NOVA SCHOOL OF BUSINESS & ECONOMICS

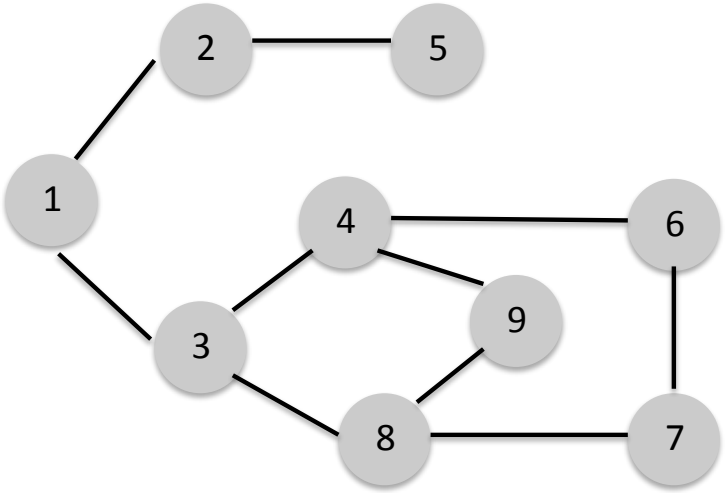
2494 - COMPUTATIONAL THINKING & DATA SCIENCE

2019-20, Spring Semester

In-class Exercises

GRAPH-THEORETIC MODELS

1. Implement the BFS algorithm and use it to find out the shortest path between node 1 and node 8.



RANDOM WALK

2. Write a program that simulates a random walk of a drunken man. Consider that his possible movements are (1,0), (-1,0), (0,1) and (0,-1).

   Then simulate several random walks and calculate the mean, maximum and minimum distance between his last position and origin.

   Compare the mean distance for walks with different lengths.