

CSP 701: Assignment 3

Designing a Strategy game using OpenGL

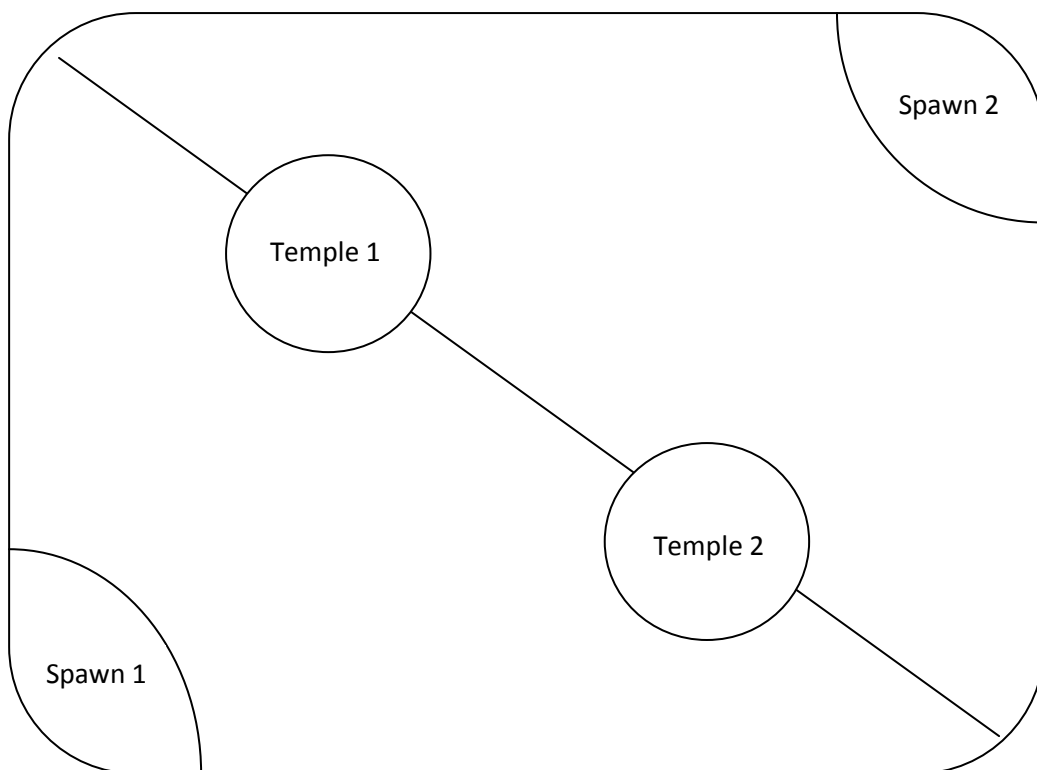
You have to develop a strategy game in C language (using OpenGL for graphic purposes). This game could be played in two mode: Bot Mode and Multi player mode. In bot mode, there will be 1 human player along with 3 other AI bot players.

Remember, this game is highly customizable by your own innovative thinking and a majority of marks will be dedicated towards it.

Game Plot:

- There will be two spawn points where 2 heroes from each team will spawn initially and after death. (after certain duration).
- There will be two temples in the map, one for each team. Temple has some immense health as compared to the heroes.
- Hero's health gets full at the instance he is in his spawn point.
- Ultimate goal of team is to defend their own temple and invade another's one. Team whose temple collapses first will lose.
- Every hero has two capabilities: base damage capability and magic capability. Every hero has unique magic power.
- Every hero has following attributes:
 - Unique magic power.(Mentioned later)
 - Unique build(agile, healthy)
 - Health points based on build.(agile <healthy)
 - Attack speed(agile>healthy)
 - Items bag
 - Movement speed
- Items add some attribute of the heroes(choice of quantity is to made by you to keep the game fair)
 - Movement speed
 - Attack speed
 - Health
 - Damage
 - Temple healer(increases health of the temple)
- So, after start of the game, heroes have to make a choice of picking some items and then go to their temple and/or other's.

- All choices regarding health point, movement speed etc has to be independently decided by you so as to make game more realistic.
- Four magical powers:
 - Disabler: disables one enemy unit for some time from using its magical power for 5 seconds or so. But, it should have lower damage comparatively.
 - Slower: Reduces the movement speed and attack speed.
 - Burst damage: Give burst damage through his magic power, but his attack speed/movement speed/ damage is lesser in comparison.
 - Stunner: Stuns an enemy unit for a very small interval of time, say 1 second or two, in which enemy unit cannot move/attack/cast spell etc.
- MAP details



- There is no visibility/accessibility of one team to others team region that is beyond the dividing line.

- Each team will get same item distributed randomly in their region.
- There will be many paths across the regions, like a jungle(designed by you).
- To move in the jungle or anywhere, use need to right click at a position and he should reach there automatically moving along the path with shortest distance.
- To attack a hero, left mouse click is used. Where, first hero reaches/pursuits the enemy target along shortest path and then on arrival near enemy, he attacks.
- **To avoid over complexity, we have removed 3D designing. You can do all this in 2D environment.**
- **Further reducing complexity, you can use any GIF,PNGs etc in your project to make it simple and look better.**

So, we have divided the game in three equal subdivisions
(Play Dota 2... or else watch trailer here

<https://www.youtube.com/watch?v=8-FDzVJWuY8>)

Remember we have made a lot of relaxations and changes.

- 1) Installing OpenGL and designing the map & heroes.
- 2) Designing attributes for heroes and items and verifying them for fairness.
- 3) Enable movement of heroes in the map and attacks.
- 4) Adding multiplayer capabilities.
- 5) Adding bots.

For networking capabilities, in start there will be one minute duration where other players may join the game. And if a player disconnects, pause the game for his reconnection. If other heroes do not join in certain interval, other users may resume the game and only one player will defend his temple.