Really Interesting Strategic Conquest

Evolution 1: Initial Requirements

This semester's project is *Really Interesting Strategic Conquest*, simultaneous-turn based strategic conquest game. Here are the functional requirements for evolution 1.

1. Networked game play.
   (a) Multiple players (2–5 is required, more if you want) should be able to play, from different computers.
   (b) A client/server design must be employed.
   (c) The server is ultimately responsible for enforcing the rules of the game.
   (d) Clients may validate data in advance, but may not be trusted by the server.
   (e) A player disconnecting from the game may not unduly disrupt the gameplay of the remaining players. You may determine the specifics of what happens (forfeit, reconnection, etc), but the server may not crash, end the game, or make the game unplayable.
   (f) The server only needs to support one game at a time.

2. The game board shall be a map, divided into territories.
   (a) During game play, the map shall be visibly displayed to each player.
   (b) Each territory shall have a number of units in it.
   (c) Each territory should graphically represent the pertinent state of that territory (who controls it, how many units are stationed there, etc.)

3. At the start of the game, an initialization phase shall take place where each player selects their starting territories and army placement:
   (a) Territories shall be divided into initial starting groups (with the same number of territories in each group).
   (b) Each player shall pick (or be assigned) one such group as her starting territories.
   (c) Each player shall have the same number of initial units, which she may place in her territories as she wishes.
   (d) Initial troop placement occurs simultaneously for all players, with no information conveyed between players about the other’s places until the process is complete. Put a different way, each player should be able to place their troops (and adjust that placement) until they are satisfied, this hit “Done” (or some similar button). All players can do this at the same time. Once all players hit “Done” their troop placements become visible to each other.
   (e) The exact number of initial troops is up to you, or may be an option in setting up a new game. However, all players must receive the same number of troops.

4. Turn structure: A turn has three parts, which occur in the following order:
   (a) Issue orders.
      i. There are two types of orders that a player may issue: *move* and *attack* (more below).
      ii. A player may issue any number of each type of these orders in a turn.
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iii. A player may revise/edit his orders until he commits them (by pressing “Done”, or similar button).

iv. No player may see the orders of any other player until all players’ orders are committed.

v. A player is free to revise (cancel, change, etc) his orders until they are committed.

vi. The server must ensure that all orders are legal.

vii. Once all players commit their orders, these orders are executed.

(b) Execute orders: perform their effects

i. Move orders move troops from one territory to another territory controlled by the same player.

ii. A move order must specify the number of troops to move, the source territory, and the destination territory.

iii. Troops moving with a move order must have a path formed by adjacent territories controlled by their player from the source to the destination.

iv. Move orders effectively occur before attack orders.

v. Troops moving out of a territory do not participate in its defense.

vi. Troops moving in to a territory do participate in its defense.

vii. An attack order results in troops attacking a territory controlled by a different player.

viii. An attack order must specify the number of troops to attack, the source territory, and the destination territory.

ix. Troops may only attack directly adjacent territories.

x. Attack orders effectively result in all attackers leaving their home territories simultaneously, then arriving at their attack target simultaneously.

xi. A successful attack (see “Combat resolution” below) results in the attacker taking ownership of the territory.

xii. All moves must follow the rules of common sense and preclude cheating: orders may not create new troops nor allow a troop to be in two places at once (attacking two territories).

(c) Receive new units: At the end of each turn, one new unit shall appear in each territory

5. Combat resolution: The server should resolve each combat action, informing all players of the outcome.

(a) Combat between one attacker and one defender is an iterative process which ends when one side runs out of units in the fight:

i. The server rolls two 20-sided dice (one for the attacker, one for the defender).

ii. The side with the lower roll loses 1 unit (in a tie, the defender wins and the attacker loses an unit).

iii. The order in which the units fight shall be a pairing which alternates between the defender’s strongest (highest modifier) unit paired with the attacker’s weakest (lowest modifier) unit, and the attacker’s strongest paired with the defenders weakest.
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(b) If player A attacks territory X with units from multiple of her own territories, they count as a single combined force.

(c) If multiple players attack the same territories, each attack is resolved sequentially, with the winner of the first attack being the defender in subsequent attacks. For example, if A, B, and C attack territory X held by player D, then B fights D first. If D wins, then C fights D. If C wins, then A fights C. The sequence in which the attacker’s actions are resolved should be randomly determined by the server.

(d) If units from territory X attack territory Y, and at the same time, units from territory Y attack territory X, then they are assumed to take drastically different routes between their territories, missing each other, and ending up at their destination with no combat in the middle. For example, if all units from X attack Y, and all units from Y attack X, then (assuming no other players attack those territories) both attacks will be successful with no troops lost by either side (since there will be no defenders at the start of the battle).

6. Victory and defeat

(a) A player loses when he no longer controls any territories.

(b) When a player has lost, he may no longer make any moves, and the server should automatically consider his moves to be committed (as the empty set) at the start of each turn.

(c) A player who has lost may continue to watch the game if he desires, or may disconnect.

(d) A player wins when she controls all territories in the game.

(e) When a player has won, the server should announce this to all remaining clients, which should display this information. The game then ends.

(f) When a game ends, you may either have the server exit, or have it provide the option to start a new game.

Groups of 2 may skip the initialization phase (All items of part 3), instead assigning each player a fixed group of territories with a pre-set placement of armies. Groups of 2 may include this feature for extra credit.