**TODO list:**

Project requirements, features, and cod

Question sheets need to be created

May use swing java for user interface.

using MVC model for the project

API doc(java doc or oxygen)

**Basic elements:**

1 **Map, Continents**, **country** which has a **Center (Coordonates)** and **Neighbours.**

**Players:** human player, AI player

**Army**

**Dice:** 1 army with a dice, the maximum use of dice in one turn of a battle is 3 dices

**Battle:** Attacker, Defender

**Phases** : Reinforcement, Attack, Fortification

**Cards** : Infantry, Cavalry, Artillery

**Menu** : load map, map editor,

**(old)Functional requirements lists(rules):**

**Data**

**Basic framework**

1. User can choose AI or human player from 2 to 6 players before start the game
2. Maps is composed of a .bmp file (optional) and .map file (not .txt) following this format (<http://www.windowsgames.co.uk/conquest_create.html>)
3. The program should include a map editor to let users creating new map
4. The map editor should allow the user to load and edit a map or to create it from scratch
5. May need the save file function to save the progress(not for sure)
6. It will check the correctness of map files when starting and saving the map file(like a territory with no neighbour)
7. Player will show different with colors
8. Player can choose which place he want to deploy the army before the game start(X

**Map**

1. Each map has at least 1 continent data, below have countries, and each continent has at least 1 country
2. Each continent must be a connected subgraph
3. Each map must be a connected graph
4. A map can have a maximum of 32 continents(not limited but recommended
5. A map can have a maximum of 255 countries(not limitied but recommended
6. A country can have a maximum of 10 neighbours(not limitied but recommended
7. The continents include the nearby continents that can access, army produce number, and the countries of the continent.

**Army**

1. Each country always have at least 1 army
2. Army should be unlimited in each country
3. Each player have two kind of move in one turn, attack and transport
4. The country with just only one army cannot attack other country
5. It will be a unlimited move in attack move and one chance of move in army transport move.
6. Player will get new armies when the turn start
7. Player can deploy stand by army to the player’s own territories

**Card**

1. Each player only can have five cards in hand, if a player having five cards, the player must trade cards.
2. Player will get one card in next turn only when the player attack a territory successfully.
3. When trading cards, player will get extra army in this turn.(player can only trade cards in attack move)
4. Player need to spend 3 cards to trade
5. If a player defeat another player in attack, the winner player get the defeated player’s hand cards in this turn.

**Dice**

1. May need a auto roll function to fight until one player win when the army is too big (such as 100 vs 100)

**Playing rules**

The game begins with Startup phase. Can be random army assignment.

Then, there are the 3 following phases, in this order: Reinforcement, Attack and Fortification phase.

**Attack Phase**

All armies (-1) from attacking territory participate to a battle.

Attacking territory must have at least 2 armies (1 stays, 1 attacks)

**Battle**

1- Compare the biggest dice number

2- The larger number wins and decreases the smaller one’s army with 1 lose 1 army. If the attacker’s dice number is same with the defender’s dice number, the defender win.

3- Compare the second biggest dice in case there are many dices in both sides.

Defender has 1 or 2 dices depending on the number of armies.

Attacker has 1, 2 or 3 dice depending on the number of armies ENGAGED (-1 comparing with the number of armies on the attacker's territory).

**Trading cards**

A player CAN trade only during Reinforcement phase :

* 3 cards of the same type
* 3 different cards
* 1 wild card(I’m not sure which one of the three cards is that><) with other two card

M not sure we have to use wild cards, as you want. I think we can play with or without it. Do u want to include the wild cards?

I think we can just ignore it as well as for the mission cards because it is not describe in the project

He MUST exchange 3 cards when he has 5 cards.

The first time a player trades cards, he gets 5 armies. Then it increases by 5 each time ANY player trades. (The second player to trade gets 10 cards).

**Questions & Answers**

* Maximum size : Do we have to handle a maximum size for number of armies, countries, continents… ? No maximal number
* Do we have to make a real GUI (with BMP files & Swing for example) ? **Not asked, we can print in console**
* What kind of GUI is expected for build 1, for map editor ? (Console ?)
* Should the probability of getting a certain type of card remain the same during the game (always 33% ?)
* Is MVC architecture recommended for the project ? **Yes**
* Do we have to save the progress of a game?(like what kind of functions should include in menu)
* The “game driver” is like a controller class that will control execution flow of the game? **Yes for example it will call player.Reinforcement() then Attack….**

Is the program starts as we open a map file or the program open a map file start a game.

* What is the minimal number of continents and territories? **Territory = Number of players, Continents = 1**
* Can we choose the number of armies we want to engage in attack? **No**
* Do we have to use wild cards? no

For javadoc warning go to window > preference > Java > compiler > javadoc > activate the warnings. It will show up on “problems” perspective.

**Build 1 docs**

Map → continent → country

**Map editor**

1.The program should include a map editor to let users creating new map(can be separate from the main .exe)

2. Maps is composed of a .bmp file (optional) and .map file (not .txt) following this format (<http://www.windowsgames.co.uk/conquest_create.html>)

3.The map editor should allow the user to load and edit a map or to create it from scratch

4. Program will check the correctness of map files when starting and saving the map file(like a territory with no neighbour)

5.Each map has at least 1 continent data, below have countries, and each continent has at least 1 country

6. Each continent must be a connected subgraph. Each continent should contain at least 1 country.

7. Each map must be a connected graph

8. The continents include the nearby continents that can access, army produce number, and the territory of the continent.

9. The countries should be >= than player number

**Start Phase**

Game starts by user selection of a user-saved map file.

1. The program can open a map file that edit or create by users from folders.

2. The program only load files as connected subgraph to ensure the performance

3. User can select 2~6 Players before starting the game

4. Players will show different with colors

6. When starting the game, players’ army will randomly assign into the continents and countries

7. The game will have initial armies and separate into players(numbers of initial armies of each player depends on numbers of players)

8. The stand by armies can be Deploy by players one by one to their own countries

9. One country cannot be owned by two players

10. Any country must owned by one of the player in the game

11. Any country must not less than one army

**Reinforcement Phase**

1. The game will check the correctness of armies’ number with Risk rules

2. The stand by armies must be deployed when the game started or the turn ended

3. A player receives (number of armies /3 and rounded down) armies. In any case he gets at least 3 armies.

If he has all countries of a continent he gets extra armies each turn:

- Africa 3

- North America 5

- South America 2

- Asia 7

- Europe 5

- Oceania 2

**Fortification phase**

1. Implementation of a valid fortification move according to the Risk rules.

2. Each player have two kind of move in one turn, attack and transport

3. It will be a unlimited move in attack move and one chance of move in army transport move.

4. When transporting the army, must leave at least one army in the country, and countries with only one army cannot move the army(however, it can be transporting army by other countries that with more than 1 army)

5. The armies only can be moved to the neighbor of the country.