

**CS2413: Data Structures  
Fall 2021**

**Homework #1**

- Full name only: \_\_\_\_\_
- Release date: Aug 27th, 2021 (Friday)
- Due date: **Sept 2nd, 2021 (Thursday) before midnight, 11:59 PM**
- It should be done INDIVIDUALLY; Show ALL your work; Write your answer in a Word file and submit it through the blackboard
- Total: 10 pts

1. Explain the meaning of the expression,  $f(n)$  is  $O(1)$ .

[3 pts]

2. Analyze the running time and find the computational complexity (Big-Oh will do) of the following code. Show all your work.

[4 pts]

```
for (cnt2 = 0, i = 1; i <= n; i++)  
    for (j = 1; j <= i; j++)  
        cnt2 ++;
```

3. Order the following functions by growth rate.

[3 pts]

$2^n$       1500       $n \lg n$        $n^3$        $\lg n$