COMP 375 (Computer Networks): Quiz #7
Friday, April 20, 2018

Name: _____**SOLUTIONS**_____

1. Critics of Network Address Translation (NAT) have argued that NAT should not be used because it violates the separation of layers in our network. Is NAT guilty of this violation? Explain why or why not.

   Yes. NAT uses both IP addresses and port numbers to determine the ultimate destination of a packet. IP addresses are network layer addresses while port numbers are from the transport layer. Mixing them together for routing means we are violating the separation of layers (namely the separation of the network and transport layers).

2. In addition to making addresses larger, IPv6 also removed a few features from IPv4. Name one prominent feature that is in IPv4 but is not in IPv6 and briefly explain why it was removed.

   Fragmentation is one feature of IPv4 that was removed. This feature was complex and required extra IP header fields to support. Rather than dealing with this complexity, if a router received a datagram that is too large to send, it simply sends a new "Datagram Too Large" response and drops the datagram.

3. Given the network topology shown below with 3 SDN routers and 8 interfaces, write a **flow table entry** for **Router1** so that all web traffic (using ports 80 and 443) destined for the subnet connected to interface 8 gets routed through Router3 (rather than going directly to Router2). Note that you only need to write the entry for Router1 (don't worry about what entries might be needed for the other routers.

Rule	Action
(tcp.port == 80 || tcp.port == 443) && ip.dest == 10.2.0.0/16	Forward(1)