**City Based RISK Game Design Summary**

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As the project enters the design phase, it’s important to recognize the necessary design goals. The design goals for the project are as follows:

1. Proper functionality of the game
2. Proper implementation of *Casual*, *Competitive*, *Tournament*, and *Offline* game modes.
3. Proper user account creation setup
4. Robust graphical user interface
5. Consistently stable connection between players and the game servers.
6. Adequate storage capacity for each unique user account’s information.

In order for the game to be set up properly, the classes that are needed as well as a brief description are as follows:

* Match: Object which handles interactions during gameplay such as passing turns to the next player and handling their moves with the other game objects.
* Player: Object of an entity interacting with the game. Subclassed by Human and AI classes.
* GameMap: Singleton object resembling a graph data structure. Consists of intersections as nodes. Only one instance per match.
* Street: An object resembling a physical street on a map.
* Intersection: Object resembling a node a node in a graph. Contains 2 or more Street objects.
* TerritoryCard: An object given to a player after they completed a successful attack phase.

The game will also utilize the following interfaces:

* PlayerFunctionality:
  + attackIntersection
  + reinforceIntersection
  + endTurn
* GameFunctionality
  + rollDice
  + checkPlayerEliminated
  + checkForWinner

The system needs to be set up in such a way that only the appropriate parties have the correct access privileges corresponding their status. System administrators would not have access to a user’s account information, but would have access to the network and databases. Similarly, a player would have access to their own account information

There should be several different user interfaces within the game. They are as follows:

* Main Menu Screen
* Start Singleplayer / Multiplayer Screens
* Create Account Screen
* In-Game Screen

The proposed system architecture will follow the client-server model, with a game server and each individual player as a client. The server will connect players to other players in the same game using a match host.

At this point, no issues have been raised concerning the system, but that is subject to change in the future. A reusable component for this project will be the Google Maps API which will be utilized when new maps are being created for each match.

The project will cost roughly $5,000,000 accounting for 12 months of development time and maintaining the system for at least 5 more years after that.

There is not any emphasis on a certain programming language for this project. The developers can decide amongst themselves on which programming language would be a better fit for their project. The developer team can decide on an IDE of their choosing.

The developing team can choose a library or external framework they would like to use for this project.