascending order = 1, 2, 4, 5, 6, 8, 9, 10, 15

**Problem 2:** Write a C program to multiply two matrices.

**Problem 3:** Write a C program to find sum of each row and column of a matrix.

**Problem 4:** Count duplicate elements in an array:

Given the following inputs:

Input array elements: 1, 10, 20, 1, 25, 1, 10, 30, 25, 1

The Output is:

Total number of duplicate elements = 5

**Problem 5:** C program to count frequency of each element in an array

Given the following inputs:

Input array elements: 5, 10, 2, 5, 50, 5, 10, 1, 2, 2

The output is:

Frequency of 5 = 3

Frequency of 10 = 2

Frequency of 2 = 3

Frequency of 50 = 1

Frequency of 1 = 1

**Problem 6:**

What is the output of this function?

```
main()
{
    int i = abc(10);
    printf("%d", --i);
}
```

```
int abc(int i)
{
    return(i++);
}
```

**Problem 7:**

What will be the output of following program?

```
#include <stdio.h>
void foo(), f();
int main()
{
    f();
}
void foo()
{
    printf("2 ");
}
void f()
{
    printf("1 ");
    foo();
}
```