

**CS-200: Programming I**  
**Fall 2017**  
**Northeastern Illinois University**  
**PLTL: Week of 10/24/17**  
**Nested loops/Arrays**

**Problem #1**

- Write a program that has the class name Problem1 and that has the main method.
- Write a program that asks a user to enter the length of a square greater than 1.
- Prompt the user to enter the length until they enter number greater than 1.
- The program should create a full Square using length.
- Your output must match the sample output format exactly.

```
Enter a square length greater than 1 ( > 1): 5
5 * * * 1
 * 4 * 2 *
* * 3 * *
 * 4 * 2 *
5 * * * 1
```

```
Enter a square length greater than 1 ( > 1): -1
Enter a square length greater than 1 ( > 1): 1
Enter a square length greater than 1 ( > 1): 3
3 * 1
 * 2 *
3 * 1
```

**Problem #2**

- Write a program that has the class name Problem2 and that has the main method. Leave the main method empty for now.
- Write a method named `closestPower` that takes two parameter, an integer `n` and an integer array `a` and returns an integer.
- The method should find `num` which is the value in array `a` that appears the most. If none of the value is repeated then consider the largest one as `num`.
- Now that you have `num` and `n`, find the integer `i` which is the power of `n`, such that  $n^i$  is closest to `num` and return the value of `i`.
- In case of tie, return the smaller value.
- Several sample usages are provided for you below. Use the sample usages in the main method to test your code.

Sample Method Usage	Return Value
<pre> <b>int</b> n1 = 3; <b>int</b>[] a1 = { 6, 81, 17, 12, 25, 24, 12 }; <b>int</b> x1 = closestPower(n1, a1); </pre>	2
<pre> <b>int</b> n2 = 4; <b>int</b>[] a2 = {3, 4, 5, 1, 12 , 67, 3, 1, 1 }; <b>int</b> x2 = closestPower(n2, a2); </pre>	0
<pre> <b>int</b> n3 = 7; <b>int</b>[] a3 = { 77, 22, 185, 20, 269, 88 }; <b>int</b> x3 = closestPower(n3, a3); </pre>	3
<pre> <b>int</b> n4 = 2; <b>int</b>[] a4 = {1, 4, 24, 3, 12, 8 }; <b>int</b> x2 = closestPower(n4, a4); </pre>	4