Connected Components

Large Scale Distributed Systems

In a graph with a single connected component, a path can be found connecting any pair of vertices. This task will explore experimentally finding out how many random edges need to be added in a random graph with a given number of vertices until a single connected component is obtained. A plot should be produced that shows for growing numbers of initial vertices how many edges had to be added.

Since we are dealing with a randomized experiment results should show the average outcome of a given number of independent experiments (consider a sample size of at least 30).

Suggested tools:

- Python
- NetworkX. `https://networkx.github.io`
- Gnuplot, mathplotlib, or similar graphing tools with PDF outputs