CAP 6515 HOMEWORK ASSIGNMENT 4
DUE ON 12-03-2019 (NO EXTENSION ALLOWED)

Note: Any solution to an algorithm design question MUST contain the following four sections:

(1) **Problem statement.** A clear unambiguous statement of the problem to be solved, which includes the input, the output, and the object function with the constraints.
(2) **Algorithm description.** A clear, unambiguous description of the algorithm.
(3) **Correctness proof.** A convincing mathematical argument that the algorithm described solves the computational problem described.
(4) **Time analysis.** A time analysis of the algorithm, up to order, in terms of all relevant parameters.

You may use any algorithms and data structures from class.

1. Hamiltonian Path and Eulerian Path (100 pts)

Use both **the Hamiltonian path** approach and **the Eulerian path approach** to solve the sequence assembly problem for the following spectrum: S={ATG, GGG, GGT, GTA, GTG, TAT, TGG}.

Please label the edges and vertices of both graphs, and give all possible sequences that can be explained by the spectrum.