League of Legends is a MOBA game created by players who loved the Defense of the Ancients mod. The game has two enemy forces competing to destroy the enemies Nexus or base in the game. The goal of this project is to make a very simplistic MOBA with similar rules to League:

Rules

1. The game takes place on a single map that is m x m units big. Each unit is of either a passable terrain or an impassable terrain. There must be at least 1 lane on the map that each team can traverse to get to the other side of the map[[1]](#footnote-1). The two teams competing must have identical composition in position[[2]](#footnote-2), minion spawn rates[[3]](#footnote-3), and destroyable structures[[4]](#footnote-4).
2. Each team is composed of only destroyable structures and minions. Destroyable structures are stagnant in their position, count of an impassable terrain, but can be destroyed. Here are the list of structures:
   1. Nexus – The main pieces of each team and the win condition of the opposing team. The nexus has the following attributes:
      1. Spawns 6 minions multiplied by the number of lanes every 90 time periods.
      2. Cannot regenerate
      3. Has 5000 health
      4. If the enemy team destroys all of the nexii, the enemy team wins
   2. Inhibitor – A smaller nexus, but can regenerate and does not count as the win condition. Following attributes:
      1. Spawns an alternating of 5 and 6 minions every 60 time periods
      2. Can regenerate after being destroyed (300 time periods)
      3. Has 2000 health
      4. If enemy team kills an inhib, they get a global buff for the next 120 time periods, increasing their damage by 50 percent
   3. Turret – The main defense against invading teams with the following attributes:
      1. Can shoot at targets within 8 units doing 100 damage per shot every 3 time periods
      2. Cannot regenerate
      3. Has 2500 health

Here is the list of the minions on each team:

1. Melee minion
   1. Has 250 health
   2. Does 20 damage per hit every 2 time periods
   3. Can only hit targets 1 unit away
2. Range minion
   1. Has 150 health
   2. Does 30 damage per hit every 2 time periods
   3. Can only hit targets 6 units away
3. Cannon minon
   1. Has 400 health
   2. Does 50 damage per hit every 2 time periods
   3. Can only hit target 5 units away

Minions can move into one of 8 surrounding tiles every time period. They will always prioritize enemies they can attack nearby[[5]](#footnote-5) and if there are no enemies nearby, will prioritize moving towards the enemies Nexii.

1. This lane size must be at least m / 10 units wide. [↑](#footnote-ref-1)
2. Each team needs to have identical positions, i.e. if Team 1 starts at (0, 0) then Team 2 starts at (399, 399). [↑](#footnote-ref-2)
3. If 5 minions spawn on Team 1, then 5 need to spawn on Team 2 [↑](#footnote-ref-3)
4. This includes Nexii(minimum of 1), Inhibitors, and Towers [↑](#footnote-ref-4)
5. This priorization for each minion is left up to the coder to implement [↑](#footnote-ref-5)