

# **AREA 51**

## **A Strategy Game Using OpenGL**

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## **1 Introduction**

It is a strategy game developed in C++ language using OpenGL for graphic purposes and AI for making game more interesting . The game can be played in two modes:

- Bot mode
- Multi-Player

## **2 Detailed Design**

The game will be played by two teams in a group of two members each. Each teams agenda is to defend their own temple and invade opponents temple . The team destroying opponents temple first would be declared as winner

Every player can select their preferred choice of hero and also map it against given set of magical powers. The magical powers which can be mapped against heroes are:

- 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.
- tunner: 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.

Every hero can have following attributes associated with him :

- Attack speed

- Items bag
- Movement speed
- Unique magic power

To make game more interesting items with several advantages will be generated with time. Few of the advantages provided by items are as following:

- Movement speed
- Attack speed
- Health
- Damage
- Temple healer

In multibot environment of game, Socket programming is being used to communicate and sync positions and status of game. The Opengl is used to make UI of game impressive.

A\* algorithm is implemented to find shortest path from current location of hero to desired location of hero considering all the obstacles in between. The distance between two points heuristic is used to fetch path in minimum time.

### **3 Glimp of game:**



Figure 1: Start Page for Game.



Figure 2: Page to select preferred hero.



Figure 3: Map of Game.