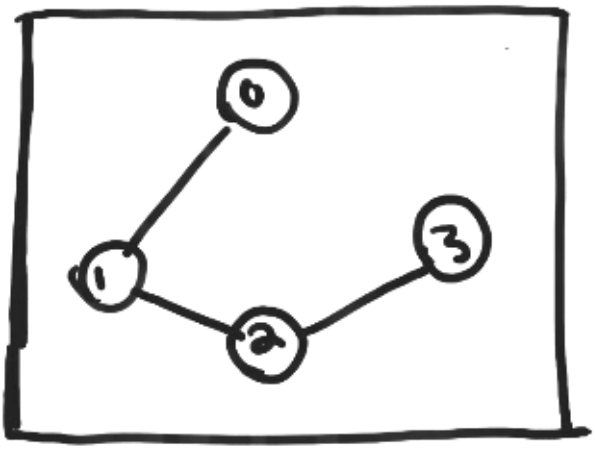
# SSD Final Project Design

*example graph




Network Sim:
- graph data structure
- node/edge info gets populated from parsed text file (example):
  - Line 1: # of total nodes
  - Line 2: Node ID
  - Line 3: Service time (tria)
  - Line 4: message gen rate (expo)
  - Line 5: # of edges
  - Line 6: edge connections
- Routes messages by getting shortest path from algorithm data
- collect stats on performance

- Linked list implementation
- adjacency List

classes:

## Computer

- represented by nodes
- unique ID
- processes messages
- implements EA/EM sim exec
- FIFO/SSSQ queuing model
- reports its own statistics

## Network

- handles message routing
- 3 routing methods:
  - shortest path: gets shortest path from source to all other nodes
    - all edge weights equal
  - modified shortest path: recomputes shortest path at each node
    - edge weights = queue size
    - dynamic
  - "actual" router: method that takes the returned path vector from the static/dynamic algorithms

(algorithms (dijkstra))

to get the valid path
- populates graph data structure from parsed file

## FIFO Queue

- statistics reporting:
  - max q size, avg size, avg wait time

## Message

- statistics reporting:
  - avg wait time, avg comms time
- keeps track of source, dest nodes and creation, dest, wait times
- once msg generated, router called to get where its going