**LAB 6**

**Single Dimensional Arrays and Command Line Arguments – 10 points**

**Instructions:**

1. After downloading the lab assignment from Blackboard, please write the appropriate Java programs in BlueJ IDE.
2. If stuck anywhere, the instructor and the lab assistant are always there to help.
3. Lab assignments need to be uploaded onto Blackboard by the due date listed on Blackboard.
4. You would need to submit a .docx file. Copy-paste the written code and a sample run of the program.
5. Online resources can ‘definitely’ be consulted. However, please refrain from using content from the internet as-is. The mark of a good programmer is to write clean and genuine code – anytime, anywhere, and always.
6. The following programs require using arrays. For each, the input comes from standard input and consists of N real numbers between 0.0 and 1.0. **(6 points)**
7. Print the median element.
8. Print the element that occurs most frequently.
9. Print the element closest to 0.
10. Print all the numbers greater than the average.
11. Print the N elements in random order.
12. Print histogram (with, say 10 bins of size 0.1). <- requires some thought here.
13. In 1742, Christian Goldbach conjectured that every even number greater than 2 could be written as the sum of two primes. For example, 16 = 3 + 13. Write a program that takes one command line parameter N and expresses N as the sum of two primes. [Goldbach's conjecture](http://mathworld.wolfram.com/GoldbachConjecture.html) is still unresolved, but it is known to be true for all N < 1014. **(4 points)**