

Charter

Members: Sam Zhou (tz66), Max Jiang (qj46), Riley Niu (hn263), Ke Huang (kh527)

1. Regular Meetings

We will hold regular team meeting for one hour on Tuesday at 4:30 pm and Thursday at 7:00 pm in Upson. The meeting time and frequency are subjected to changes in the future as the project progresses.

2. System Proposal

We want to build a sandbox military strategy simulation game. The idea is largely drawn from the Heart of Iron series and Red Alert Series. However, the key difference is that players can only write programs in a Turing complete language invented by us to control their military units instead of directly controlling them by mouse. Also, our game system will not run in real time; instead, military units execute their programs sequentially.

Our game will support these modes:

- Local mode: the player can test run the program he/she writes in a local simulation.
- Online mode: the player submits his/her program to the server to participate in a larger sandbox simulation and compete with other players.

In both modes, we will have a GUI built in HTML+JS+CSS to give user visual indications of what's going on in each step of the simulation.

The map will be a rectangular grids with 4 different tiles: empty tile, impassable mountain tiles, fort tile that gives the occupier defensive bonus and city tile that enables the occupier to conscript.

Each military unit's program should eventually return one of the following commands: do nothing, attack the unit in front of it, train its soldiers, turn around, move forward/backward, create a military sub-unit, or upgrade its tile. In case a command fails or the program enters a long loop, the system will choose do nothing for that unit.

The programming language will be a much simpler subset of Java, where there are only int type, int array type, and command type. Program can only do primitive operations on these data and call some built-in function (like nearby) to get the surrounding information. Since the language is Turing complete, we do support if, while loop and break control flow.