1.1. Project Description

Finding the shortest route in a network is a commonly encountered problem. Solution enclosed here is an application for our project ***Visible World Data delivery system.*** This application describes the problem modeled as ***find optimized route*** to deliver a file from given host source system to a destination host as per a defined matrix of modes of transmission among various hosts.

1.2. Solution Approach

Our application is based on a ***Graph*** implementation that we have used to calculate the shortest path between a given host and destination. Below is definition of a graph and associated terms for better understanding.

A *graph* is made out of *nodes* and directed *edges* which defines a connection from one node to another node.

A node (or vertex) is a discrete position in a graph. Edges can be directed an undirected. Edges have an associated distance (also called modes or weight). The distance between two nodes a and b is labeled as [a, b].

The mathematical description for graphs is G= {V, E}, meaning that a graph is defined by a set of vertexes (V) and a collection of edges.

1.3. Solution Model

A graph consists of vertices and edges. These are represented by the following model.

1. Define a Vertex class
2. Defined an Edge class
3. Generate a graph and calculate the optimized mode of file transmission