
The Fullmoon is rising.
I'm getting too old for this sh*t olde Harold thought to himself as he donned his helmet.
But... One should be thankful to have a job these days.
... and the pension plan is pretty solid.


- Evening Folks!
Harold shook hands with
Seb and Eleanor.
- You ready? Harold Asked.
Seb nodded, looking eager.
(it was only his third shift)
- Sure, said Eleanor.
Meet up at the Tankard after
work today?
Seb nodded, looking eager.
- I really shouldn't... said Harold,
The Apothecary says the Spirit Juice
is what causes my Grumblegut.
- Suit yourself. We're just gonna
grab one small Pint.
- One Pint? ... Well I guess one little
Pint won't hurt... Especially not
after working...


The KnightShift

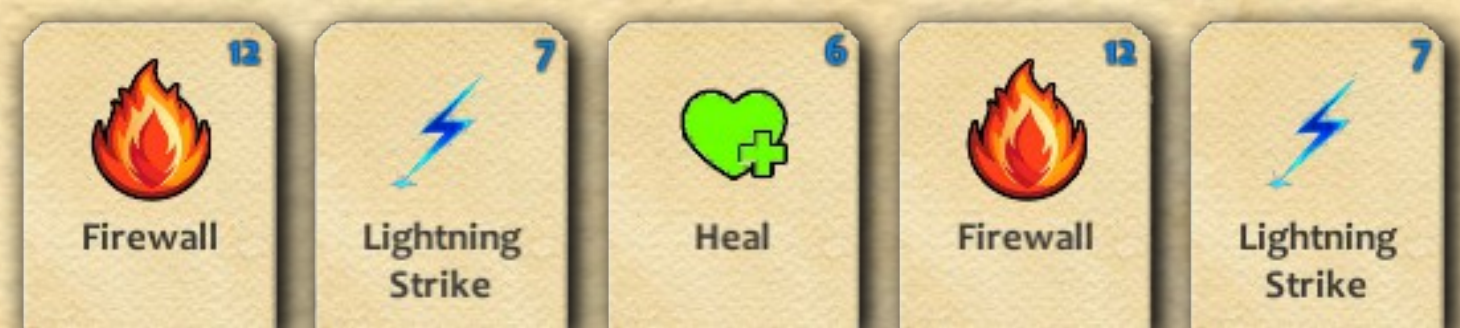
G: The Card Stack

- Open **Cards.cs** and implement the 2 stack properties:

```
DrawCards
DiscardCards
```

- Implement the following functions according to the comments:

```
DrawCard()
DiscardCard()
ShuffleDeck()
```



G: The Firewall

- Open **Card_Firewall.cs** and implement the following functions according to the comments:

```
CalculateNodes()
GetPreviewEffect()
Perform()
```

NOTE: *The order of the firewall nodes should be alternating North and South starting from the Mouse position.*

See comments in CalculateNodes()

G: Damage Over Time

Some spells can give units **Damage Over Time (DOT)** effects.

This could be a **Burning** or a **Poison** effect that gives 2- 3 damage per second over a time period (5 - 10 seconds).

The Unit should be able to be affected by multiple instances of **Damage Over Time** effects (So for example a single unit could have 2 active Burning and 1 active Poison at the same time).

G: Damage Over Time *continued*

1. Create a **Burning.cs** script that inherits from **DamageOverTime.cs**

2. Analyze and Choose a good data structure in **Unit.cs** to store and manage multiple DamageOverTime effects. In the top of Unit.cs write a few comment lines why you chose this particular data structure.

3. Call **DamageOverTime.Update()** once per frame for each effect from the Unit.

4. Remove any DOT effects where the IsDone property is true.

5. Create a new or modify an existing script to manage **'Burning Nodes'**. Analyze and choose a fitting data structure to manage what Nodes are currently burning (and for how long). In this script, write a few comment in the top of the file why you chose this particular data structure to store the **'Burning Nodes'**.

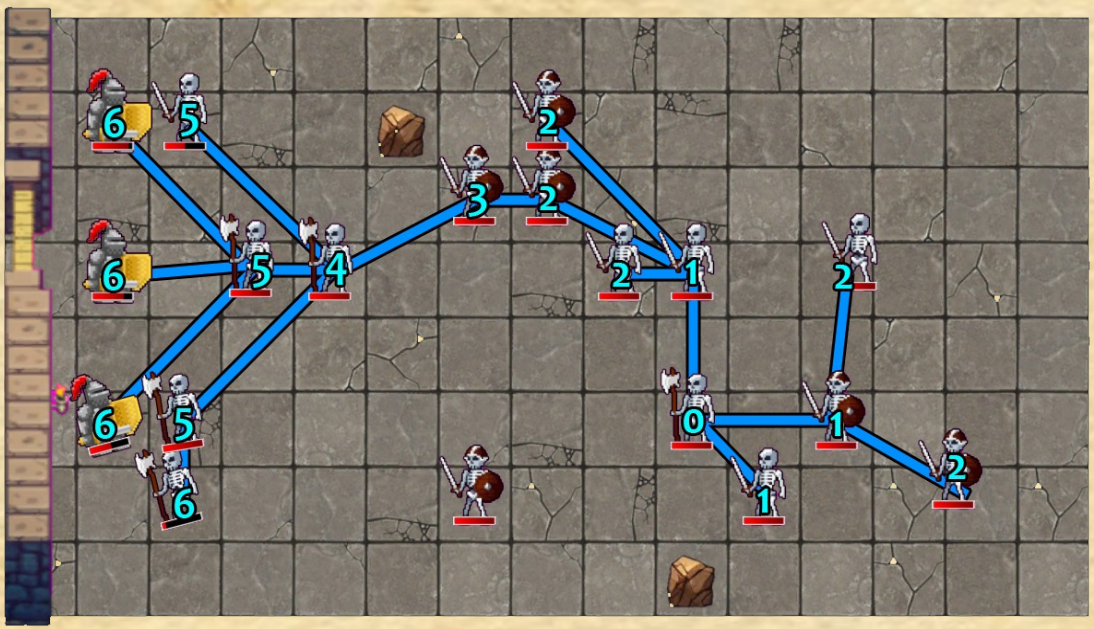
6. Add a Burning DOT effect to each Unit that stands in or enters into a burning tile.

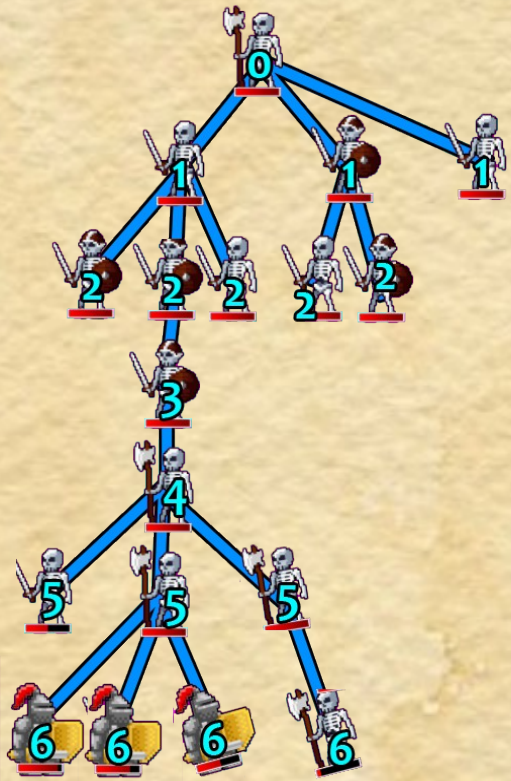
VG: Chain Lightning

1. Starting from the selected Unit, create a Tree structure by:
    a) Find closest 3 *unvisited* units within a radius of 2 tiles
    b) Add these as Units as children nodes to the current node (and mark them as visisted)
    c) Recursively create child nodes until no unvisited units exists with a radius of 2 or all the units have been visited
    d) A Unit can only exits once in the tree (Heroes included)

2. Find the Deepest Child in the Tree (this is your target unit). If many units have the same depth, pick 1 random from these.

3. Generate the Chain Lightning from your starting unit to the target unit dealing damage to all units on the path from start to target. See Effects.CreateLightning().





VG: Fireball

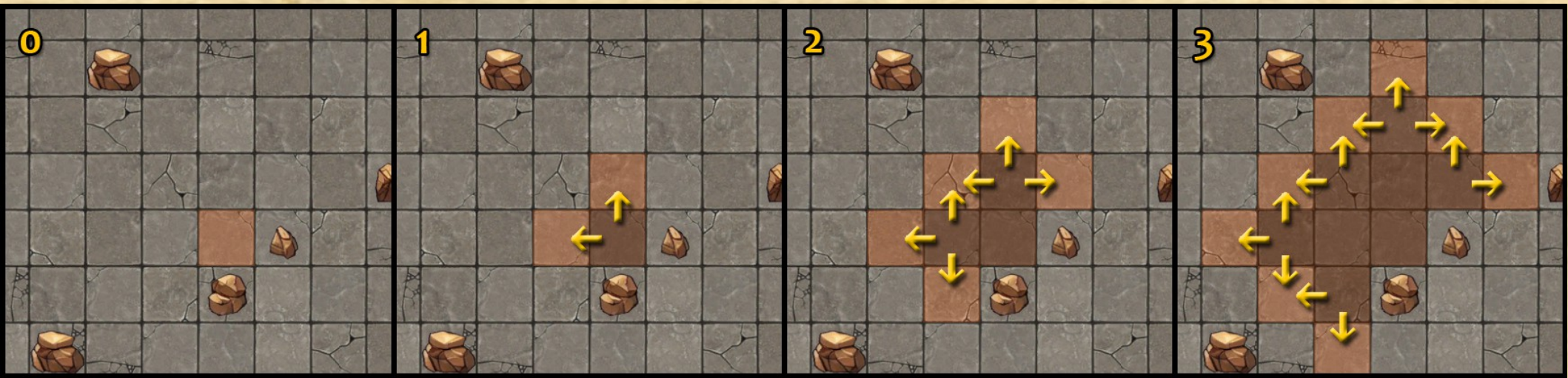
1. Starting from the selected Node, add the Node to a HashSet

2. Grow this HashSet in all 4 cardinal directions (North, East, West and South)

3. Add only Walkable Nodes to the HashSet (e.g. Rocks block Fireball expansion)

4. Repeat 3 times

5. Add the resulting Nodes in the HashSet to the **'Burning Nodes'**



What to Send In?

- Pack up your project
  (first remove all temporary files and folders, the only folders needed to be in the package is [Assets, Packages, ProjectSettings] everything else can be removed)

- Pack the files into a single **ZIP** file
  *(no ***.7z** or ***.rar** files please)*

- *Name your zip file **'firstname_lastname.zip'***
  *Where you use your **OWN** first name and last name.*
  I don't want to get an actual 'firstname_lastname.zip' file... Yes this happens..

When to Send In?

Please upload your assignment to Omniway before ***16:00*** *on* ***Wednesday*** *the 3rd of* ***December***

Grading

G: All tasks marked with G completed

VG: All tasks completed


Alrighty then, if olde Harold can drag his behind to the KnightShift each fullmoon...
Then I guess I can deal with this little assignment.
Good Luck!