



*Realm of Kaodith*

**Design Document**

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## Introduction

Realm of Kaodith is a complex turn based strategy game set in fantasy world where cunning planning determines the fate of kingdoms at war. You are the leader of one such kingdom, with a rival warlord nearby. Your people have entrusted you with their protection, and as such, it is your duty to dispatch the enemies who threaten your borders. With each passing day, you will issue orders from your fortress in an effort to destroy the enemy while preserving your own stronghold. In order to do battle, the citizens of Kaodith must be called upon to wage war. Ordinary citizens may be conscripted as soldiers or workers. However, with a larger investment, powerful heroes can be trained at the fortress. These heroes, ranging from stalwart knights to dark wizards, wield powerful weapons, armor, and magic. Maximizing the potential of these heroes by playing to their strengths, and protecting their weaknesses, is the key to victory in Kaodith. As lord of the realm it is your duty to protect your people whatever the cost. The destruction of your fortress is unacceptable, while the destruction of the enemy fortress is worth whatever cost your people may bear.

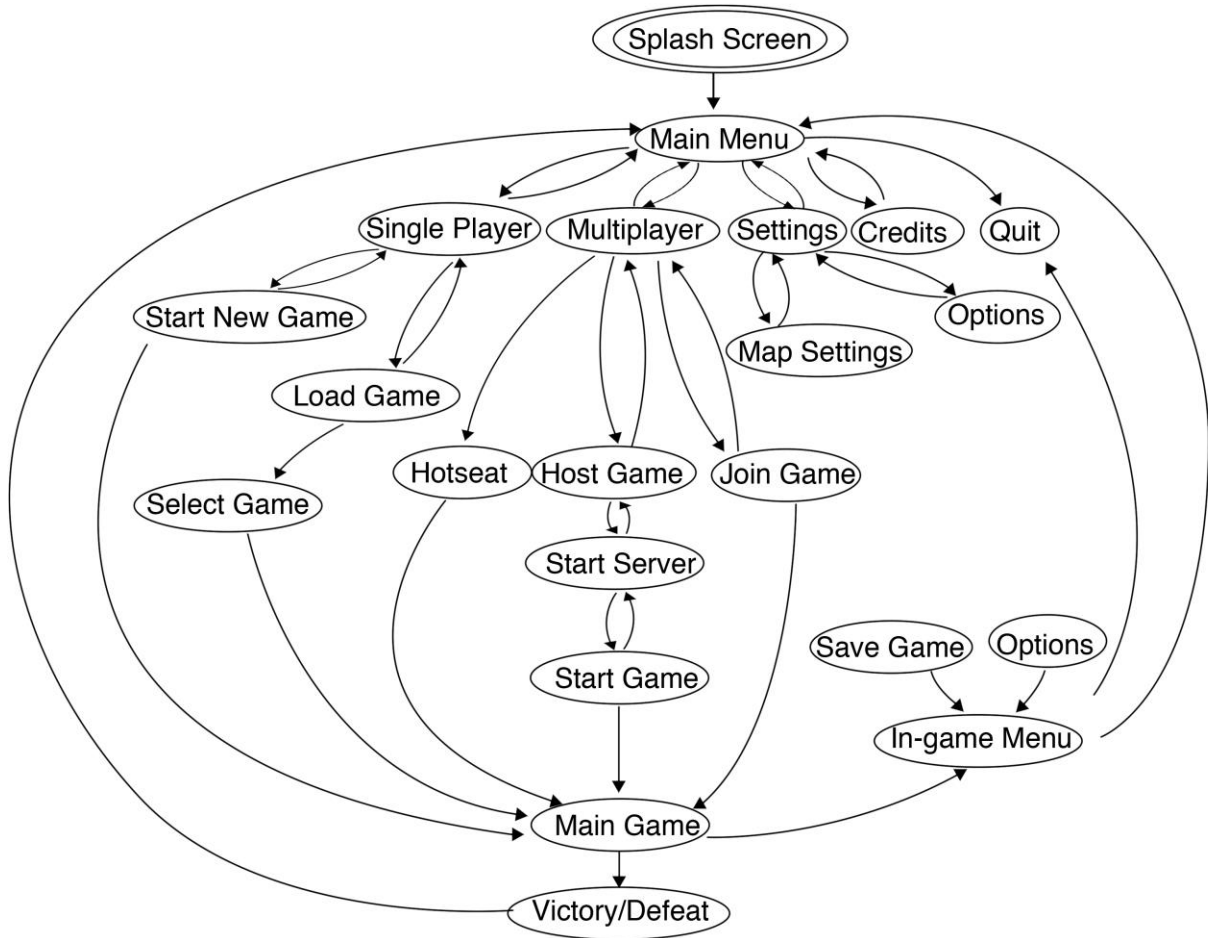
Your fortress does not stand defenseless. With hard work, your people may construct a mighty citadel to stand the test of time. The citadel will pave the way for powerful structures capable of turning the tide of battle. Reach out to the Aetherial plane and delve into the secrets of magic, construct a massive weapon of unbridled destruction, or touch the sky and know what lies below beyond the borders of your land. These works will require resources, which are ripe for the taking — ancient mines dot the islands of Kaodith. Humming with an arcane energy, they only wait to be activated once more for the riches to flow from the very earth. Capturing these mines will fuel your war machine, but beware, your enemy covets this power as well and you can expect a fight for control.

Not all paths lead to victory; you cannot invest in every style of warfare. Focus will allow your power to be unmatched in the areas of your choice, while a lack of focus may leave you scattered and lost. Will you build a vast army and overwhelm your enemy? Perhaps you will train powerful mages to bend the very bones of the earth to your will. Ambushing and spying may serve you best. Many choices lie before you, all that is left is to choose a path. Through careful strategy and planning, you may overcome your enemy, and come to rule over all that is the Realm of Kaodith.

## Frequently Asked Questions

- *Is this game fun?*  
Absolutely.
- *How long does a game take?*  
That depends on a lot of things. Games can take anywhere between 10 minutes and a few hours. With an easy opponent and a good strategy the game could be over before you know it. More likely, your opponent will put up a decent fight requiring you to take the time to build up your army and defenses before securing a victory.
- *What makes the game balanced?*  
We've done our best to have each class excel at specific tasks. Not all units are great fighters but they will make up for it in other areas such as being able to prevent enemies from moving or attacking, or being defensive and soaking up all of the enemy damage. Each powerful ability was also given some sort of counter. For example, the high mage can change the height of tiles to make walls and prevent certain paths but a paladin is able to revert these height changes. In addition values such as damage, mana cost, and cool down are constantly being tweaked as we get feedback from play testers to make each unit fair.
- *How many units do I control?*  
This will depend on your wheat which determines the unit cap. Lesser units take 5-10 wheat each while hero units require 15 wheat. With a max of 200 total wheat this means you can have up to 40 lesser units or 13 hero units.
- *How many players are in a game?*  
As of right now, there is a maximum of two players. We hope to increase this cap in the future but have many additional features that would need to be added as well in order to make it a more enjoyable experience.
- *Game specifications*  
Realm of Kaodith was built using Unity and written in C#. Unity supports many operating systems including Windows, Mac OS X, Linux, iOS and Xbox 360. We have tested to ensure it will run on Windows and Mac. iOS and Xbox 360 will likely have issues with controllability and we have not tested Linux, so we make no guarantees about bug free gameplay. We think mobile gameplay would be wonderful but a lot of work would need to be done to ensure the controls and GUI are acceptable.  
Realm of Kaodith has been created as part of the Advanced Game Design capstone course at Ohio State University from January to April of 2013.

# Game State Diagram



## Rules of the Game

### Victory conditions

In order to win a match in Realm of Kaodith you must simply destroy the enemy fortress. There are no other requirements so the method of accomplishing this is up to the player. Capturing mines, creating an army, and building structures will likely make this task easier, but none of them are required as long as you manage to destroy the enemy base and defend your own.

### Unit Caps

The size of a player's army is limited by the amount of wheat they have. Units require wheat depending on the type of unit. If you do not have enough wheat to support your units you will not be able to create any more. Your wheat starts at 50 and can be increased by 25 for each farm you build resulting in a total of 200 wheat. Workers require 5 wheat each, conscripts require 10 wheat, and all other hero units require 15 wheat to train.

### Income

Players begin with 250 gold and gain 40 gold each time their turn begins. Income can be increased by capturing mines using a worker unit. Each mine captured will increase the income by 25. Once captured, the player will need to defend it, as it may be recaptured by an enemy worker. Mines are randomly placed on the map at the start of the game. The exact number of mines depends on the size of the map (the larger the map, the more mines); however, there will always be an odd amount — ensuring that if all mines are captured, one player will have a greater income than the other. Mines cannot be destroyed. The owner of a mine can be determined by (1) the color of the light around the mine, (2) the color of the selection icon when the mine is selected, or (3) the color of the mine as it appears on the minimap.

### Pathing

When giving a unit an order to move, the game will attempt to find the fastest path to the target location. Moving to a tile normally costs 1 AP (Action Points, or Ability Points), except for swamp tiles, which cost 2 AP. These costs are factored in to the path finding. Spells such as traps, fire, or other tile debuffs are not taken into account by the path finder. To ensure these are avoided, use smaller move commands of only one or two tiles. If a move command exceeds the range allowed by the unit's AP, the path will be saved and the unit will continue moving on the player's next turn.

Path finding will take impassable terrain (water, mountains, and cliffs) into account as long as they are visible. If these tiles are hidden under complete fog of war (explained in the next section) the pathfinder will consider them to be passable terrain. If the tile is revealed while walking, the pathfinder can recalculate the path as needed.

### Fog of War

Realm of Kaodith has a two-layer fog of war system. Complete fog hides everything in the tile including the tile type. Partial fog will hide all units but still displays the tile type and structures that are built on the tile. When fog of war is enabled, the entire map except for the tiles around the player's fortress will be covered in complete fog. Both types of fog are removed when the tile is within sight range of a unit or structure. Once complete fog is removed it will never come back. If a tile is revealed and then leaves sight range again (such as when a unit moves away or dies) it will become covered with partial fog.

## Minigames

There are currently two “minigames” in Realm of Kaodith. Both are unit abilities and how well you do in the minigame will determine how effective the spell is.

- Joust:

Unit: Champion

Objective: Stop the bar in the middle of the gradient. The closer to the center you are the more damage the ability will do.

- Maraud:

Unit: Marauder

Objective: Press the arrow key corresponding to the arrows on screen. For each arrow you hit correctly the amount of money you steal is increased. If you hit an arrow incorrectly it will decrease this amount. You cannot go below 0 gold stolen and cannot steal more gold than the enemy has.

## Actions

The following is a list of the main actions that can be made by a player during their turn.

### **1. Train a unit**

Create a worker, conscript, or hero unit as long as the player has enough gold, wheat, and free space surrounding the fortress. If these conditions are not met, the create unit button will be grey and the create unit menu cannot be opened. Units are listed in the *Units* section.

### **2. Construct a structure or upgrade**

Create a freestanding structure or capture a mine using the worker unit. Create structures or upgrades using the fortress. Again, both require sufficient money or the construction cannot be accomplished. Structure and upgrade types are listed in the *Structures* section.

### **3. Unit Commands**

- Move – The unit can move to a tile within the range determined by its action points. The unit cannot move to a tile occupied by another unit, structure, or water or mountain tiles.
- Basic attack – The unit can hit an enemy within its attack range with a basic attack dealing damage equal to the unit’s attack damage stat.
- Defend – The unit enters a defensive stance. Defend benefits the unit differently depending on the unit type. See the units section for these effects. The unit will exit



defend if it moves or uses Recovery. It costs all remaining action points (AP) to enter Defend and 1 AP to exit.

- Recovery – The unit enters recovery stance. While in recovery the unit will recover 10% of their maximum health each turn. The unit will exit recovery if it is attacked, moves, or uses Defend. It costs all remaining action points (AP) to enter Recovery and 1 AP to exit.
- Cast Spell – Hero units all have 4 unique abilities they can cast. Ability descriptions are located in the units section of this document.

#### 4. Structure Commands








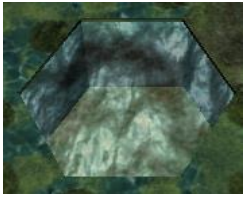
- Demolish – Destroys the structure but returns half of the cost to construct it.
- Special ability – Some structures have the ability to attack or reveal. These are described in detail in the structures section.

## Game Modes

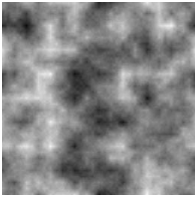
- **Single Player:** Play against the computer. Due to limited development time the current AI is fairly trivial and will not take much effort to defeat.
- **Hot Seat:** Two player game sharing the same computer. After a player ends their turn the game hides all game information allowing the players to swap positions.
- **Networked:** Two player game across the internet. Realm of Kaodith does not support LAN play without an internet connection at the time. If you have connection issues please ensure your operating system is not blocking the game's access to the internet.

## The Map

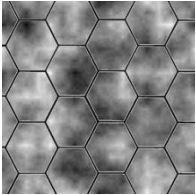
### Tile Types

	<p><u>Mountain</u></p> <p>Towering peaks create impassable terrain. Cannot be targeted by spells.</p>		<p><u>Rocky Ground</u></p> <p>Transitional tile between mountains and dirt.</p>
	<p><u>Dirt</u></p> <p>Mix of clay and sand. Too dry to grow plants. Tile has no effects on units.</p>		<p><u>Scrubland</u></p> <p>Transitional tile between dirt and grass fields.</p>
	<p><u>Grass Field</u></p> <p>Wide stretch of green grass. Tile has no effects on units.</p>		<p><u>Treeline</u></p> <p>Transitional tile from grass fields to forests.</p>
	<p><u>Forest</u></p> <p>Large trees cover the ground below in shade. Units have their sight range reduced by 10.</p>		<p><u>Swamp</u></p> <p>Forested wetland. Takes extra effort to navigate. Costs units 2 AP to enter.</p>
	<p><u>Water</u></p> <p>Deep waters that cannot be crossed by units. Cannot be targeted by spells.</p>		

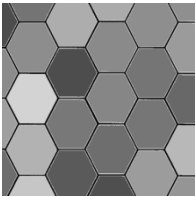
## Map Generation



1. We generate perlin noise similar to the picture shown. The size of the perlin noise is dependent on the size of the map.



2. We figure out which pixels would be contained within each hexagon when a hexagon grid overlays the perlin noise. While this image demonstrating the idea covers many pixels, the hexes in our implementation only cover an area of about 4 pixels in order to reduce waste and increase efficiency.

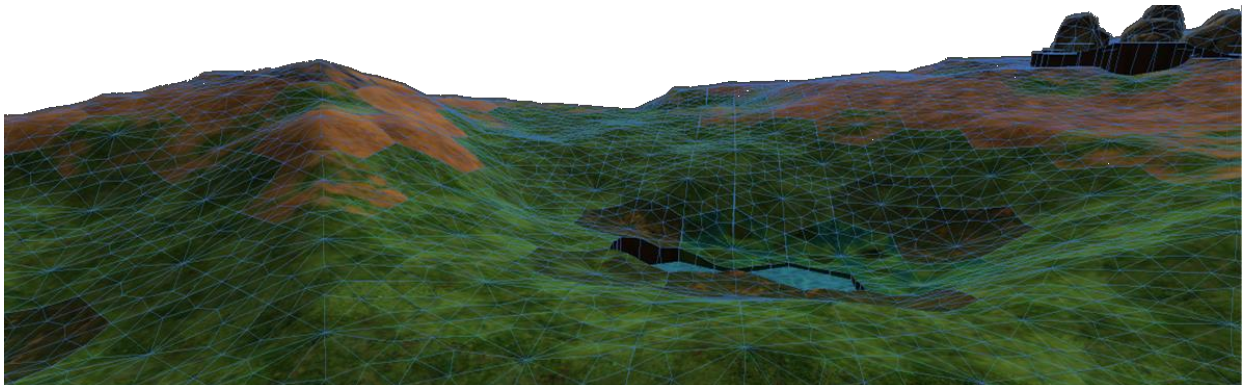


3. When then average the values of the pixels within each hexagon. This gives the hexagon an average “height”. The heights are used to determine which terrain type the tile should be.

This method creates localized features such as lakes and mountain ranges that look natural. The pseudo-randomness of the map generation also ensures that every game played will likely have a unique map, increasing the replayability of the game.

## Tile Smoothing

In order to smooth out the height differences between adjacent tiles, a three-dimensional spline interpolation (two-dimensional over the tiles, but also smoothed over time due to the presence of various spell effects that can modify the terrain) is used to represent the virtual terrain surface, and units move along this surface. Additionally, sufficiently steep slopes are replaced with vertical drops which act as impassable “cliffs” for units and make finding short routes between two points a tricky proposition, especially if the units (or the player) cannot see faraway terrain at all, due to the fog of war.



## Map Options

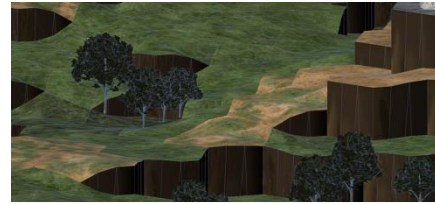
The map generation is fairly customizable by the player. Players have the ability to change the size, height, and terrain type of the map.

**Size:** Determines how large the map is. Players can choose from small, medium, large, huge, and colossal. The Dev team advises players to stay away from colossal maps. They slow down the frame rate and result in extremely long games.

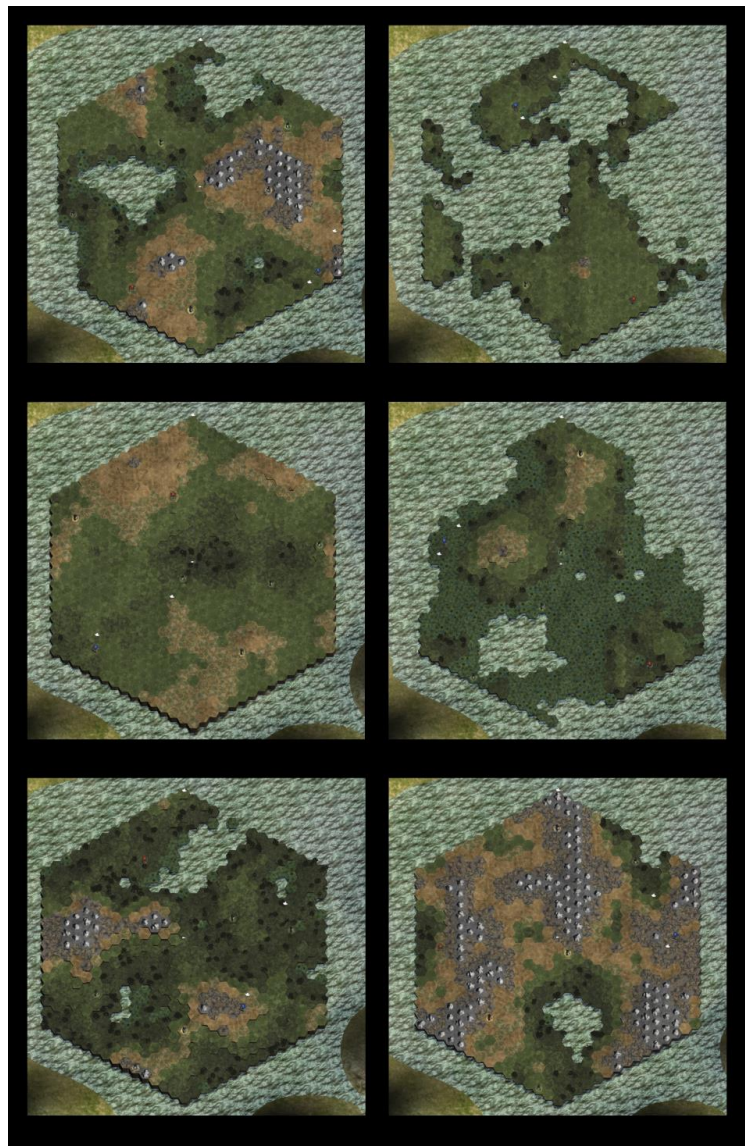
**Height:** Determines how much of a height disparity should exist between tiles. Players can choose from flat, hilly, rugged, steep and 'why?'. The higher the map, the more cliffs there will be and the harder it will become to navigate. Highmages are essential on steep and 'why??' maps for their ability to raise and lower the tiles.

**Terrain Type:** We have included several preset terrain types, some of which are pictured to the right. The terrain types modify the frequency of each tile type. For example, the high seas terrain has a higher frequency of water tiles with very few or no mountains or dirt tiles.

High terrain factor (height)



Low terrain factor (height)



## Units

### STATS

#### Experience

Experience is gained from destroying enemies or enemy structures. Once units reach a certain level of experience, they will level up, providing small bonuses to their other stats as well as a bonus point. The bonus point may be spent on most stats or spells to further strengthen them. Units start at level 1 and can reach a max of level 5.

The amount of experience needed to reach the next level is as follows:

Level 2 – 100xp	[Total of 100xp]
Level 3 – 150xp	[Total of 250xp]
Level 4 – 200xp	[Total of 450xp]
Level 5 – 250xp	[Total of 700xp]

Participating in a fight within three turns of a unit's death will grant experience.

<u>Type</u>	<u>Experience</u>
Sentry Tower	75
Monument	50
Wall	25
Conscript	40+5*level
Hero	65+10*level

#### Health

A unit's total health will vary based on the type of unit, level, upgrades and benefits from spells. Each level the unit's base health will be increased by 15. Units do not have passive life regeneration unless provided by a spell or structure.

When all health is lost the unit or structure will die.

\*BONUS POINT\*: Increases unit health by an extra 20 points.

#### Mana

Every hero class, with the exception of Blood Mage, starts with 100 total mana. Mana is used to cast spells. Because basic units have no spells they do not need mana. Unlike health, mana does have a passive regeneration rate based on the stat *mana regen*. When a unit is created it starts at 25/100 mana. Each level a unit's mana will be increased by 20.

\*BONUS POINT\*: Increases the unit mana by an additional 10 points.

### Mana Regeneration

Base mana regeneration will vary based on the hero class. Mana regeneration is applied at the beginning of a player's turn. Mana regeneration is increased by 20% each level.

\*BONUS POINT\*: Mana regeneration is increased by 2. It is more beneficial to upgrade mana regen at early levels so that it will benefit more from the 20% increase.

### Attack Damage

Attack damage governs the amount of damage done by a basic attack. The base attack damage will vary based on the unit. Attack damage is increased by 2\*level on level up. (4 at level 2, 6 at level 3, 8 at level 4, 10 at level 5)

\*BONUS POINT\*: Increase attack damage by an additional 3 points. This has more of an impact at lower levels.

### Armor

Armor reduces the damage taken from both basic attacks and spells. Every 10 points of armor reduces damage from physical attacks by 1% and damage from spells by 0.75%. The base armor will vary depending on the unit. Every level the unit will receive 50 additional armor points.

\*BONUS POINT\*: Increase armor by an additional 50 points.

### Sight

Sight determines how far a unit can see. A unit's vision will uncover the fog of war revealing any enemy units or structures. For every 10 sight (rounded down) the unit is able to see in a radius of one additional tile. All units will have a sight range of at least 10 resulting in sight of the tile they are on and all tiles neighboring the unit. Sight will vary based on the unit. Every level increases the sight by 4.


\*BONUS POINT\*: Increase the sight by an additional 4 points.

### Attack Range






The distance at which a unit is able to attack an enemy unit or structure. An attack range of 1 limits attacks to neighboring tiles. An attack range of 2 would allow attacks within a 2-tile radius, etc... The attack range will vary depending on the unit. This stat will not increase on level up and cannot be upgraded by a bonus point.

### Blood Mage

A powerful magic user that spends his own life to destroy his enemies. All spells cost no mana but deal half of the damage back to the blood mage (with the exception of mutilate). Mana regen effects have no effect on the blood mage. Returned damage is not reduced by the blood mage's armor.

	HEALTH	<b>150</b>	MANA	<b>N/A</b>
	ARMOR	<b>200</b>	MANA REGEN	<b>N/A</b>
	ATTACK DAMAGE	<b>30</b>	SIGHT RANGE	<b>28</b>
	ATTACK RANGE	<b>1</b>	ABILITY POINTS	<b>4</b>

### Abilities


	Defend	Damage returned from spells is reduced to a third of original.
	Steal Health	Steals health from an ally or enemy. Gains the damage dealt as health.  <b>Damage: 20 + 20*SL</b> <span style="float: right;"><b>CD: 3 turns</b></span>
	Blood Boil	Enemy takes damage over next three turns. Each turn the damage increases from previous. Casting on an enemy who is already affected restarts the spell.  <b>Increase: (100+25*SL)%</b> <b>Base damage: 25*level</b> <span style="float: right;"><b>CD: 2 turns</b></span>
	Hemorrhage	Deals damage to the enemy based on the blood mage's current health. The lower his health the more damage is done.  <b>Damage: 10 + (.5+.1*SL) for each health point the blood mage is missing)</b>
	Mutilate	Inflicts damage to the blood mage but grants health on the next turn. Uses all remaining AP.  <b>Damage: 10*SL + 20*AP</b> <b>Healing: 2 * damage</b> <span style="float: right;"><b>CD: 3 turns</b></span>

### Tips






The blood mage is a high risk high reward unit. He is able to deal a lot of damage, but the player must take care not to get caught out of position at the wrong time. He is best played with another unit that can reduce the damage he takes or heal him.

## Champion

A defensive hero built to withstand the strongest of foes. The champion is a melee unit that deals moderate damage while remaining sturdier than most.

	HEALTH	<b>125</b>	MANA	<b>100</b>
	ARMOR	<b>300</b>	MANA REGEN	<b>12</b>
	ATTACK DAMAGE	<b>40</b>	SIGHT RANGE	<b>25</b>
	ATTACK RANGE	<b>1</b>	ABILITY POINTS	<b>3</b>

### Abilities

	Defend	Increases armor by 50.		
	Shield Slam	Hit the enemy unit doing a percentage of their current health in damage. The Champion is unprepared for the next attack reducing his armor.		
		Mana: 20	CD: 1 turn	Armor: $-(100-SL*10)\%$
		Damage: $20+(4*SL)\%$		
	Sweep	Hits all units on tiles neighboring the Champion.		
		Damage: $(.75 * SL) * AD$	Mana: $10 + 5*SL$	
	Shield	The Champion raises his shield increasing armor by slightly more than 9000, effectively blocking all damage that isn't pure damage.		
		CD: 4 turns		
	Joust	Timing event. The better you do the more damage is done.		
		Damage: AD to $(1+SL)*AD$	CD: 2 turns	Mana: $15*SL - (4*SL*AP)$


#### Tips

The champion is great for trying to bait out high damage spells or attacks leaving allied units alive and dangerous. Joust can be difficult but with practice becomes a very powerful ability.








## High Mage

A master of spells; capable of moving both heaven and earth. Her abilities are both destructive and deceptive, making her a powerful fighter.

	HEALTH	<b>125</b>	MANA	<b>100</b>
	ARMOR	<b>200</b>	MANA REGEN	<b>15</b>
	ATTACK DAMAGE	<b>30</b>	SIGHT RANGE	<b>32</b>
	ATTACK RANGE	<b>1</b>	ABILITY POINTS	<b>4</b>

### Abilities


	Defend	Increases mana regeneration by 5. This does not count towards level up bonus.		
	Terramorph	Modifies the terrain height and type. The higher the spell level, the less mana and AP required to sustain it.		
		<b>Mana: Varies</b>	<b>AP: Varies. Lower at higher spell levels.</b>	
	Set Ablaze	Sets a tile on fire. All units who enter the tile or are standing on the tile at the start of the turn will take damage.		
		<b>Mana: 15+10*SL</b>	<b>Damage: 25+10*SL</b>	<b>2+2*SL</b> <b>CD: 2 turns</b>
	Illusion	Create an illusion of an allied or enemy unit. The illusion can attack for reduced damage and takes increased damage. Illusions cannot cast spells, and fade away after a few turns.		
		<b>Duration: 5+2*SL turns</b>	<b>Damage: 1/3*AD</b>	<b>Taken: 3*damage</b> <b>CD: 3 turns</b>
	Meteor	Launches a meteor at the target location. The center tile takes full damage. All surrounding tiles take 50% splash damage.		
		<b>Damage: (55+5*AP)*SL</b>	<b>CD: 3 turns</b>	<b>Mana: 25*SL</b>

### Tips






The High Mage is very useful in many scenarios but is also the most expensive unit, so keep her well protected. In maps with lots of cliffs, terramorph becomes an essential spell to create more convenient paths. Terramorph has many applications but is easily countered by Paladins. Also, be warned that all units and structures in range of Meteor will take damage, including allies.

### Marauder

A mercenary willing to fight for your cause... for a price. The marauder is a very strong fighter that excels in up-close and personal combat.

	HEALTH	<b>125</b>	MANA	<b>100</b>
	ARMOR	<b>200</b>	MANA REGEN	<b>10</b>
	ATTACK DAMAGE	<b>50</b>	SIGHT RANGE	<b>28</b>
	ATTACK RANGE	<b>1</b>	ABILITY POINTS	<b>4</b>

### Abilities


	Defend	Gains 1.5 times experience per kill.		
	Maraud	Steal gold from enemy player. Must be used on enemy unit. Uses all remaining action points. The more action points used, the more gold is stolen.		
		<b>Gold: <math>40+10*(SL+AP)</math></b>	<b>Mana: 25</b>	<b>CD: 6 turns</b>
	Intimidate	Self buff. Enemy attackers have a chance to miss the Marauder.		
		<b>Duration: 4 turns</b>	<b>Chance to miss: <math>(15+5*SL)\%</math></b>	<b>CD: 8 turns</b>
	Strike	Does random damage in range. If this ability kills the enemy the marauder gains a permanent health bonus.		
		<b>Range: 0 to <math>(1.3+2*SL)*AD</math></b>	<b>Health: <math>3+2*SL</math></b>	<b>CD: 2 turns</b> <b>Mana: <math>15*SL</math></b>
	Frenzy	Does damage. If frenzy is cast again during this turn it deals 50% more damage but costs 50% more mana.		
		<b>Base Damage: AD</b>	<b>Base Mana: 20</b>	

### Tips






Frenzy can be a very powerful ability but requires a lot of mana. It should be used when the marauder is at or near full mana to be most effective. Maraud is also a good way to keep your enemy at a disadvantage. Stealing enough gold could make up for being behind in mine control.

## Paladin

A defender of the light that excels at supporting his allies in the heat of battle. The paladin is great at removing debuffs and is the only hero that can heal allies.

	HEALTH	<b>140</b>	MANA	<b>100</b>
	ARMOR	<b>220</b>	MANA REGEN	<b>15</b>
	ATTACK DAMAGE	<b>20</b>	SIGHT RANGE	<b>26</b>
	ATTACK RANGE	<b>1</b>	ABILITY POINTS	<b>4</b>


### Abilities

	Defend	Heals nearby allies for 10 health per turn.		
	Sacrifice	The paladin gives up a portion of his health to heal himself or an ally. Shares a cool down with Restore.		
		<b>Heal: (25+5*SL)% of health</b>	<b>Mana: 10+10*SL</b>	<b>CD: 2 turns</b>
	Restore	The paladin renews some health to himself or an ally. Shares a cool down with Sacrifice.		
		<b>Heal: (15+5*SL)% of health</b>	<b>Mana: 10+10*SL</b>	<b>CD: 2 turns</b>
	Sanctify	Nullifies all area effect abilities for a tile, and restores the original height of a terramorphed tile. If a unit is standing on the hex when it is first cast, the unit will have all negative debuffs removed.		
		<b>Duration: (4+SL) turns</b>	<b>Mana: 20</b>	<b>CD: 3 turns</b>
	Vow of Silence	Forces enemy unit to be unable to cast or attack.		
		<b>Duration: 1 + (SL/2) turns</b>	<b>CD: 3 turns</b>	






**Tips**

The paladin is a great counter to units that cast tile debuffs such as terramorph, set ablaze, and set trap. It may also be a good idea to have multiple paladins on the battleground in case Restore is on cooldown.

## Ranger

A quick long ranged unit that does an excellent job at scouting and getting in and out of battle.				
	HEALTH	<b>125</b>	MANA	<b>100</b>
	ARMOR	<b>200</b>	MANA REGEN	<b>10</b>
	ATTACK DAMAGE	<b>20</b>	SIGHT RANGE	<b>28</b>
	ATTACK RANGE	<b>2</b>	ABILITY POINTS	<b>5</b>

### Abilities


	Defend	Increases sight by 12 and attack range by 1.		
	Set Trap	Sets a trap. If enemy unit steps on it they will be unable to move.		
		<b>Mana: 25</b>	<b>Duration: (SL-1)/2 + 1</b>	<b>CD: 3 turns</b>
	Haste	Ranger and an additional unit have bonus AP to be used for movement. If the ranger casts this ability on himself, the mana cost is reduced by 75%		
		<b>Mana: 20</b>	<b>CD: 5 turns</b>	
	Poison Shot	Enemy takes damage and loses 2 AP during his or her next turn.		
		<b>Damage: (1+.1)*SL*AD</b>	<b>Mana: 10+10*SL</b>	
	Piercing Shot	Does damage. Ignores enemy armor.		
		<b>Damage: (1 + .5) *SL*AD</b>	<b>Mana: 30</b>	<b>CD: 5-SL (down to 0)</b>

#### Tips






The ranger is great at catching and stopping units. With the highest amount of AP and the haste ability, the ranger can easily outrun any unit. In addition, poison shot reduces the enemy's AP, further slowing them down.

## Warlock

A caster that uses dark magic to impede and confuse the enemy. The warlock is not the best offensive unit, but can still use his abilities to turn the tide of battle.

	HEALTH	<b>125</b>	MANA	<b>100</b>
	ARMOR	<b>200</b>	MANA REGEN	<b>10</b>
	ATTACK DAMAGE	<b>20</b>	SIGHT RANGE	<b>28</b>
	ATTACK RANGE	<b>2</b>	ABILITY POINTS	<b>3</b>

### Abilities

	Defend	All nearby enemies take 3% of their health in damage each turn.		
	Teleport	Teleports the caster to a random location on the map. Uses all remaining AP.		
		<b>Mana: 60-(15*AP)</b>	<b>CD: 3 turns</b>	
	Soul Link	Creates link between warlock and enemy or ally. All damage or healing to either unit is split. Cast again to break the link.		
		<b>Mana to cast: 55-5*SL</b>	<b>Mana to break: 0</b>	
	Curse	Places curse on a unit. All spells cast by the enemy cost more.		
		<b>Duration: 2+SL/2</b>	<b>Extra cost: 20+10*SL%</b>	<b>Mana: 10</b> <b>CD: 5-SL</b>
	Confusion	Enemy has a chance for spells and attacks to backfire. Spells and attacks will still cost AP but will not do damage or perform their intended effect. Enemies will hurt themselves in confusion.		
		<b>Duration: 1+(2*SL/3)</b>	<b>Chance: 10*SL</b>	<b>Mana: 10*SL</b> <b>Damage: AD of unit</b>


#### Tips

There is no guarantee that teleport will send your unit somewhere safe. It is best to use it to get out of a hopeless situation. Soul link is also a very powerful spell. Units with equal or lower health will end up having to kill themselves to kill you. If you have a unit that is a warlock and it is soul linked by another warlock, you are able to break the link at no cost.

## Civilians

### Conscript

A weak but cheap unit suitable to throw into battle with no regard for his safety.

	HEALTH	<b>125</b>	MANA	<b>0</b>
	ARMOR	<b>200</b>	MANA REGEN	<b>0</b>
	ATTACK DAMAGE	<b>20</b>	SIGHT RANGE	<b>28</b>
	ATTACK RANGE	<b>2</b>	ABILITY POINTS	<b>4</b>


#### Abilities



**Defend** Increases attack damage by 10.

### Worker

A citizen that can build structures and capture mines. Not a strong fighter.

	HEALTH	<b>50</b>	MANA	<b>0</b>
	ARMOR	<b>50</b>	MANA REGEN	<b>0</b>
	ATTACK DAMAGE	<b>10</b>	SIGHT RANGE	<b>28</b>
	ATTACK RANGE	<b>1</b>	ABILITY POINTS	<b>4</b>

#### Abilities



**Capture Mine** Captures a mine. Workers can capture mines that the enemy currently owns.



**Sentry Tower** Creates a sentry tower. See structures section for details.



**Monument** Creates a monument. See structures section for details.



**Repair** Repairs a structure for 10 health.

#### Tips

Work work work.

## Structures

### Fortress

The Fortress serves as the seat of your power. Here you may call upon your citizens, and train heroes. Additionally, the fortress serves as the platform for many important upgrades.

	HEALTH	<b>750</b>
	ARMOR	<b>500</b>
	SIGHT	<b>40</b>

### Actions



Train Units

Opens the unit menu where heroes can be trained and citizens can be called to action.



Build  
Upgrades

Opens upgrade menu where the fortress can be upgraded with various options. See section Structures – Fortress Upgrades

Tips

Protect your fortress at all costs! Loss of the fortress means defeat no matter how many units or other structures you may have.

## Fortress Upgrades

### Citadel

The Citadel is the higher tier version of the fortress, doubling its health. All actions that can be performed by the fortress are transferred to the citadel upon construction.

	HEALTH	1500
	ARMOR	500
	SIGHT	40
	PRICE	200

#### Tips

The Citadel is required before contracting the powerful specialized upgrades: Aetherial Tower, Giant Ballista, and Great Watch Tower.

### Aetherial Tower

The Aetherial tower provides your heroes with a direct connection to the Aetherial plane, increasing mana regeneration by 10 MP per turn for all units.

	PRICE	200

#### Actions



#### Demolish

Destroys the fortress upgrade, refunding a small portion of the original cost paid

#### Tips

The Aetherial tower is very useful for strategies involving powerful mages such as the high mage. Additional mana regeneration will allow for a more constant stream of spells.



### Great Watch Tower

This magically crafted tower increases the sight range of the fortress by 20 for a total of 60. Once every 3 turns an area with a radius of 3 tiles can be revealed for 3 turns. Ability has a cooldown of 6 turns



PRICE	<b>150</b>
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#### Actions



Demolish

Destroys the fortress upgrade, refunding a small portion of the original cost paid

Tips

The Great Watch Tower is best suited for an early game upgrade, or for large maps. Being able to spy on the enemy without their knowledge can be very useful.

### Giant Ballista

This upgrade transforms your fortress into a massive weapon capable of firing a projectile dealing 75 damage. Takes 3 turns to reload.



PRICE	<b>150</b>
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Actions



Demolish

Destroys the fortress upgrade, refunding a small portion of the original cost paid

Tips

When an army approaches your doorstep and you are light on defenders, this siege weapon can be crucial in turning the tide in your favor.

### Barracks

The Barracks provides additional space for your units to train before entering the battlefield. Upon completion, all units trained will begin at level 2 with 1 specialization point available to spend.



PRICE	<b>200</b>
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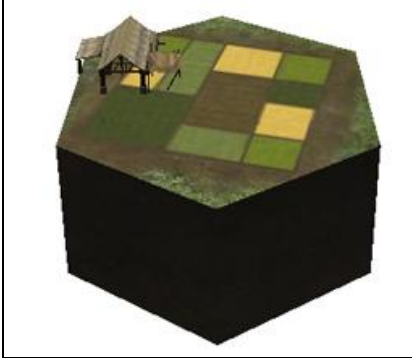
Tips

Getting the Barracks early in the game can give a distinct advantage when facing enemy units of the same type. A level 2 unit almost always beats a level 1 of the same type.

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### Farm

Constructing farms increases the player's food production, raising the unit cap by 25.



PRICE	<b>80</b>
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Tips

Farms will be needed as soon as unit population hits 50 which is 5 conscripts, or 3 heroes and a worker.

### Siege Wall

Siege walls are purchased in segments and placed between terrain tiles. They block enemy movement and damage between the tiles, until they are destroyed.



HEALTH	<b>150</b>
ARMOR	<b>700</b>
PRICE	<b>40</b>

### Actions



Demolish

Destroys the siege wall, refunding a small portion of the original cost paid

Tips

Use walls to create choke points, and to provide a barrier for your opponents.

### Boiling Oil

Upgrading a segment of siege wall with boiling oil provides a one-shot damaging ability activated from the wall. Boiling oil is poured on the enemy in the adjacent tile, burning them for 40 pure damage (not reduced by armor).



HEALTH	<b>150</b>
ARMOR	<b>700</b>
PRICE	<b>25</b>

#### Actions



Demolish

Destroys the siege wall, refunding a small portion of the original cost paid.



Activate Oil

Tips the oil pot onto the enemy in the adjacent tile.

Tips

Boiling oil needs to be re-purchased after being used before it can be activated again.

### Moat

The Moat causes enemies to spend all their action points to enter and leave the tiles surrounding your fortress.



PRICE	<b>80</b>
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Tips

The moat buys you an extra turn to deal with fearsome melee units, and if your fortress has walls around it, traversing around the moat is nearly impossible, so you can easily “hide” your units safely away from any melee units that try to approach.

Standing Structures

**Monument**

Monuments inspire troops in nearby tiles, raising their attack damage by 10.

	HEALTH	<b>250</b>
	ARMOR	<b>200</b>
	SIGHT	<b>30</b>
	PRICE	<b>100</b>

Actions



Demolish

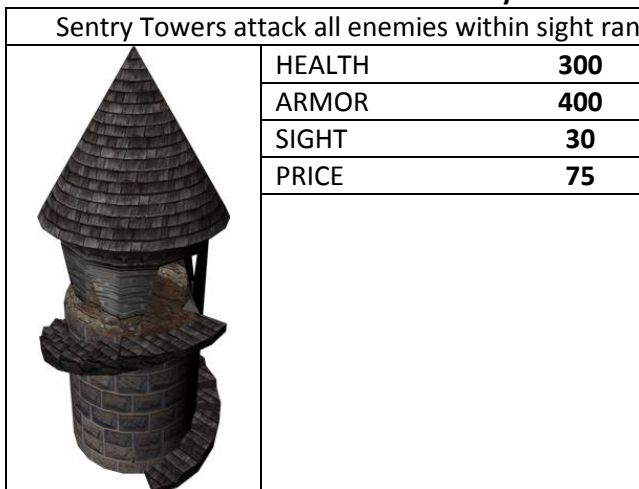
Destroys the structure, refunding a small portion of the original cost paid.

Tips

Monuments near your fortress make defending much easier.

### Sentry Tower

Sentry Towers attack all enemies within sight range for 20 damage each turn.



#### Actions



Demolish

Destroys the structure, refunding a small portion of the original cost paid.

Tips

Build a sentry tower near a captured mine to provide extra warning of approaching enemies.

### Mine

Ancient mines such as these lie undisturbed throughout the Realm of Kaodith. Finding and capturing a mine with a worker unit provides an additional 25 gold each turn.



Tips

Early exploration is crucial for finding and capturing mines before your opponent does. A higher income means you will be able to produce units and structures much faster than your opponent.

## Saving and Loading Games

Realm of Kaodith supports the ability to save and load single player and hotseat games. Saving can be done in the in game menu. By default, save files are saved to the directory

C:\Users\[*User name*]\AppData\LocalLow\DefaultCompany\Realm of Kaodith\saves as binary files with a .rok extension. Games that are saved with the same name will overwrite each other. Saving a game will save all unit, structure and tile positions and other stats, ensuring that the game is just as you left it when you return.

Both single player and hotseat save files can then be loaded by going to 'Single Player' from the main menu and selecting 'Load Game'. A list of all saved games will appear. Click on the name of the game you wish to resume and gameplay will continue from where you left off.

## Random Buffs

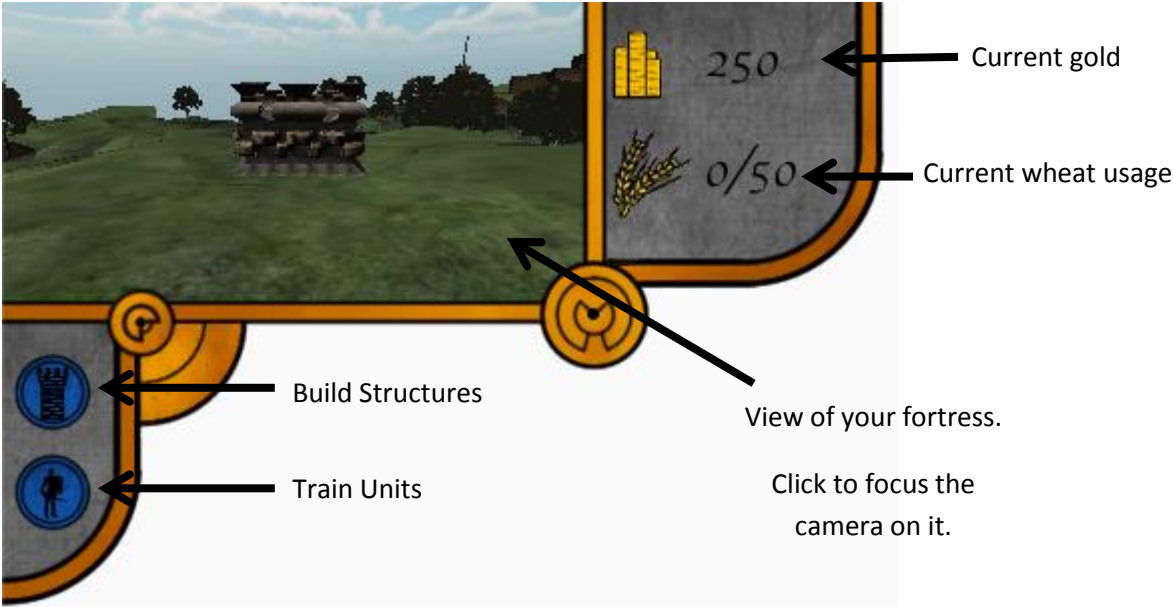
Realm of Kaodith is a very mysterious place, and sometimes things are not the same as they were when you first came through the region. Small chests will appear periodically in random locations, containing a variety of helpful bonuses:

Bonus Point	The unit gains an extra bonus point.
Gold	The player is awarded 100 extra gold.
Health	The unit's health is restored to full.
Mana	The unit's mana is restored to full.
Worker	The player is given a free worker unit as long as there is enough wheat and room to place it.
Experience	The unit is granted 100 experience.
XP multiplier	The unit is given a buff that increases experience gained by 50% for 8 turns.

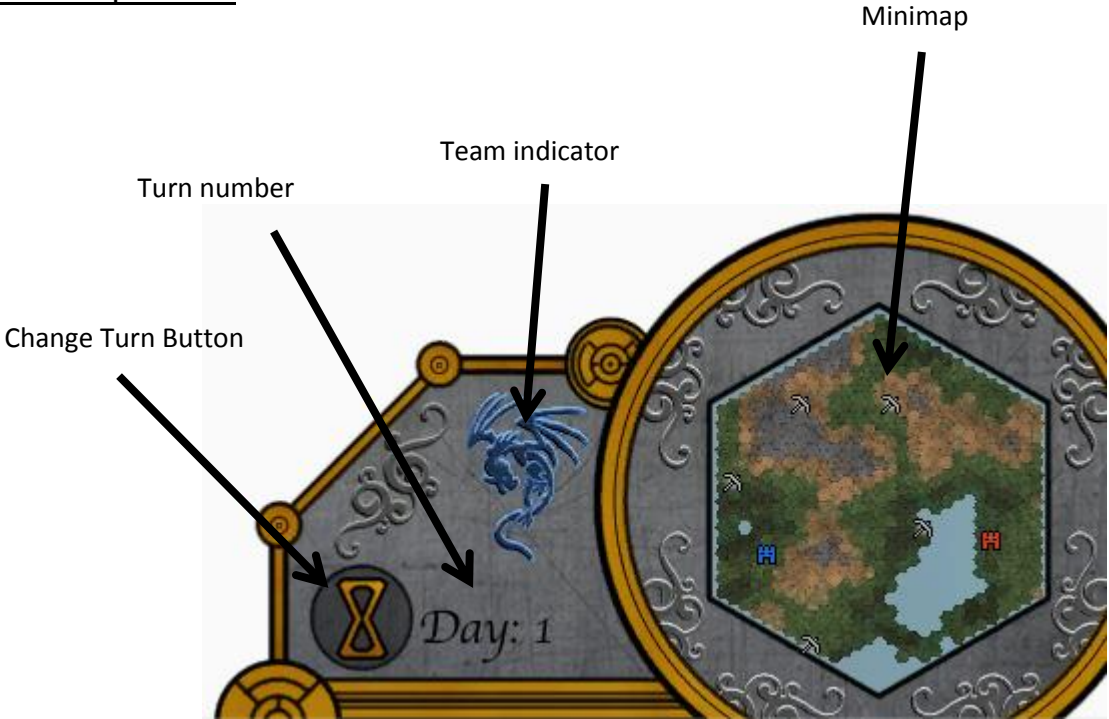


# Graphical User Interface

## Fortress Frame



## Minimap Frame



## Unit Frame

Move

Attack

Defend

Restore

Ability Menu

Experience bar and button to stats screen

Unit Level

level 1

Health

Mana

Action Points

Stats

EXP	0 / 100
HP	125 / 125
MP	25 / 100
AP	4 / 4

Unit Name

Unit portrait. Click to focus camera on unit.

## Bonus Point Menu

Button to Open/Close this menu

Number of Points

level 1

Spec Points: 1

Health

Armor

Attack Damage

Mana regen

Mana

Sight range

Abilities

## Future Improvements

The capstone responsible for starting Realm of Kaodith has come to an end, however we have not finished. Many members have expressed interest in continuing development on Realm of Kaodith. Below are improvements and ideas we will pursue in the upcoming months:

### Better Artificial Intelligence

As mentioned previously, we sacrificed a competent AI in order to get networked play implemented. While we would not change the decision we made, having a challenging AI is still something we wish to add to the game. Computer players provide many benefits that real players do not such as being able to pick up or save and pause a game at any point without annoying the other player or having the opportunity to play the game even if nobody else is available.

### Better Fog of War

We are fairly satisfied with the FoW in the current version of Realm of Kaodith but it doesn't quite meet the initial goals. Structures within partial fog of war should display only the stats that they had when you last saw them. This is not how it works currently. In addition we want to add clouds above the complete fog tiles. While not necessary, we think it would make the map look better.

### Sea Battles

This is not an improvement we planned to include in this class, but more of an expansion to the current gameplay. Water is currently just an inconvenience. We think it would be fun to be able to create aquatic units and include the water as part of the battlefield.

### More Units

We are happy with the current diversity of heroes, but have so many more hero ideas. An increase in heroes would increase the amount of knowledge needed to play the game, but would also increase the number of strategies players may come up with.

### More Than Two Players

It wouldn't be too much work to get more than two players working in the current game, but if we add this feature, we want to do it right. More than two player free-for-alls would be enjoyable, but players should also be able to form alliances and provide support through trades and gifts. Now that we will no longer be limited on time, we want to create this complex alliance system.

These are only a few of the many ideas we have for the future of Kaodith.

## Credits

### Art Assets

- All character models, animations, and textures were purchased from Arteria 3D with full rights to royalty-free usage
  - <http://arteria3d.com/>
  - Textures were recolored with Adobe Photoshop after purchase.

### Audio Assets

- All music used was royalty-free and provided to us by the following websites:
  - [www.audionatrix.com](http://www.audionatrix.com)
  - [Incompetech.com](http://Incompetech.com)
  - [Purple-planet.com](http://Purple-planet.com)

### Voice Actors

- Worker: Stephen Hara
- Conscript: Stephen Hara
- Ranger: Mario Carneiro
- Marauder: Joshua Homan
- Champion: David Lioi
- Paladin: Joshua Homan
- Warlock: Mario Carneiro
- Bloodmage: David Lioi
- Highmage: Raquel Carneiro

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