



Crystal Realm

The Resurrection of Yut Nori

GAME DESIGN DOCUMENT

VERSION 7.0

June 9, 2014



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VERSION HISTORY

Version	Date	Purpose for Revision
v1.0	May 2, 2014	Game Concept Pitch, first version
v2.0	May 7, 2014	Updated narrative
v3.0	May 8, 2014	Prototype added
v4.0	May 14, 2014	Art assets updated
v5.0	May 24, 2014	Narrative edited
v6.0	May 28, 2014	Audio narrative updated
v7.0	June 3, 2014	Alpha/Beta Playtest Feedback incorporated

ABSTRACT

About

Crystal Realm: The Resurrection of Yut Nori, is a contemporary fantasy PC game version of the Korean board game *Yoot Nori*, or *Yut*.

Genre

Strategy, timed, and turn-based game that simulates PVP and RTS elements.

Player Type

Hard core single player and multiplayers gamers are competitive and can spend approximately 15 minutes to countless hours of play time to level up their champions.

Social single player and multiplayer gamers will enjoy the rapid 15 minutes gameplay time with their friends and family.

Dimension Type

The game is 2.5D that simulates a 3D game world, but with 2D gameplay.

Setting

The game setting is set inside a crystal realm where interconnected labyrinths create the perfect PVP atmosphere.

Game World

The game world is a fantasy crystal realm, a set of interconnected PVP styled labyrinths that are set inside an organic world comprised of natural elements such as bamboo and stone.

AUDIENCE, PLATFORM, AND MARKETING

The target audience consists of a broad global audience who desire something new and unfamiliar filled with rich historical and cultural value. An ESB rating of 10 plus, makes the game marketable to multiple age ranges without added offensive or adult content that would otherwise limit the target audience.

The quick and strategic gameplay is ideal for both social and hardcore gamers.

Platform

The game is both single and multiplayer operating on Windows or MAC platforms to reach a breadth of audiences. As a single player game, players challenge *Artificial Intelligence* in gameplay that replicates the multiplayer game. And the multiplayer option currently limits gameplay to two players, unlike the traditional board game which allows for an unlimited number of players.

Top Performers

MapleStory Yut Wars is a similar game that is also based upon the traditional Yut board game. However it contains more of a traditional Korean theme compared with Crystal Realm's contemporary fantasy theme.

OVERVIEW

Purpose

The purpose of the game is to automate a highly competitive, strategic and entertaining traditional Korean board game that has been played by Koreans since A.D. 100.

Introduction

The finest *Champions* and their *Mercenaries* have assembled for the duel of the century. Hailing from regions outside the *Crystal Realm*, champions pit wit, skill, magic, and gadgets against each other in a fierce battle for control of the world's most rare and powerful *Ghlistones*. Only the bravest champions are invited for the right to lay claim to the *Glysun Labyrinths* - the last known place in the realm where Ghlistones exist.

The first champion to dominate the labyrinths seizes control of an unparalleled fortune, and unlocks the keys to resurrect the Goddess *Yut Nori*.

Overview

Crystal Realm: The Resurrection of Yut Nori, is a 2.5D fantasy themed strategy PC game version of the Korean board game *Yoot Nori* or *Yut*. Somewhat like a cross between Monopoly and Chess, players move *Champions* and *Mercenaries* across a virtual game board in a timed, turn-based, competitive strategy game to resurrect the powerful Goddess *Yut Nori*.

The gameplay is similar to the traditional game, but features a modernized retelling of the original narrative with new avatars and game elements designed for modern PC players.

Set in modernized dark toned labyrinths with bright hues and stone pillars and walls, the narrative tells the story of Goddess Yut Nori, a goddess of the natural world *Stellium*, tells how she split the world into labyrinths to hide them from Warlord *Azhurlar* of *Malefic*, who wanted to seize them for himself. Trapped inside one of her own labyrinths, she calls upon her greatest Champions to compete in the *Glysun Labyrinths* for energy stones known as *Ghlistones* that will free her from her prison, and save the world from Warlord Azhurlar's sinister plans.

Champions transition from the natural world to begin their descent into the labyrinths obtaining special powers that ready them for combat. They duel in PVP inspired labyrinths wielding unique skills, magic spells, and clever gadgets used to knock opponents off the game board.

Players compete for gold and energy used to give their champion higher rankings, purchase new player character skins, magic spells, or gadgets; and unlock rare items used to resurrect Yut Nori.

Each champion has their own printable, collectible, game card identifying the champion type, powers and skills, and ranking.

Narrative

In the traditional Korean storyline, the outer perimeter of the game board represents the cosmos. The inner landing spaces represent the natural world. Game tokens represent horses, or player characters that are moved around the game board. And tossing sticks are used similar to dice to determine the player's movements around the game board.

The new PC version provides a new take on the original story. The traditional cosmos is replaced with a fantasy crystallized realm, and the natural world is replaced with labyrinths filled with Ghlistones, or energy stones. Whimsical characters form champions and mercenary squads that compete inside the labyrinths to resurrect Yut Nori. And champions come from different regions, possess different skills, and speak different languages.

Backstory

The world was once a different place for Goddess Yut Nori. Reigning over *Stellium*, she became the gate keeper of the natural world ensuring peace and prosperity for all. But one day all that changed. Warlord Azhurlar, a dark force from *Malefic*, rose up shattering that illusion of peace and prosperity.

Threatening to seize all of Stellium and enslave its inhabitants, Warlord Azhurlar dispatched his army to attack Stellium leaving the world in a state of chaos and oppression.

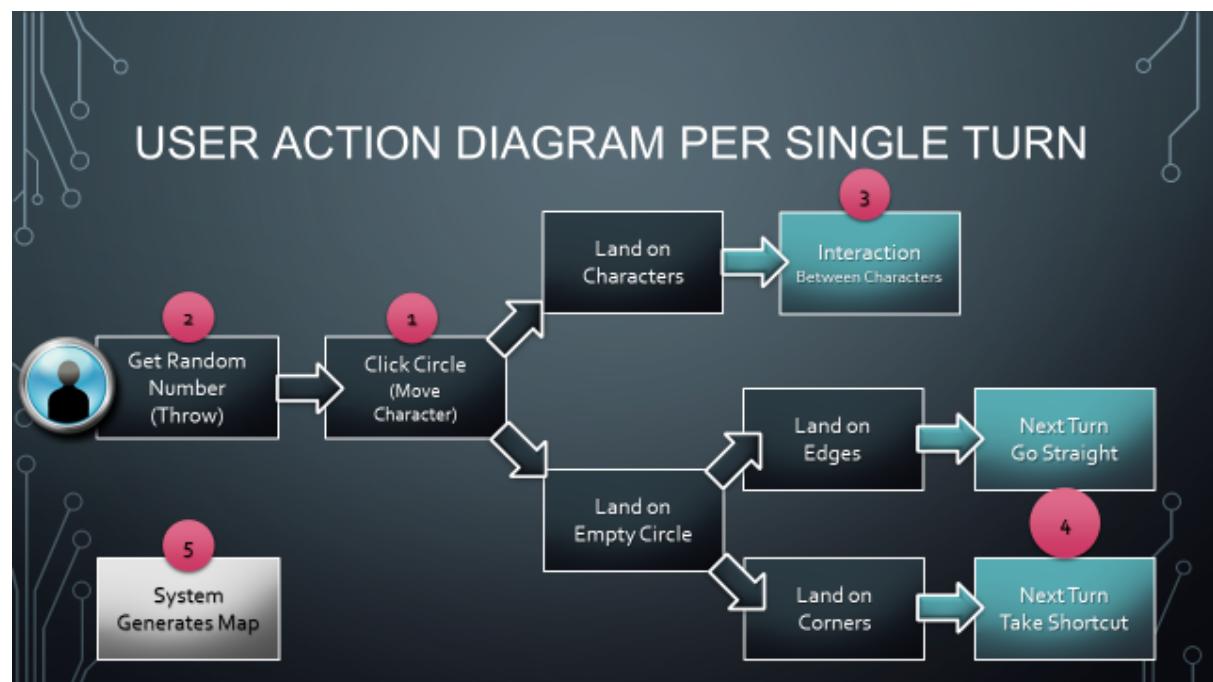
Using her powers, Goddess Yut Nori made the only choice she had left – to split the world into multiple labyrinths hidden in the *Outbounds* of space and time far away from the grasp of Lord Azhurlar. Although the quick wit of Goddess Yut Nori saved the world from destruction, its inhabitants were left defenseless as she trapped herself inside one of her own labyrinths and fell into a deep sleep. Awaiting a Champion that will wake her and free her from her cage, she lays frozen in time stuck in the prison of her own making.

GAMEPLAY

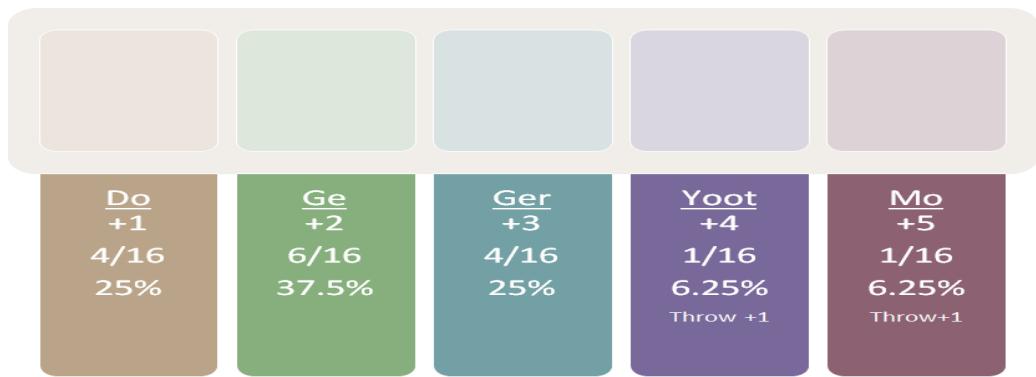
Immersive Play

The timed, turn-based, strategy provides an exciting 15 minutes of intensive single or multiplayer gameplay, similar to Monopoly and Chess, engaging both social and non-social gamers. A typical gameplay is as follows:

- Players select a Champion
- Players can name their player character
- Game begins:
 - Player 1 clicks “Roll” to toss the sticks.
 - The number of spaces Player 1 can move is highlighted.
 - Player 1 decides to move a champion or mercenary.
 - Player 1 decides whether or not to use the champion’s skill.
 - If the skill is used it may change the player movements, which are highlighted on the path around the board.
 - If the stick toss numbers allow, the player may earn an additional stick toss(s). Player 1 rolls again, moves the champion, and repeats the process until all rolls are complete.
 - Player 1 completes the round.
 - A message with audio displays indicating it’s time to change players.
 - Player 2 repeats the same process as Player 1.
 - Player Champions and Mercenaries can knock opponents off the game board, and the losing champion is reset to the beginning of the game board until a win condition is met.
 - Approximately 15 minutes to complete a game.



Tossing Stick Combinations

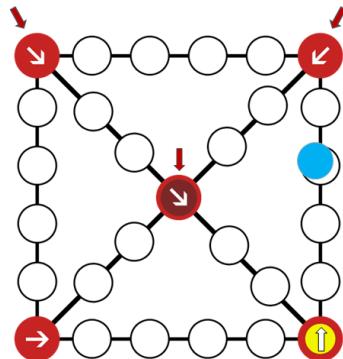


Movements

Shortcuts

If the player pieces lands either in the center, or on a corner at the top of the board, the player takes a shortcut.

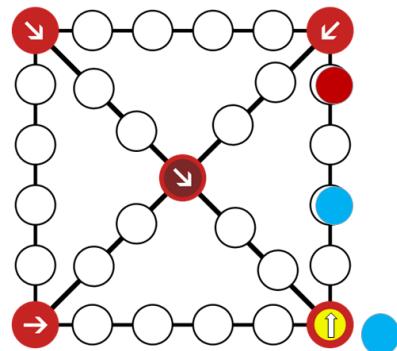
The player moves the pieces the given number of spaces towards the starting point.



Catching the Enemy

If player lands on an enemy, the player returns the enemy's pieces to the starting point, and the enemy must try to get around the game board again.

Player gets an additional stick toss, and player moves pieces again.



Stacking Units

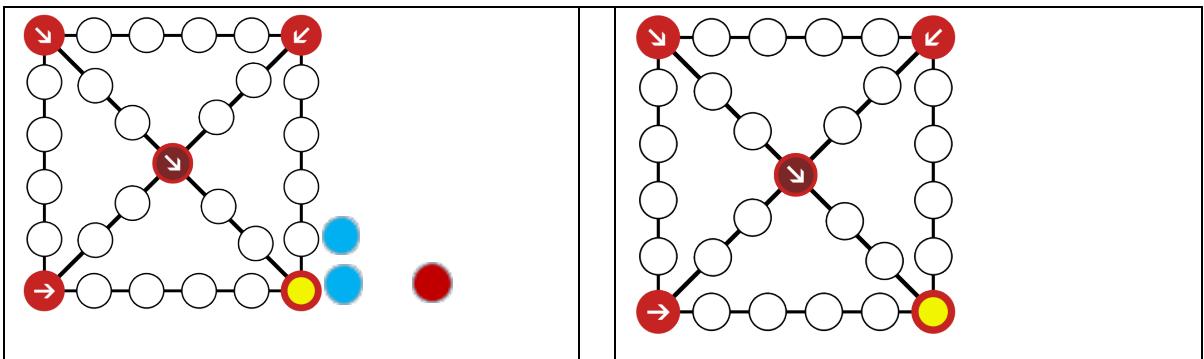
If player lands on their own pieces, the player can move the squad together.

Player can stack as many pieces together as they want. If the player wins, then the stacked pieces are removed from the board.

If the player loses, the pieces including the stacked units, return to start.

Changing the Order of Bonus Throws

The player scores (+2), and can catch the enemy.



Rules

Tutorials are included in the UI to help players better understand the complexity of the game.

Hints

Hints will be added to version 8.0, and made available through the game UI.

Scoring

Win Conditions

Player who gets all their mercenary squad to move around the game board to return to the yellow start position first, wins the game.

Lose Conditions

Player's opponent removes all four game pieces from the game board, first.

Points

Players earn gold dependent upon the spaces they land on, and mana are earned throughout the game and when the player wins.

Points Distribution

Players can spend virtual gold to purchase new PC skills, and use mana to achieve a higher PC rank.

Achievements and Upgrades

When the game is won, the winner collects points and in game gold. These points are used to rank players and the gold is used to purchase virtual items, like character skins and more characters.

The winner that collects the most amount of mana and moves their PC's off the game board wins. Both mana and in-game gold are collected. The gold can be spent to upgrade the PC skin, skills, or purchase additional minions.

PC Ranking

Player's avatar earns a ranking per game win.

Keys

The team is working on some concepts that will allow player characters to collect keys that give players access to levels that offer rare magic spells and gadgets.

Collectibles

Each champion will be offered as a collectible trading card that users can use to build a card game deck to play a card game version of the game (or just show off).

Single Player

Grab a champion and PVP against the game AI to victory! The single player will face-off the game AI for a chance at resurrecting Yut Nori. PVP the AI to the end! The first champion and mercenaries to reach the end wins.

Multiplayer

The multiplayer game plays the same as the traditional game minus the unlimited server connections required for an unlimited amount of players.

Players continue to make decisions concerning PC movements, and the use of champion skills. Crystal tosses are executed through a mouse click.

The multiplayer game is automated with player switch, and champion selection and naming features. An audible sound indicates movement of champions and mercenaries.

Max players

In the original game, an unlimited number of players can play the game. For the PC version this remains true, however the game currently is not setup to function efficiently for multiple LAN connections.

Servers

Server information will be included with the next release of the game.

Customization

Players can select their champion, give the champion a name, earn new player character skins, and edit game controls and AI.

Saving and Loading

Players can save their game and champion information and status. Games are then readily available for reload and instant play.

Chatting

Currently the game does not offer in-game chat. The new release will incorporate more social gaming options.

Clans

Players sort of create their own clan with their mercenaries, as well as with their friends and family.

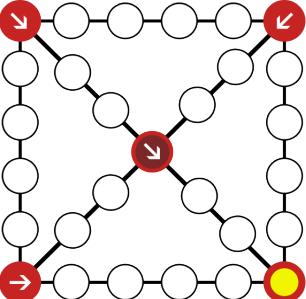
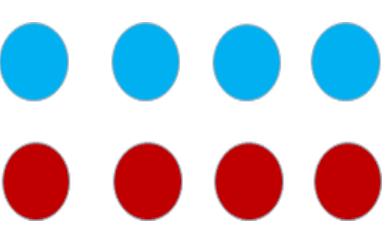
OBJECTS

Overview

In the traditional game there are three major objects used: game board, tossing sticks, and game tokens.

However the PC version uses various objects to add aesthetics or gameplay value. Such objects include; Champions, mercenaries, Ghlistones, pillars, crystal tossing sticks, and champion skills, items, magic or gadgets.

Traditional Elements

Board	Tossing Sticks	Game Pieces (Squad)
		

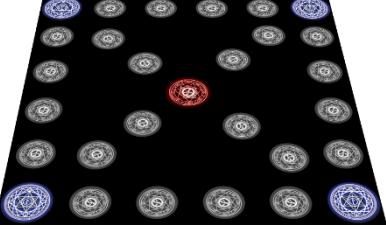
PC Elements

Ghlistones

Ghlistones are mana formed from crystal where its particles are contained inside crystals. They glow and change colors.

Pillars

Pillars The cosmic orbs are the landing spaces on the game board. They are dark, smooth circular shapes engraved with brightly cast symbols representing various passages and shortcuts.

Labyrinth Board	Tossing Sticks	Champions
		

WORLD

The Realm

The traditional game consists of a game board, four wooden tossing sticks, and four game pieces or “squad.” Each corner of the game board references the cosmos, and the inner portion of the game board represents the natural world. Both the cosmos and the natural world are important elements in the traditional game.

The PC version will expand upon the original game with added contemporary fantasy themed elements, labyrinths of different design and texture, crystallized tossing sticks that light up and change colors when tossed, and enhanced playing pieces represented by a squad consisting of a Champion and three Mercenaries.

Both the traditional and PC version have outer and inner worlds. The exterior of the traditional game board represents the universe or cosmos, and interior represents the real world, or earth. Whereas the PC version uses an organic exterior to represent the real world, and a labyrinth to represent the inner world of the real world.

The modern era replaces the past with a distinct fantasy setting used to take players deeper inside the inner, magical world.

The look and feel of the new game world will draw upon the spiritual world with a dark toned background. The labyrinth is grand in size, and gives the user the feeling that the world is never ending. The aesthetics of the labyrinth include brightly colored 2.5D elements with smooth textures, round surfaces and directional game landing spaces.

The color schemes consist of tones of dark tones as well as bright hues. The dark tones represent the interior of the labyrinth. The bright hues such as green, aqua, blue, gray, yellow, pink, and lavender are used to bring light to the labyrinth and highlight player characters.

Location

Deep inside the contemporary fantasy world of Crystal Realm lies the Glysun Labyrinths, a plethora of levels designed to keep even the most avid gamer pleased.

Travel

Player characters move forward in a directional pattern around the virtual game board. If a player character is knocked off the game board the PC resets to the start position. Otherwise, characters move in a continuous direction and exit off the game board.

Scale

The size of the world is not generally understood as it is located inside the Crystal Realm, but as players make their way downward through the Labyrinths they begin to notice the extensive size of the underworld.

Weather

Weather is not applicable since the labyrinths are located inside the realm.

Day and night

There is no night and day in this release of the game.

Time

Time is continuous only stopping to change players.

Water

Swirling mists that move and give the appearance of water, but without definition.

Levels

Levels begin inside a labyrinth and continue to move throughout the realm from one labyrinth to the next by simply entering through player start, or exiting during a win condition.

CHARACTERS

Overview

The characters are whimsical fantasy creations designed with Lord of the Rings theme in mind, but without the detailed relationship development associated with typical High Fantasy themed characters.

Characters spawn automatically at the start of each level and do not leave the game board until they exit, or win or lose the game. When overtaken by an opponent, they do not die, but simply reset to their original starting position.

Characters

Goddess Yut Nori

Goddess Yut Nori, is the beautiful goddess of the natural world, *Stellium*. She has long flowing black hair with gold eyes and earth-toned skin. She often wears white as a symbol of light in the world. Her garments are constructed of form fitting leather with edgy cuts similar to modern styles. Her crown is constructed of a simple white leather headband embossed with rare jewels. The cape is long dragging behind her.

Her earthly powers are unique in that she not only controls earth, wind, fire, water, and creatures, but also possesses the rare power to join or split worlds.

She believes that the mind manifests its own destiny, and as such is very unwilling to use her power to split worlds. For once she splits them, they become vulnerable to attacks and no longer hold their once esteemed power.

She is strengthened by Ghlistones, or energy stones that feed her powers strengthening her against attacks from the spiritual realm. Her only weakness is that she requires many Ghlistones to fend off Warlord Azhurlar and his army.

Warlord Azhurlar

Warlord Azhurlar is the warlord who reigns in the spiritual realm, known as *Malefic*. He is a dark knight demon with blue eyes that slit and a sneer for laughter. His armor is constructed of a cosmic alloy known as *Centinium* absorbing all light from the universe. His dark blue skin represents the Ghlistones energy stones consumed from conquered realms.

Driven for power, he consumes natural worlds for breakfast only limited by the scarce availability of Ghlistones. His desire for power pushes him from realm to realm consuming spiritual powers from the Gods and Goddesses who oppose his rule.

Champion Sylpheel

When the world split, and the Crystal Realm was formed, the Goddess Yut Nori used the last of her powers to cast a spell creating a tornado trapping a fairy named *Sylpheel*, infusing her with the power to control wind.

Her turquoise hue comes from Yut Nori's wind that cast her into the dark pits of the copper and aluminum mines dusting her body with elements embedded into her skin.

A non-human champion, Sylpheel became the *Queen of the Wind* and the first champion of the world. No matter where she lands on the game board edge, she takes the shortcut quickly leaving her enemy in the dust.

Rocket Girl

Rocket Girl is a mad gnome mechanic. Her once human long blonde hair changed to pink hue one day when she collided with one of Lord Azhular's minion mechanics. The resulting collision slowly turned the rest of her body pink. She stole the minion's rocket to become the second champion of the world.

When a mercenary is stacked with Rocket Girl, she propels them forward with her crazy rocket (safety not guaranteed).

Boldstone

Boldstone is the brother stone to *Lavarock*. Made of the hardest rock of the Granite Lands, Boldstone was set free when Sylpheel accidentally hit him on her way to the copper mines. Kind hearted, Boldstone happily allows birds and creatures to rest upon him - even flowers occasionally grow out from his rocky formation.

Rolling himself across the land with great speed, Boldstone is an unstoppable force when he begins his roll. When rolled across the game board, he or his mercenaries catch every enemy in the way allowing him to propel past his opponent.

Mercenaries

Mercenary squads are a set of three fantasy minion-sized characters that help Champions beat their opponents.

ART

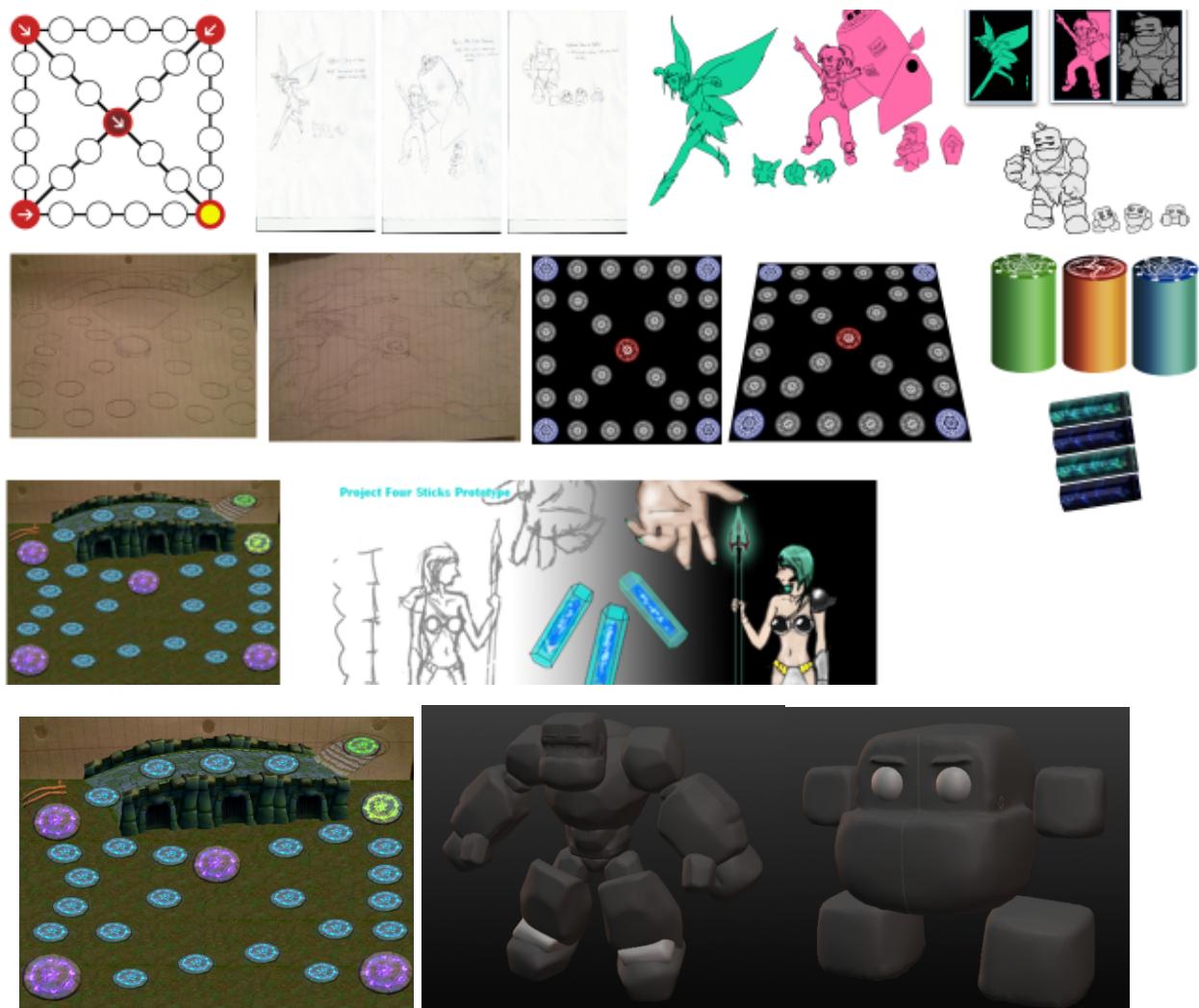
Style

The art resembles contemporary fantasy themed objects consisting of brightly colored characters set against dark, earth toned backdrops.

Central to the theme are labyrinths in spiritual realms that differ from level to level.

The whimsical fantasy characters will be complex in design and much more detailed as the project continues.

Mood Board



Character models

Whimsical with a Lord of the Rings feel, but without the detailed character development standard for typical High Fantasy characters. The following are models for Boldstone and Sylpheel:



Art Assets

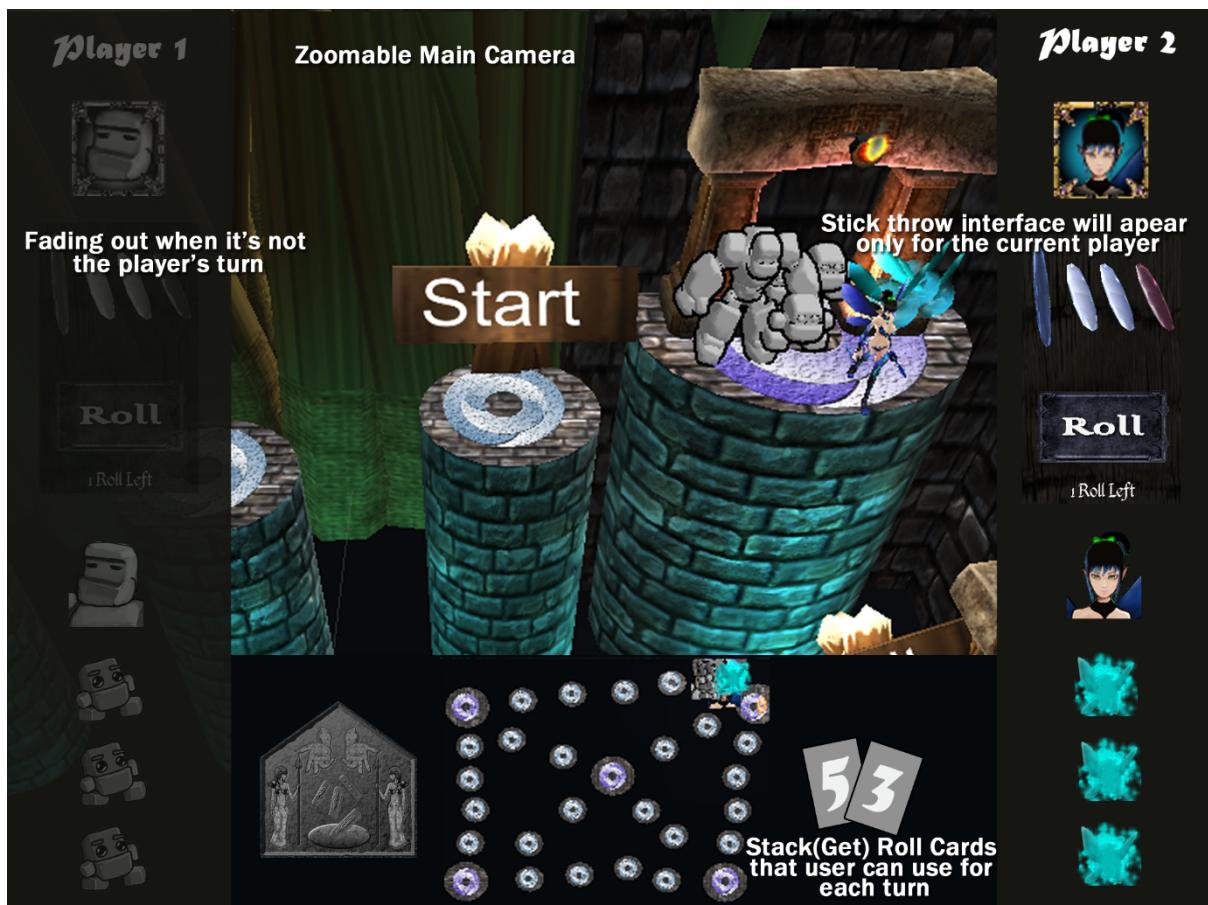
ID	Name	Description of Asset Image
B1	Board	Traditional game board
B10S	Board	Sketch 1 of PC game board
B11S	Board	Sketch 1 of PC game board
B20	Board	Concept PC game board
B21	Board	Concept PC game board, angled
BER_S1	Berry	Sketch 1 of champion Berry
BER_1	Berry and Minions	Sketch 1 of Berry and minions
BER_GC1	Berry game card	Concept Berry game card
BOL_S1	Boldstone	Sketch 1 of champion Boldstone
BOL_1	Boldstone and Minions	Sketch 1 of Boldstone and minions
BOL_GC1	Boldstone game card	Boldstone concept game card
MAP_C1	Height Map	Concept of map (looking down)
LS1	Landing Space	Concept PC landing spaces
LS2	Landing Space	Draft PC landing spaces
SYL_S1	Sylpheel	Sketch 1 of champion Sylpheel
SYL_1	Sylpheel and Minions	Sketch 1 of Sylpheel and minions
SYL_GC1	Sylpheel Game Card	Concept Sylpheel game card
TS0	Tossing Sticks example	Traditional tossing sticks
TS1	Tossing Sticks	Concept PC tossing sticks
UI_1	UI concept	UI concept draft

USER INTERFACE

Overview

The main view takes up approximately two thirds of player's display and consists of the following:

- Start screen with menu options for selecting and naming champions, saving games, or retrieving saved games.
- Dual sidebar interfaces for multiplayers. This option will change to a single sidebar if the game is networked online.
- Mouse click to toss sticks with automatic notification of the number of spaces the player can move, and the number of rolls remaining.
- Spaces around the game board light up to indicate where the player can move.
- Fadeouts with popups that notify players when to change turns.
- Zoom camera enables users to get a closer look at their PC's.
- Mouse click enabled movement for champions and mercenaries.
- Mouse click enabled use of champion skills.
- Automatic display of points, gold, ranking, and energy.



CAMERA

Overview

The camera looks downward onto the game board, but also has zoom features that highlight PC's and follows their movements.

MUSIC AND SOUNDS EFFECTS

Overview

The sound is a compilation of crisp modern tones similar to *Angry Birds* with fun, eerie, and child-like soundscapes. Characters have their own voices with most similar to higher pitched childlike voices.

Music

The background music has modern tones with sounds of high-pitched ringing notes, similar to dropping crystals. The beat changes from tranquil to upbeat dance tones.

Sound Effects

Champions have distinct vocals. There is a vocal when the players change turns to the selected champion. Then there is a different vocal used to indicate the champion or mercenary has moved. High-pitched ringing notes, similar to dropping crystals, are used for the crystal sticks.

PROTOTYPES

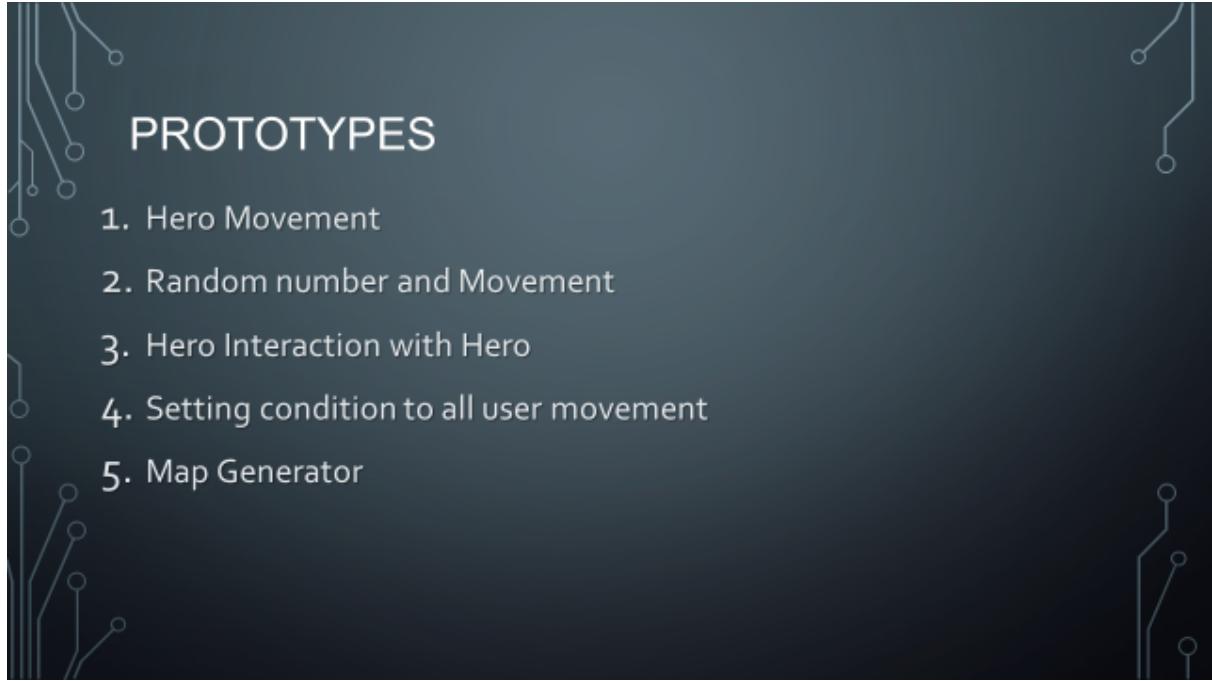
Interesting prototypes

The diagram shows a 5x5 grid of circular nodes. A blue rectangular hero is positioned at the bottom-right node. A red circular node is highlighted at the top-left position. A hand is shown clicking on the top-left node. A green circular node is also highlighted. A pink box labeled "EVENT!" is visible near the bottom-left corner. The number "3" is displayed above the grid.

- **The 1st Prototype**
 - Converting simplified game map into adjacency matrix.
 - If you click a certain node, Blue hero will move to the node jumping node by node between current position and the destination.
- **The 2nd Prototype**
 - Random number N in between 1 and 5 will be generated each click. The blue hero can move only N number of nodes.
- **The 3rd Prototype**
 - When Blue and Red hero meet each other on the same node, simple event message will appear

The diagram shows a grid of nodes with a blue hero at the bottom-right. A red arrow points from the hero towards the top-left. A blue button is at the bottom-left. Below the grid, five numbered buttons (1, 2, 3, 4, 5) are arranged horizontally. A hand is pointing at the button labeled "2".

- **The 4th Prototype**
 - There is a split path with blue hero.
 - When you press the buttons with numbers, the hero will move the numbers of cells.
 - If the hero reach the end, the hero will come back to the starting point.
 - If the hero land on **the corner**, the hero will take the branch.



PROTOTYPES

1. Hero Movement
2. Random number and Movement
3. Hero Interaction with Hero
4. Setting condition to all user movement
5. Map Generator

TECHNICAL CHALLENGES

Complexity

- Significant amount of art work
 - At least 15 art assets, sound effects
- Each champion has unique skills
 - Numerous test cases for interactive
 - Computer AI should be created based on the each of the different cases
 - Each skill has to have unique effect and functions

Difficulty

- Making AI calculate intelligent decision
- Setting conditions to all user movement

RISK MANAGEMENT

Project

- Multiple game rules, stick toss combinations, and player characters leading to an overly complex, and difficult to develop project.
- Extremely shortened project deadline.
- Very heavy coursework, materials, and project requirements.
- Scope creep
- Backlog hours incomplete; output hours appear skewed.
- Copy written material is used.
- Team members are unable to commit to schedules.

Concept Draft

- The concept pitch does not represent the game.
- The game elements lack definition and design.
- The game does not illicit a positive response.
- Communication is missed or not fully explained to each member.

Prototype

- The concept document is incomplete.
- The prototype does not function properly.
- The prototype presentation does not make sense.
- The prototype does not adhere to the standards listed in the grading rubric.

Game Demos

- The concept document is incomplete.
- The game demo does not function properly.
- The Game Demo does not adhere to the standards listed in the grading rubric.

Final Playtest

- The team misses the project deadlines.
- The final project is missing components that will affect the team's grade.
- Too many elements that do not make sense compared with the rest of the game.
- Art and styles that clash.
- Storyline that is difficult to comprehend.
- Gameplay that is too complex for the average user to understand.
- The project fails.

GQM2

Goal

Build a shippable product ready for commercialization by the end of the quarter.

GQM2 Questions

- How do we build a commercial ready product?
- How do we make a game that helps us earn \$200,000 per student team member to pay for our education?
- How do we score an A+ on our project?
- How do we create Flow (game mechanic + human/computer interaction + audio + visuals) in our game so that the user is fully immersed, excited, and wants to continue to play the game?
- How can we generate support from our local target audience?

Metrics

To determine whether or not our game will become a successful commercial product, the game must meet three criteria:

1. The game meets the university's standards for commercialization.
2. Our professors Jason Pace and Kelvin Sung, must choose our game above and beyond the other teams' games.
3. The game must be well-received by university staff, students, and the general public.

To earn \$200,000 per student team member, the game must pull in a profit that leaves enough left over to pay taxes, and associated costs. These figures will be estimated with the help of the commercialization center.

To score an A+ on the project, our team score must equal the following:

1. GPA + 0.2
2. Team score of 20 (five points awarded for teamwork, tools used, processes used, game likes/dislikes, lessons learned).

To determine a positive Game Flow, the team will develop a scoring system to be used in conjunction with a survey. If users rate the game flow above 80% then the game will be successful.

1. Develop a rating system to determine public opinion scores related to a survey.

Mechanism

1. First, to commercialize our game, we will first begin by creating a comprehensive Concept Document that meets industry and university commercialization standards. Second, we will use the Game Pre Production Checklist to ensure all the game pieces are in place prior to

commercialization. Third, we will seek out information from the university Center for Commercialization to ensure our project meets their standards.

2. To generate revenue totaling over \$1,000,000, we plan to follow the strategies outlined in the Center for Commercialization documents.
3. Grades will be determined by how our team applies project management, follows the CSS / IMD course syllabi and grading rubrics.
4. Develop an online Google Survey that is easy for users to use and respond to with clear and concise questions.
5. Build a simple Google Survey consisting of 10 or more questions designed to gather public opinion about the game.

GQM2 Sub-Questions

1. What genre of game do we want to make?
2. What game mechanics do we intend to use?
3. What is the game story and setting?
4. What is the visual style of the game?
5. How will we design our sound (futurist, or)?
6. What type of user interface should we build?
7. Which platform are we going to use?
8. What type of technology will we use?
9. Who is our audience (age, likes/dislikes, habits, etc).

Note: Use theatre as a means to develop human-computer interaction.