

Requirements specification

Updates to initial Plan

Since the initial plan, we have changed the language and environment we want to use. We decided to change from Lua to Java, using the LibGDX game engine. This decision came partly down to the fact that the inter-group committee decided on using Google's [Protocol Buffers](#), which Lua has no stable first or third-party library for. We decided quickly that the task of writing a library of our own was too big of a project in itself. As such, we decided that a quality implementation using Java (something we're all familiar with) and LibGDX (something we're all novices with) would make for a more practical goal; this way, we have a healthy balance of new vs old and don't have to worry about as substantial of a learning curve or infrastructure.

Rules/Rules Management

At a minimum the finished solution must enforce all the rules from the base game. The game will have a client / server architecture.

- Basic game loop (run on server)
 - Resource collection
 - Maintaining of game's state (turn, number of players, locations of each player's buildings, each player's victory points, etc).
 - Handling / alternating turns. To facilitate this, we will abstract over the type of player (human, network, ai) in order to make the code simpler and more maintainable. All players will be clients to the server, with the exception of the host (ai or human).
 - Dice roll (handled by the server).
 - Loop terminated on condition that someone has over 10 victory points.
- GUI that aids in the game's playability.
 - Good camera angle
 - Intuitive communication between players
 - Understandable art assets and sprites
- Internal board representation and translation of moves into the common protocol.
- Basic AI
- Networking (implementation of common protocols between groups)
- Bank for allocating resources. This will also facilitate the exchange of resources for development cards, settlements and roads, etc.
- Development cards
- Trading / communicating with other players and the bank
- Settlement and road construction
- Longest road
- Largest Army
- Robber

Things we would like to implement

- Allow the user to save a game and come back to it
- Allow 5 or 6 players
- Have different board layouts
- Advanced graphics
- Different camera angles

Project Management

- Trello will be used for task management
- Slack will be used to aid communication