In this evolution, we are going to present you with some choices. Choose **one** from the first group and **one** from the second group, and **one** feature that is your own idea.

The feature that is your own idea should add/alter some interesting aspect of the game play. It cannot just remove a feature that you added in a previous evolution (*e.g.*, you can't just take out upgrades). It also must add some different behavior (*e.g.*, you can't just add another upgrade level to the standard technology upgrades). Your first deliverable (**due 4/17**) is to describe the requirements for your own feature to your TA.

Group 1 (selection one option):

Fog of War Instead of displaying the entire map to every player, you should restrict the display to what can be seen.

- A player's own territories are visible to them.
- Any immediately adjacent enemy territory is visible to the player.
- Spies are a new unit that you can upgrade (costs technology resources, available at upgrade level 1) to that can travel to enemy territories. When a spy is in an enemy territory, you can see that territory, even if it is not adjacent. Spies only move 1 territory at a time in enemy territory. Spies are invisible to all other players.
- For any territory that has never been seen, only the outline should be displayed, but no information about who occupies it, how many troops are there, etc.
- If you have previously seen a territory, but cannot see it now (*i.e*, lost your adjacent territory) you should show what you knew about it in the past, but with clear indicate that the information is old (*e.g.*, gray coloring).
- Cloaking can be researched at upgrade level 3 or higher (costs technology resources to research). Once researched, a player can issue an order to cloak a territory, which costs technology resources per territory cloaked, and hides that territory from view for 3 turns. This cloaking only hides from "adjacency" viewing, not from a spy in the territory.

Chat+ Alliances First, introduce an in-game chat function (so players can discuss forming alliances with each other). Second, allow players to form alliances (as long as there are at least 3 players in the game).

- You will introduce a new "form alliance" order, which specifies the player you want to form an alliance with. For this to work, if A enters "form alliance with B" then B must enter "form alliance with A" on the same turn.
- If allied players attack a territory at the same time, then their units form one large combined force (as if one player were attacking from two territories).
- You can be stationed in and move through an allied players territory as if it were your own.
- If you attack your allied player's territory, you break the alliance. If A breaks an alliance with B, and B has units in A's territories, then B's units return to the nearest (break ties randomly) B-owned territory at before any other actions are resolved (*i.e.* are available to defend those territories).

Group 2 (selection one option):

AI Make an *intelligent* computer adversary. For full credit on this, any number of the players in the game should be able to be AI computer players, who use a good strategy, and are fun/interesting to play against.

Impressive UI Wow us with a beautiful, easy to use interface. Many of you have UIs that are functional, but are far from what you would want in a real game. For full credit in this, your UI should look like something that would be in a real game that people pay money to play.

Resilience + Persistence The server should not only save state in a persistent way (such as a database), but should be able to recover from any problem reasonably and automatically. For full credit on this, your TA should be able to hit "Power Off" on the server VM at *any* time, and then "Power On" and return to a valid/recent game state. Note that using a database is only part of the question—you need to make correct use of transactions, as well as automate your server coming back up after a power outage.

You *may* do more than the required features for extra credit. Please note that the features in Group 2 have a wide range of how good they are, and will be graded accordingly. For example, a very simple AI will receive many fewer points than a sophisticated AI.

Group 3 (describe your own): Make up your own interesting feature. Describe it to your TA, iterate with your TA until you agree on what this feature is. Then do it!

Smaller groups Groups with 3 members may either (a) do on item from Group 1 and one item from Group 2 (*i.e.*, skip proposing your own) or (b) do one item from Group 2 and propose your own (*i.e.*, skip Group 1). Note that (b) assumes that you propose a fairly substantial idea. Please talk to your TA to make sure your idea is sufficient if you choose (b).

Other: As always, please submit a project management plan to your TA early (having this when you discuss your feature is a great idea). You will also, of course, be graded on design, process, and testing as before.