CHIANG MAI UNIVERSITY

Bachelor of Science (Digital Industry Integration)

College of Arts, Media and Technology

3rd Semester / Academic Year 2019

Data Structure and Algorithm

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1. Write a method to calculate the multiplication of 2 and the last value in an array

- Inside the main method, you may use the following lines to initial the values in an array.

```
Random random = new Random();
int[] myArr = random.ints(100, 10,100000).toArray();
```

Note that 100 is the size of the array, you may print array.length to double check. 10 is the lower bound and 100000 is the upper bound. You may try to change the lower bound to 1 and upper bound to 5, and then check the values either by debugging or printing them out. ';;

- Before calling the method from the main method, please add the following line to start the timer.

```
long startTime = System.currentTimeMillis();
```

- After calling the method from the main method, please add the following line to stop the timer.

```
long endTime = System.currentTimeMillis();
```

- Add the following lines to print out how long does it take to finish this method.

```
System.out.println("The method took " + (endTime - startTime) + "
milliseconds");
```

- What is `long`? and What are the different between `long` and other variable types?

- Varying the size of the input array and observe the execution time.

Length of the array	10	1000	100000	100000000
Execution time				

2. **Write a method to calculate the summation of all the values in an array**

- Add the timer, similar to the previous question
- Varying the size of the input array and observe the execution time.

Length of the array				
Execution time				

3. **Write a method to receive a table (i.e., square two-dimension array) and calculate the summation of each row.**

- Add the timer, similar to the previous questions
- Varying the size of rows and columns and observe the execution time.

Length of the array				
Execution time				