**Architecture**

Multiple threads - run at the same time

Run different random walks in each thread

Main program will collect all results from each thread which creates a histogram

Main Program

* Create a method called random walks that will be run by all threads.
* Creating threads is done through a loop in the main class
* Under main class, after a thread is finished, results are sent back to the main class or a class that gathers the results of all threads. Divide each result by m to normalize the histogram which is either done by the main class.
* Create a method or class that creates a histogram using the results of the threads which is only run after all threads have finished. Use a mutex to make this wait? Create histogram through excel.

Mean and Variance

* program with a reader function to read the results of the main programs excel file.
* compute main and variance with the formula provided in the pdf.

Professor will choose variables: u,d,k,M