War simulator Specifications

# Description

The war simulator is going to use the concept of Graph nodes to simulate a war environment. Where the nodes and edges represent the area in which armies either travel or fight in, however armies are only allowed to fight in nodes and edges are for transport purposes only. Each area has a terrain type that influences the way armies interact.

An army is composed of infantry, tanks, planes and a supply unit. These four would travel together from one node to another, every time they get into a new node, they report what they find to the country object they serve, and the country would command the army on what to do, whether it be to fight, invade or retreat.

Each node would have an array of occupants and when a fight starts, all the occupants would start to fight those in different country groups. There are currently two country groups, these are called the force A and force B.

The war engine would have to keep track of the countries in both groups. A country’s flag can be in either two states, one state being their home flag combined with their country group and the other state is a white flag. If all a country’s army units are destroyed or the country’s capital city is destroyed, their flag changes to white and they should be removed from their country group. Whichever country group reaches zero first loses the war.

# Specification of each class

## Node

* A member variable which is a vector array of army objects
* A method to start a fight between the army objects
* A method to remove an army object from the array of army objects
* A method to add an army object to the array

## Edge

* A member variable of type Node called pointA
* A member variable of type Node called pointB
* A member variable of type Army called occupant that will hold the army object travelling through it
* A member variable of type int that has the amount of time required to travel

## Graph

* Methods to add, and delete both nodes and edges

## Area

* This is an abstract method where the virtual functions in italics

## Country

* A member variable of type Flag, the flag can be in three states:  
  1. Allied flag, can change to either white flag or home flag. This shows an allied country  
  2. Home flag, can change to either allied flag or white flag. This shows a lone/neutral country  
  3. White flag, cannot change, it stays this way to show a country that has surrendered and lost the war
* It should also utilize the command