Problem Statement – Risk

For our project we will need to develop the game Risk from the bottom up. Our team will be using Test Driven Development to implement the game of Risk in Java. After we build the GUI as quickly as we can, we will focus on tests that cover each of the rules of the game. We will isolate each of these cases and test them separately using unit tests, and proceed with any further kinds of testing. Our Feature List will be as follows:

* Map overlayed onto Java GUI.
* Slots for Armies in each territory created.
* We will need to be able to determine the infantry size, possibly we can simplify by assuming two players (without neutral armies) or three players.
* We will need to set an initial round for the players being able to place their armies in unclaimed territories.
* Players should only be able to attack adjacent territories.
* Implementation of rolling of dice/RNG to determine attacks.
* If all defending armies are destroyed, the attacker occupies with at least the attacking number of armies (more can be sent along).
* No limit to the number of attacks a player can make per turn, but they are optional.
* If attacker eliminates defender’s last territory, they gain the defender’s Risk cards.
* If attacker conquered at least one territory, draw a Risk card.
* After a player indicates they are done attacking, they should have the option to fortify – move their armies from one territory into an adjacent one… “free move”. (Simplify by removing?)
* For attacking and fortifying, at least one army must stay behind, not involved in the battle (to keep the claim on the territory).

An excerpt from the Risk Wikipedia article gives these rule variations for the two-player version of Risk:

This 2-player version is played according to the traditional rules of Risk. Each player takes 40 armies and alternately places one army on an unoccupied territory until each has occupied 14 territories. The remaining armies are alternately distributed on the occupied territories. The remaining 14 territories are occupied by a force called the Allied Army. These armies are composed of playing pieces different in color from those used by the two players. Two Allied Armies will be placed on each unoccupied territory for a total of 28 armies.

Each player attacks according to the traditional rules. A player may attack the other player or the Allied Army. When a player attacks the Allied Army, the other player rolls the dice for the Allied Army.

The game ends when one player loses all his territories. If the Allied Army loses all its territories, game play is continued according to the traditional rules.

However, this might create some challenges, having to work with the AI. This might make three-player Risk easier to implement for our purposes.