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Game Design Team

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Game Design Document

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# User Interface

## Menu Interface

### Main Menu

The main menu will be displayed once the program is opened, it will display the title of the game on it and contain buttons.

**Button:** Connect to Server

Display a dialog box to the user. This dialog box will contain:

* **Input Field:** Name
  + This field defines a name that other users will use to identify you once a lobby has been entered. This name will only be used for user identification, not system identification.
* **Input Field:** IP Address
  + This field defines an Internet Protocol Address that the system will use to connect to a game lobby**.**
* **Button:** Enter
  + This button submits the dialog box contents to the system. On success, display the ‘Lobby Menu’. On failure, display error message, then display ‘Main Menu’.
* **Button:** Cancel
  + Display ‘Main Menu’.

**Button:** Options

Display the ‘Options Menu’.

**Button:** Exit

Close the program.

### Options Menu

This menu will be populated with any customizable technical or aesthetic aspects of the game, as per the needs and capabilities of the implementation teams.

### Lobby Menu

This menu can only be displayed upon successful connection to a server via the ‘Connect to Server’ Button on the ‘Main Menu’ or upon completion of a gameplay round. The menu will be populated with a visual table, a chat box, and buttons.

**Display:** Leaderboards Table

This chart will display information on the current users in the lobby, and will contain:

* Ping: In relation to the user’s connection with the server.
* Username: The name the user chose when submitting the ‘Connect to Server’ dialog.
* Role: Displays the role of the player in the previous match. Either Vessel, Deity, or Soul. This value defaults to Soul.
* Ability: Displays the abilities of the player during the previous round. Icons representing Aspects if the player was a Deity, and an icon representing a class if the player was a Vessel. This value defaults to blank.
* Score: Displays the score of the player in the previous round. This value defaults to 0.

This table is sorted by score (Descending), then by Username (Ascending).

**Display:** Chat Messages

This box will display the chat messages of everyone in the lobby that have occurred since the user joined the lobby.

**Input Field:** Chat input box

This input field will accept ASCII characters and digits and, once the Enter/Return key is pressed, display the message in the ‘Chat Messages’ box with the player’s Username identifier.

**Button:** Vessel

Display ‘Vessel Class/Abilities Selection Menu’

**Button:** Deity

Display ‘Deity Aspects Selection Menu’

**Button:** Ready

This button will alternate between green and red, and will mark the user as ready to the server. This button defaults to red.

### Vessel Class/Abilities Selection Menu

This menu will allow players the select the class and abilities for the next round, should they be chosen to play as a Vessel. It will be populated with buttons, and an icon display.

**Display:** Current Class and Abilities

This array of icons will display the currently selected class and abilities for the player. It will change dynamically as different ‘Class’ and ‘Ability’ buttons are clicked. The order the abilities are displayed matters, as it will affect gameplay. Clicking a class or ability icon will deselect it.

**Multiple Buttons:** Class

Clicking a ‘Class’ button will select the class as the player’s choice for the next round. There will be a class button for every class the player could choose.

**Multiple Buttons:** Ability

Clicking an ‘Ability’ button will select the ability as the player’s choice for the next round. There will be an ability button for every ability the player could choose. Three abilities can be chosen at any given time. The ability will fill the first unoccupied ability slot.

### Deity Aspects Selection Menu

This menu will allow players the select the aspects for the next round, should they be chosen to play as a Deity. It will be populated with buttons, and icon displays.

**Display:** Current Aspects

This array of icons will display the two currently selected aspects for the player. It will change dynamically as different ‘Aspect’ buttons are clicked. The order of aspects does not matter. Clicking an aspect icon will deselect it.

**Multiple Buttons:** Aspect

Clicking an ‘Aspect’ button will select it, and its cluster of abilities, as the player’s choice for the next round. There will be an aspect button for every aspect the player could choose.

**Multiple Displays:** Abilities

For each ‘Aspect’ button, there will be a display of three ability icons. These icons will provide basic information when the cursor hovers over them. (See Deity Abilities)

## Gameplay Interface

### Vessel Display

The Vessel Display appears during a Round, when the player is playing as a Vessel. When this display occurs, it is mutually exclusive with the other Gameplay Interfaces. This display contains the following information.

**Graphic:** Health

The Vessel’s current health, in a bar format, with a clear digit display of CURRENT HEALTH / TOTAL HEALTH.

**Graphic:** Experience

The Vessel’s current experience, in bar format, with a clear digit display of CURRENT EXPERIENCE / EXPERIENCE TO NEXT LEVEL.

**Graphic:** Ability Bar

The Vessel’s weapon and ability icons are displayed In sequence, with an indicator of their current cooldown.

**Visual Indication:** Buffs

The Vessel’s currently active buffs, positive and negative, must be visually represented.

**Visual Indication:** Entity Health

Any Vessel or Gatekeeper entity must have a small health bar displayed above their figure on the screen. This indicator will be similar the Vessel’s own Health graphic.

**Graphic:** Chat box

The Vessel chat box must become visible whenever the player presses the Enter/Return key. The small prompt will accept ASCII text and digits and submit with another press of the Enter / Return key.

**Graphic:** Character

The Vessel will be represented in the center of the viewport as a small graphic. The character will always be in the center of the viewport.

### Deity Display

The Deity Display appears during a Round, when the player is playing as a Deity. When this display occurs, it is mutually exclusive with the other Gameplay Interfaces. This display contains the following information.

**Graphic:** Mini-map

This small map graphic will contain real time positions of the Vessels in the game. It responds to cursor input by moving the Deity viewport to the location clicked.

**Graphic:** Abilities

This array of icon displays the abilities of the Deity, they icons identifying them from one another, an indication of cooldowns, and a tooltip with basic information. (See Deity Abilities)

**Visual Indication:** Entity Health

Any Vessel or Gatekeeper entity must have a small health bar displayed above their figure on the screen. This indicator will be similar the Vessel’s own Health graphic.

**Display:** Chat Messages

This box will display the chat messages of all deities, vessels, and souls.

**Input Field:** Chat input box

This input field will accept ASCII characters and digits and, once the Enter/Return key is pressed, display the message in the ‘Chat Messages’ box with the player’s Username.

### Soul Display

The Soul Display appears during a Round, when the player is playing as a Soul. When this display occurs, it is mutually exclusive with the other Gameplay Interfaces. This display contains the following information.

**Graphic:** Mini-map

This small map graphic will contain real time positions of the Vessels in the game. It responds to cursor input by moving the Deity viewport to the location clicked.

**Visual Indication:** Entity Health

Any Vessel or Gatekeeper entity must have a small health bar displayed above their figure on the screen. This indicator will be similar the Vessel’s own Health graphic.

**Display:** Chat Messages

This box will display the chat messages of all deities, vessels, and souls.

**Input Field:** Chat input box

This input field will accept ASCII characters and digits and, once the Enter/Return key is pressed, display the message in the ‘Chat Messages’ box with the player’s Username.

# Mechanics

## Common

This section will define some mechanics that are common to all areas of the design.

### Projectile

A projectile is an entity that changes game variables when it comes into contact with other entities. Projectiles move across the game map and until they collide with Vessels, Gatekeepers, Static Obstacles, or they reach their maximum range. Each projectile contains the following information:

**Number:** Damage

Damage the projectile will deal to the entity it makes contact with, this number has a 1:1 relationship with the Health value of entities.

**Number:** Travel Speed

The speed at which the projectile moves across the game map, in meters per second.

**Number:** Range

The range a projectile can travel before it ceases to exist, in meters.

**Number:** Size

The radius of the projectile, in meters.

**Number:** Size increase per second

The radius increase in size of projectiles, in meters. This will commonly be 0, as it will only be used for certain projectiles.

**Vertex:** Point of origin

The coordinates of the entity that spawned the projectile.

**Vertex:** Point of direction

The coordinates of the point that the entity fired the projectile at. In Vessel terms, this would be where the cursor was clicked. (See Vessel Interaction)

### Buff / Debuff

A buff / Debuff refers to any effect that has a positive / negative impact on the statistics of an entity. They will have the following principles:

**String:** Effect type

This names the effect with a type, to help the user and developer to know its effect. An example could be ‘Damage Up’ or ‘Healing’.

**Number:** Effect value

This specifies the quantity of the previous effect. This value will always be a percentage of the current entity value. For example, if the effect was ‘Damage Up’ and the effect value was 10; the Damage value of an entities Weapon would be increased by 10% for the Duration of the buff.

**Number:** Duration

The length of time the buff / debuff will be in effect, in seconds.

### Weapon

A weapon allows for a character to have a ‘basic attack’, the weapon does this by functioning as a projectile entity creator. A weapon contains the following values:

**Number:** Cooldown

This number defines the amount of time after creating a projectile that a character must wait before creating another projectile. This time is in seconds.

**Pointer:** Projectile

The weapon is linked to a specific projectile, which functions as a blueprint for every projectile that the weapon creates. (See Projectile)

## Player

### Vessel

A Vessel is a user playable character, and is the main focus of any given Round.

#### Statistics

A Vessel object or class must contain the following elements:

**Number:** Current Heath

Current Health will be used to reflect when ‘damage’ has been dealt to a Vessel, and will determine part of a Vessel’s ‘Loss Condition’. When Health is being modified, assume it refers to Current Health unless otherwise specified.

**Number:** Total Health

This refers to the total health that a Vessel could have, as their current level.

**Number:** Current Experience

The current amount of experience that the Vessel has at a given time. This value changes as the Vessel collects experience. (See Vessel Interaction)

**Number:** Total Experience to Next Level

This value represents the amount the current experience must be equal or greater to in order for the Vessel to Level Up. (See Vessel Interaction)

**Number:** Travel Speed

This represents the movement speed of a Vessel across the map, in meters per second.

**Pointer:** Weapon

Every Vessel has a Weapon, which allows them to create a specific Projectile. (See Weapon)

**Multiple Pointers:** Abilities

Every Vessel has three abilities, chosen by the user before a round begins. (See Vessel Abilities)

#### Interaction

This section defines the ways that a user can interact with a Vessel during a Round. This is tied closely with the Vessel Interface.

**Input:** Movement

This allows the user to move their Vessel character and by extension the viewport of the screen. This is entirely keyboard input, and up to eight directions can be traversed with combination of the input keys.

* **Input:** W
  + Moves the character ‘Up’ in respect to the viewport.
* **Input:** A
  + Moves the character ‘Left’ in respect to the viewport.
* **Input:** S
  + Moves the character ‘Down’ in respect to the viewport.
* **Input:** D
  + Moves the character ‘Right’ in respect to the viewport.

**Input:** Attack

This input allows the Vessel to use their Weapon. It uses the Left Mouse Button, which fires the weapon projectile on a line created by the character graphic and the point of click.

**Input:** Ability

This allows the user to ‘cast’ the abilities that his character has available. This is based on keyboard input, and doesn’t include the number pad on large keyboards.

* **Input:** 1
  + Cast the first ability on the Ability Display.
* **Input:** 2
  + Cast the second ability on the Ability Display.
* **Input:** 3
  + Cast the third ability on the Ability Display.

**Event:** Experience Gathering

This event occurs when a Vessel gains experience, and adds an appropriate value to their Current Experience. A vessel can gain experience in the following cases:

* **Event:** Killed Lost
  + This event occurs when a Vessel weapon or ability causes a Lost entity’s Health to become less than or equal to zero.
* **Event:** Killed Guardian
  + This event occurs when a Vessel weapon or ability causes a Guardian entity’s Health to become less than or equal to zero.
* **Event:** Killed Arbiter
  + This event occurs when a Vessel weapon or ability causes the Arbiter entity’s Health to become less than or equal to zero.
* **Event:** Killed Vessel
  + This event occurs when a Vessel weapon or ability causes another Vessel entity’s Health to become less than or equal to zero.

**Event:** Level Up

The Level Up event is caused by the Vessel Current Experience to become equal or greater to the Total Experience required for the next level. The result of the event is the increase of Vessel Statistics values, as well as the Vessel Weapon values and Vessel Ability values. In addition, the Current Experience of the Vessel will be set to zero, and the Total Experience required for the next level will be increased. (See Vessel Index)

**Event:** Score Gathering

This event occurs when a Vessel gains score. The score value is only used in the calculation of the Win Condition (See Game Modes). A vessel can gain score in the following cases:

* **Event:** Killed Lost
  + This event occurs when a Vessel weapon or ability causes a Lost entity’s Health to become less than or equal to zero.
* **Event:** Killed Guardian
  + This event occurs when a Vessel weapon or ability causes a Guardian entity’s Health to become less than or equal to zero.
* **Event:** Killed Arbiter
  + This event occurs when a Vessel weapon or ability causes the Arbiter entity’s Health to become less than or equal to zero.
* **Event:** Killed Vessel
  + This event occurs when a Vessel weapon or ability causes another Vessel entity’s Health to become less than or equal to zero.
* **Event:** Round Ended
  + If the Round ends, and the Vessel is not dead, then that Vessel gains score.

#### Vessel Abilities

A vessel ability is a special effect or attack that a vessel can activate or ‘cast’, that is external from their Weapon or Class. Vessel Abilities can be one of two types:

**Type:** Buff

See Buff / Debuff for definition, see Vessel Index for examples.

**Type:** Special Projectile

See Projectile for definition, see Vessel Index for examples.

Additionally, Vessel Abilities have a special relationship to the ‘Level Up’ event. At the start of a Round, the user will have selected three abilities to use; however, only the ability in the first slot will be unlocked (See Lobby Menu). To unlock the other two abilities, the player must reach ‘level’ 2, and then ‘level’ 4. This is done by causing the Level Up event once, and then an additional two times, as a vessel begins a Round at ‘level’ 1.

### Deity

A deity is a user playable role, and functions as a supplement to gameplay.

#### Statistics

While a deity does not have a character graphic, as the Vessel does, but there are still values they connect to:

**Multiple Pointers:** Aspects

A deity is connected to two Aspects, which point to three abilities, leading to a total of six abilities pre Round. (See Deity Aspects)

#### Interaction

This section defines the methods that a user can interact with the game as a Deity. This is tied closely to the Deity Interface.

**Input:** Movement

This allows the user to move the viewport of the screen. This is entirely keyboard input, and up to eight directions can be traversed with combination of the input keys.

* **Input:** W
  + Moves the viewport ‘Up’.
* **Input:** A
  + Moves the viewport ‘Left’.
* **Input:** S
  + Moves the viewport ‘Down’.
* **Input:** D
  + Moves the viewport ‘Right’.

**Input:** Ability

This allows the user to ‘cast’ the abilities that his character has available. This is based on keyboard input, and doesn’t include the number pad on large keyboards.

* **Input:** 1
  + Select the first ability on the Ability Display.
* **Input:** 2
  + Select the second ability on the Ability Display.
* **Input:** 3
  + Select the third ability on the Ability Display.
* **Input:** 4
  + Select the fourth ability on the Ability Display.
* **Input:** 5
  + Select the fifth ability on the Ability Display.
* **Input:** 6
  + Select the sixth ability on the Ability Display.

Once an ability is selected, it can be ‘cast’ by clicking a target with the Left Mouse Button. (See Deity Aspects)

**Event:** Score Gathering

This event occurs when a Deity gains score. The score value is only used in the calculation of the Win Condition (See Game Modes). A deity can gain score in the effective use of their Abilities. Every ability will have a slightly different score method and value. It will be designed around the premise of rewarding a Deity for skillful use of an ability.

#### Deity Aspects

A deity Aspect is a bundle of three deity Abilities. A deity Ability is a special effect or attack that a vessel can activate or ‘cast’. In an aspect bundle, there will be a Quick Ability, a Common Ability, and a Grand Ability. The title for the ability reflects its effect value and cooldown. Deity Abilities can be one of three types:

**Type:** Buff

See Buff / Debuff for definition, see Deity Index for examples.

**Type:** Debuff

See Buff / Debuff for definition, see Deity Index for examples.

**Type:** Summon

Summon type abilities create a new entity into the game map, these will be an Environment entity; they are limited to Gatekeepers or Static Objects. See Deity Index for examples.

### Soul

A Soul is a user playable role, and functions as a spectator to gameplay.

#### Statistics

As a spectator role, a Soul has no statistics.

#### Interaction

This section defines the methods that a user can interact with the game as a Soul. This is tied closely to the Soul Interface.

**Input:** Movement

This allows the user to move the viewport of the screen. This is entirely keyboard input, and up to eight directions can be traversed with combination of the input keys.

* **Input:** W
  + Moves the viewport ‘Up’.
* **Input:** A
  + Moves the viewport ‘Left’.
* **Input:** S
  + Moves the viewport ‘Down’.
* **Input:** D
  + Moves the viewport ‘Right’.

## Environment

### Map

The map refers to the defined rectangular gameplay area that users can interact within. The map will have a graphic baseline, and entities will be draw onto to the baseline. The map is divided into small meter by meter sections referred to as tiles. The Map will have the following elements:

**Multiple Tiles:** Vessel Spawn

Vessel spawn tiles define a place where the vessel character graphic will start at in the beginning of a Round. For example, in the Free-for-All mode, there will be four spawn tiles, and they will be in the four corners of the map. (See Vessel)

**Multiple Tiles:** Static Objects

Static Objects are entities that interact will Vessels and Gatekeepers when they come into contact with them. Objects can be hazardous and cause damage, cause a positive effect, or be a Static Obstacle which blocks movement and projectiles.

**Multiple Tiles:** Gatekeeper Spawn

Gatekeeper spawn tiles define a place where gatekeeper characters can be created. For example, in the Free-for-All mode, most tiles will allow the Lost to spawn, there will be twelve tiles that allow Guardians to spawn, and one tile in the center will allow an Arbiter to spawn. (See Gatekeeper)

### Gatekeeper

Gatekeepers are AI controlled entities that interact with the other entities on the game map. They function similarly with Vessels, but are not controlled by any user. Gatekeepers are divided into three types:

**Type:** The Lost

The Lost function as a minion class, where they are easily killed and whose power lies in numbers. They can move the same way a Vessel does, and they have a Weapon. There are multiple Archetypes within the Lost class. (See Gatekeeper Index)

**Type:** Guardian

Guardians function as a mini-boss class, where they are not designed to be difficult to kill, but take significantly more than the Lost. They can move the same way a Vessel does, and they have a Weapon. There are multiple Archetypes within the Guardian class. (See Gatekeeper Index)

**Type:** Arbiter

The Arbiter is the strongest member of the Gatekeeper faction, he is designed to be difficult to kill. There is only one Arbiter. The Arbiter can move the same way a Vessel does, has a Weapon, and also has two Abilities. (See Gatekeeper Index)

#### Statistics

All members of the Gatekeeper faction share these traits, except the Arbiter, who has two Abilities in addition to the following traits:

**Number:** Current Heath

Current Health will be used to reflect when ‘damage’ has been dealt to a Gatekeeper, and will determine when a Gatekeeper is destroyed. When Health is being modified, assume it refers to Current Health unless otherwise specified.

**Number:** Total Health

This refers to the total health that a Gatekeeper could have.

**Number:** Travel Speed

This represents the movement speed of a Gatekeeper across the map, in meters per second.

**Pointer:** Weapon

Every Gatekeeper has a Weapon, which allows them to create a specific Projectile. (See Weapon)

#### Interaction

Gatekeepers can only interact with the user by proxy of a Vessel or Deity.

#### Arbiter Abilities

An arbiter ability is a special effect or attack that the arbiter can activate or ‘cast’, that is external from his Weapon. The Arbiter abilities are predefined, and are both special projectiles. (See Gatekeeper Index)

# Content

## Player

This section defines all the designed player elements. All table measurements in this section will be in meters, seconds, or meters per second. Any constants in this section may be changed for balancing purposes.

### Vessel Index

This section will define the currently designed Vessel classes, weapons, and abilities.

#### Classes

This section will explain the intent behind the currently designed classes, and have a table of their statistics.

**Class:** Warrior

The warrior class is a close range Vessel, with a large amount of health. The warrior will be slower, but it can afford the damage it will likely take as it moves into closer range. In other designs, this could be referred to as a ‘tank’ class.

**Class:** Shaman

The shaman is a medium range, high damage class. It has a lower amount of health, so a shaman has to be careful, and hit its attacks precisely. In other designs, this could be referred to as a ‘glass cannon’ class.

**Class:** Hunter

The hunter class is a long range class that has a lower amount of damage, but should be able to easily hit targets. The hunter has an average amount of health, and so is less fragile than the shaman.

**Class:** Scout

The scout is a very quick, very close range Vessel, with a low weapon cooldown. The scout will need to get very close to its enemy, and so tactical kiting with be crucial.

**Chart of Base Vessel Character Statistics:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Class | Total Health | Travel Speed | Weapon | Weapon Cooldown |
| Warrior | 150 | 5 | Spear | 0.75 |
| Shaman | 75 | 6 | Fireball | 1.25 |
| Hunter | 100 | 6 | Javelin | 0.75 |
| Scout | 125 | 7 | Sword | 0.5 |

**Chart of Base Vessel Weapon/Projectile Statistics:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Weapon | Damage | Travel Speed | Range | Size (Radius) | Size increase |
| Spear | 30 | 30 | 2 | 0.2 | 0 |
| Fireball | 40 | 8 | 8 | 0.4 | 0 |
| Javelin | 25 | 15 | 10 | 0.2 | 0 |
| Dagger | 25 | 30 | 1 | 0.3 | 0 |

**Chart of Vessel Statistics Increase per Level:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Class | Total Health | Travel Speed | Weapon Damage | NOTE:  These are the only statistics that increase per level. |
| Warrior | 25 | 0.25 | 5 |
| Shaman | 10 | 0.3 | 7 |
| Hunter | 15 | 0.4 | 3 |
| Scout | 20 | 0.5 | 3 |

#### Abilities

This section will define all the abilities currently designed in the Vessel Abilities pool. Abilities can be of the following types:

**Type:** Buff

See Buff / Debuff for definition. The buff would be applied to the vessel upon cast, and would last a specific duration.

**Type:** Special Projectile

See Projectile for definition. The projectile would differ from a more common projectile as they can cause a debuff on the entity that collides with the projectile.

The specific abilities are defined as follows:

**Buff:** Rage

Rage is a buff that increases Damage dealt while active. The amount of extra damage dealt is a percentage of the base damage of the weapon or ability used.

**Buff:** Healing

Healing is a buff that

**Buff:** Quick Fingers

**Buff:** Dash

**Buff:** Bobble

**Projectile:** Poison Dart

**Projectile:** Net

**Projectile:** Smash

**Chart of Statistics for Buff Abilities:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Ability | Effect Value | Effect Scaling | Duration | Duration Scaling | Cooldown |
| Rage |  |  |  |  |  |
| Healing |  |  |  |  |  |
| Quick Fingers |  |  |  |  |  |
| Dash |  |  |  |  |  |
| Bobble |  |  |  |  |  |