1.Data structure

Weighted Graph is used in this assignment. Every node in this graph is a router in the topology and every edge is a path. Every edge has a weight which is a list and the first value in this list is delay, the second one is capacity and the third one is a number (initiated as 0) that means the times that this path been occupied.

2.

In virtual circuit network, the packet doesn’t affect the running result

################### CIRCUIT ### SHP #####################

total number of virtual connection requests: 5884

total number of packets: 534117

number of successfully routed packets: 351479

percentage of successfully routed packets: 65.81

number of blocked packets: 182638

percentage of blocked packets: 34.19

average number of hops per circuit: 3.89

average cumulative propagation delay per circuit: 60.57

################### CIRCUIT ### SDP #####################

total number of virtual connection requests: 5884

total number of packets: 534117

number of successfully routed packets: 344216

percentage of successfully routed packets: 64.45

number of blocked packets: 189901

percentage of blocked packets: 35.55

average number of hops per circuit: 4.32

average cumulative propagation delay per circuit: 53.72