AP Computer Science
Mr Hanley

Assignment x: Turn Based Strategy Game

Overview

Create a java project, you may work with a partner.

"Turn based strategy games, unlike Real time strategy games, allow players to execute careful, deliberate calculations on a static environment, one that does not change while the player is thinking. The gameplay focuses on specific units, characters that move about onn a board-game-like grid(often composed of square or hexagonal tiles), and tends to have a more intricate system of interactions between units. Common examples of TBS games are Sid Meier's Civilization series, the Total War series (which also involves Real Time Strategy), and the Heroes of Might and Magic series." From University of Arizona CSC 335 Spring 2012 course final project Dylan Clavell professor.

Your Game

You must create your own TBS, you can choose any theme you would like. Though most games involve combat or have historical connotations, they can range from futuristic settings in alternate universes to games simulating trading or cultural expansion. Your game must generate or load a gridded map on which you can compete with an enemy player by maneuvering your units and exploring the board on your turn. Once you pass your turn, each other player will go around the board, taking their turn, moving units and interacting with yours. The game will end when one player satisfies a win condition.

Tools

You are encouraged to use NetBeans as your primary development tool. It is possible to build the game using Processing, P5.js, Unity or Roblox. If you are not familiar with these tools, don't try to use them on this project.

Map

Your game is based on a map.

You may design a map on graph paper or hexagonal graph paper and then figure out a way to enter it into a computer file.

Your game should read in the map in the beginning and use that for the world.

It is possible to have multiple layers for your map;

a terrain level

buildings level

units level, etc

This way a building can be established on top of certain terrain and units can move around on top of the terrain and buildings, etc.

Your map must be at least 50 X 50

Players

Your game should allow 2-4 human players. If you have time to make an AI player that would be great.

Factions: It is possible that your game could allow players to choose from different unique groups, could be different species or personal preferences of literature.

Maps

Many TBS's use a system of squares that are unexplored, explored or foggy if there are no units that can currently see it. Don't worry about this, its too complicated for a high school class assignment. You can use different types of terrain if you want, mountainous, plain, farmland, forest, swamp. But don't worry about it if you don't want to, again probably too complicated for us.

Units

Units must be aligned to and controlled by a certain player. Any player must be able to generate its own units using resources.

Buildings

Representation: Though they are referred to as buildings, the definition of "something stationary that occupies a tile" is a bit more abstract, and allows for some subjectivity. A building might be a city or an outhouse, as long as it is a structure that does not move.

Interface

A console interface is fine.

You can also make a GUI and use a JTextArea to display a text display for the current map or try to use some sort of paint or icons. Its up to you. It seems like a real game would have a heads up display (HUD) with details about what is happening.

This is not always possible.

Game Saving

These games can take a long time to complete. You need to be able to save the state of the game to a text file that the user names. Keep track of whose turn it was and what the status of each square and units are.

Network

Ideally your game would allow one of the players to initiate a game server. This server would allow people to connect and then manage a network game. This is fairly complex coding and I don't expect anyone to be able to pull this off.

Play Testers

You will be assigned play testers from the class who will give you feedback on each iteration of your game. Try to use a series of iterations to make your project better.

Project Name	????
Class 1 Name	????
Class 2 Name	
Class 3 Name	
Class 4 Name	

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???	
TOTAL	???

Artificial_Intelligence
Dynamic_Memory
Waterfall_Model
Nested_Loops Stacks
Short_Circuit_Evaluation
Extreme_Programming
Client_Server
Hong_Kong_Fooey
Insertion_Sort
VideoInheritance
Binary_Search
Linear_nlogn
String_Games
Recursion_Search
Files
Arrays
File_Processing
Selection_Sort
Big_O_Notation
2D_Arrays
Hangman
ArrayList