CS4344 Networked and Mobile Games Quiz 1

Answer ALL questions in the space provided. Please state your assumptions (if any) clearly.

1. Network latency is not constant, but instead, it fluctuates depending on the congestion level in the network. The degree of fluctuation is known as delay jitter. Consider a network that experiences high delay jitter, causing the one-way latency from the clients to the server to fluctuate between 100ms and 800ms every second (the one-way latency from the server to the clients remains stable). What are the effects (if any) of such delay jitter to the game play of a first person shooting game when the following techniques are used? Would clock synchronization between server and clients change your answer?

(a) **permissable client/server architecture**: a client always waits for acknowledgment from the server before it updates its local state.

(b) **artificial lag**: server postpones processing of client messages to improve fairness among the clients.

Matriculation Number: _

(c) **lag compensation**: server rewinds to a previous state to determine if a player has hit another player.

(d) **local perception filter**: rendering of passive objects are time-shifted to create consistent views among the players.

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