Background

A Graph is a non-linear data structure consisting of nodes and edges as shown in Figure 1. The nodes are

sometimes also referred to as vertices and the edges are lines or arcs. They are data structures used to model

pairwise relations between objects. The vertices are used to model the objects and edges connecting two

vertices that are used to model the pairwise relation between those objects. They are used to solve many

real-life problems. Graphs are used to represent networks. The networks may include paths in a city or

telephone network or circuit network.

4.3.1 List All

List all command is used for listing all the possible flight plan(s) from departure point to the arrival point.

4.3.2 List Proper

List proper command is used for listing all the proper flight plan(s) from departure point to the arrival

point which means a flight plan should be removed from the resulting flight plan set if there is another

flight plan which is both quicker (that arrives at the final destination earlier) and cheaper.

4.3.3 List Cheapest

List cheapest command is used for listing the cheapest possible flight plan(s) from departure point to the

arrival point. Keep in mind that there may be more than one possible cheapest flight plans.

4.3.4 List Quickest

List quickest command is used for listing the quickest possible flight plan(s) from departure point to the

arrival point. Keep in mind that there may be more than one possible quickest flight plans.

4.3.5 List Cheaper

List cheaper command is used for listing all the proper flight plans from departure point to the arrival

point that are cheaper than given parameter

4.3.6 List Quicker

List quicker command is used for listing all the proper flight plans from departure point to the arrival

point that arrive to the destination earlier than given parameter

4.3.7 List Excluding

List excluding command is used for listing all the proper flight plans from departure point to the arrival

point that do not involve a flight from given airlines company.

4.3.8 List Only From

List excluding command is used for listing all the proper flight plans from departure point to the arrival

point that consists of flights only from the given airlines company.

4.3.9 Diameter of Graph

The diameter of graph is the maximum distance between the pair of vertices. It can also be defined as the

longest shortest path.

4.3.10 PageRank of Nodes

PageRank (PR) is an algorithm used by Google Search to rank web pages in their search engine results.

PageRank is a way of measuring the importance of website pages. The basic idea of PageRank is that the

importance of a web page depends on the pages that link to it. For instance, we create a web page i that

includes a hyperlink to web page j. If there are a lot pages also link to j, we then consider j is important on

the web.