# CS 372/469
# Fall 2018
# Lab 1: Due 9/4, 11:59 pm

In this lab, you need to implement the two algorithms we talked about in class for computing Fibonacci series. There is no restriction on language: use your favorite one.

1. (35 points) Implement the "first attempt" algorithm on Slide 6. Run your code with input size $n = 0, \ldots, 20$ (both inclusive).
2. (35 points) Implement the "second attempt" algorithm on Slide 11. Run your code with input size $n = 0, \ldots, 20$. Record the running time for both algorithms for the same inputs.
3. (20 points) Draw a graph with $n$ on X-axis, and time on Y-axis, and plot the running times of both algorithms on the same graph. Some plotting options you can use:
   (a) gnuplot is used for generating scientific, publication-quality plots. If you haven't tried it, this is an opportunity to do so. It is available on the CS machines.
   (b) Excel, Google Sheets, etc.
4. (10 points) Write a lab report that describes your work (length max. around 1.5–2 pages)
   (a) Introduction (define the background and the problem)
   (b) Results (show the numbers and figures)
   (c) Discussions (implications and issues)

How to submit: Upload your **pdf** file on Canvas before the due date. You can use my posted template if you wish, for typesetting your lab, but aren't required to do so.