Seven-day Roguelike Entry
Mar 9-15, 2013

Version: Day 3

DESIGN GUIDANCE

Design goal
To create (or recreate) a Rogue-like experience while striving for both portability and player-centric design within seven days.

Design platform
In order to reduce the complexity of the experiment and to allow the most iterations of player testing, the design platform must use physical objects that are readily available to the testers.

Design scope
The game Rogue will be used as a starting point, in order to recreate as much of the Rogue experience as possible. The individual game design elements of Rogue, however, are not required and will be excluded unless a specific design element contributes to the new design. Other games in the "Roguelike" genre are not part of the design scope, nor is the definition of "Roguelike" a governing framework. A popular game using physical objects should be used as a starting point for the physical design elements.

TASK LIST

1 **Inspect physical game model**
prereq: none
   1.1   Choose a popular physical game to use as a model.
   1.2   Deconstruct the physical game into design elements.

2 **Inspect the game Rogue**
prereq: none
   2.1   Play the game Rogue to refresh memory on the experience.
   2.2   Deconstruct the game Rogue into design elements.

3 **Choose design elements**
prereq: 1 complete, 2 complete
   3.1   Compare design elements between the game Rogue and the popular physical game.
   3.2   Strip away any elements of the physical game that are unnecessary or not useful.
   3.3   Strip away any elements of the game Rogue that are unnecessary or not useful.
   3.4   Compile design elements of both games into a set to be included in the design.

4 **Design game elements**
prereq: 3 complete
   4.1   …

5 **Test game elements**
prereq: 4 started
   5.1   …

6 **Finalize game elements**
prereq: 4 complete, 5 complete
   6.1   …

7 **Create game documentation**
   7.1   Write game rules.
     prereq: 6 complete
   7.2   Write "story" to wrap game.
     prereq: none

8 **Test game documentation**
prereq: 7.1 started
   8.1   …

9 **Finalize game documentation**
prereq: 8 complete
   9.1   …

10   **Publish game!**
prereq: 9 complete

Table of Contents

(1) INSPECT PHYSICAL GAME MODEL

prereq: none

(1.1) Choose a popular physical game to use as a model.

The most popular physical game I can think of that should yield useful game design elements is the Klondike version of the card game, solitaire. It is massively popular and has high replay value, while still requiring someone to know the rules first. With millions of people having suffered through the rules to reach proficiency at the game, this is a good sign that the game is well-designed in terms of both rules and gameplay.

(1.2) Deconstruct the physical game into design elements.

Terms

First, I want to define the components of the Klondike play area to establish terms for reference. There are four main components (Figure 1.2):

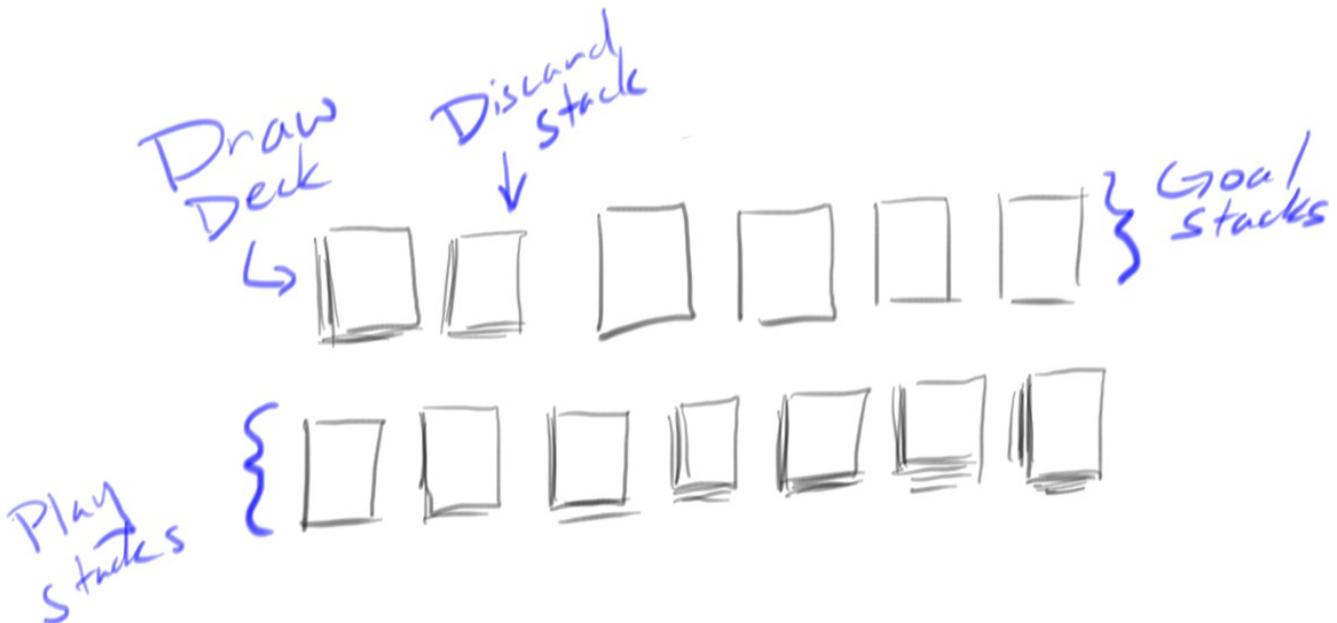- Play stacks

- Goal stacks

- Draw deck

- Discard stack

Figure 1.2: Components of Klondike solitaire

Basic game rules

The game begins with a deck of 52 standard playing cards that are shuffled. The determination of when the deck is considered shuffled changes based on the host of the game. Theoretically, a uniformly random distribution of the cards in the deck is ideal but not considered necessary.

The phase of the game is setup. The host of the game (usually also the player) creates seven horizontal piles of cards with a number of cards in the pile equal to the numbered placement of the piles counting left to right (pile 1 has one card, pile 2 has two cards, …, pile 7 has seven cards). The top card of each pile faces up, and all other cards face down. The remaining 24 cards in the deck are placed to the side facing down as the draw deck.

Play begins once setup is complete. The player's goal is to assemble the entire deck of cards into four goal stacks. These goal stacks can contain cards of only one suit and must be assembled in order of one (ace) to 13 (king). To reach this goal, the player must move cards facing up so the cards facing down underneath can be turned to face up.

Cards that face up can be moved with the following restrictions:

- A card must be played into either a play stack or a goal stack.

- A card may be played on a goal stack provided the card is the same suit as other cards in the goal stack and is the next card in the sequence 1 to 13.

- A card may be played on top of another card in a play stack provided the card is opposite in color from the card currently on top of the play stack and is the next card in the sequence 13 to 1.

- A 13 (king) may be played into a play stack that contains no cards.

As an alternative to moving cards between play stacks, the player move cards from the draw deck and place them facing up in the discard stack. The card on top of the discard stack can be played onto a play stack or goal stack with the same restrictions as playing a card from a play stack.

The game ends when one of the following conditions are true:

- The player decides to forfeit (counts as a loss).

- No moves are available to the player, and the goal stacks are incomplete (counts as a loss).

- The goal stacks are complete (counts as a win).

Variations

The primary variations in the game center around the draw deck and scoring, and both are used to increase the difficulty and/or complexity of the game.

Regarding the draw deck, the host of the game decides how many cards may be drawn from the draw deck at one time. The easiest variation allows cards to be drawn from the draw deck one at a time. The more difficult variation requires three cards to be drawn at a time, effectively reducing the likelihood that any specific card from the draw deck will be playable without first playing other cards.

The host can also place restrictions on the number of times the discard stack can be turned upside down and transferred to the draw deck. The easier variation allows the discard stack to be transferred this way indefinitely, while the more common "difficult" style allows the discard stack to be transferred only three times. Some hosts may reduce this number as far as zero.

Regarding scoring, the host of the game can decide to place a score value on certain actions in the game. Some hosts will start the score at zero and award points for cards that are placed in the goal stacks and for cards that are turned from facing down to face up. As time elapses, points may be detracted from the score, encouraging faster play. As an additional variation, the points may carry over between games, creating a meta game. With the meta game, the host will often detract points for every game started as a cost to motivate players to squeeze every round for maximum points.

Elements of the game's design

The game is designed to be single-player, and in order to increase replay value, introduces both complexity and difficulty. Patterns are designed into the game using the patterns already inherent in the cards' markings. This allows the pattern to be used in multiple ways without confusing the player. For example, moves between play stacks require descending order and alternating color, while moves from the discard pile or play stacks to the goal stacks require ascending order and matching suit. The difficulty of the game is in the amount of imperfect information created by both the shuffling and in the hiding of all but seven of the cards' values from the player. Until the player makes a move, the player does not have full understanding of the consequences.

The setup instructions are somewhat complex, but again the use of patterns helps the player handle the complexity. The locations of the goal stacks, draw deck, and discard stack are not usually explicitly declared spaces, since the arrangement does not impact play. The play stacks vary in the number of cards each contains, but the variance is determined by a counting sequence from one to seven. By introducing the idea of putting the play stacks in order from left to right according to the number of cards in each stack, the setup is reduced to only counting and then remembering to turn the card on top of each play stack to face up.

The game is designed in a way that does not prevent cheating. The design assumes that a player wishes to experience the challenge and does not prevent the player from making illegal moves, reneging on a move, or blatantly modifying the game to allow a win.

Elements of the gameplay

The game is experienced in two distinct phases: setup and play. The setup phase is performed by the host, and the play is performed by the player. When the host is also the player, this means the time spent in the setup phase should be balanced somehow with the time spent in the play phase. The game of Klondike solitaire is popular enough that we can treat it as a baseline for the balance between setup and play times. To get an idea of what these values are, two tests were sent out (Tests #1,2) to test the time spent setting up and the time spent to play a single game. We found that it can take around 4-8 minutes to set up five games, meaning setting up a single game takes somewhere around 1-2 minutes. We have to be a bit vague on the spread of times, since we gathered the times to the nearest minute, which creates a 1 minute variance on each end of the duration. We also found it can take around 2-10 minutes to set up and play a game, with most responses indicating that they felt the time to set up was not long.

The game is also pretty brutal in terms of win:loss ratios. None of the test responses indicated a win, and from experience, I personally have a win:loss ratio of around 7:100 using some of the more difficult variants.

During play, the game's random setup determines what moves are available, and the player determines which moves to make. The player's decisions have a significant impact on the whether or not a winnable situation is converted into a win, but most game setups do not appear to present winnable situations.

The rules for a move are complicated, but the rules can be consolidated down to just a few patterns. Once a player is familiar with the patterns, the player can quickly move to thinking in meta terms about the game and building a strategy over time. The cards themselves are part of the pattern, and the player performs comparisons with other cards rather than recalling specifics about the cards in question.

(2) INSPECT THE GAME ROGUE

prereq: none

(2.1) Play the game Rogue to refresh memory on the experience.

It turns out to be slightly difficult to track down a working copy of Rogue for Windows. The links from within the rgrd wiki pointed to a dead "official" site, and I had to surf around for a while to find what I was looking for. I booted up the game and tried it out as a refresher.

Pain. Now I remember why I didn't get into Rogue until iRogue and uMoria came out for the Palm OS. Navigating with the old HJKL always gave me troubles. The cost of a wrong move in Rogue can be quite high, and tying that cost to a set of navigation keys that do not spatially correspond to the move is just taxing mentally. I can't seem to find a number-pad driven copy of Rogue that doesn't also add other complexity and features to the game, so I'm going to have to partly go from memory. This is unfortunate but will have to suffice.

(2.2) Deconstruct the game Rogue into design elements.

Elements of the game's design

The game is designed to be single-player, and in order to increase the replay value, introduces a large amount of imperfect information. Layouts are built by piecing together rooms by an algorithm that uses a nonsensical (pseudo-random) seed. I think it is important to note that the algorithm is not truly random (no truly random number generator has ever been created), because without a truly random seed, a better understanding is required of how the nonsensical seed influences content. In Rogue, a series of rooms are preset and placed in a bin as part of the game's design. The algorithm then selects rooms by choosing rooms that fit into the available space and allow connections between room doors. Paths are then drawn between rooms to create the connections. With a very finite number of rooms and placements available, the probability of seeing an identical layout over time is actually quite high. However, due to the way computerized random number generators work, the probability of seeing identical layouts in sequence is very low.

The items in the game are generally dropped from a monster, found lying on the ground, or found in chests, and these items are also algorithmically produced. Items with advanced properties have their properties hidden until revealed through use or through using a specific item that itself must be found and identified through use.

The monsters in the game are from a preset pool, with a letter assigned to each race of monster. In some cases, a small letter represents a younger, and presumably weaker, version of the monster

compared to the capital letter. Monsters are placed on the layout using an algorithm that decides placement according to the layout available and decides monster type based on the associated difficulty of the layout.

The layouts are linked together in a sequential fashion, with each next layout in the sequence having an increased difficulty when compared to the previous layout in the sequence. Players are encouraged to continue moving through the sequence by requiring the occasional use of a food resource. In order get more, players must explore more content.

As the associated difficulty increases, weaker monsters become less likely to be selected by the monster placement algorithm and stronger monsters become more likely. At the end, there is supposedly a final item that must be obtained and then transported back to the original layout of the game, but after playing for several months, I had never seen it.

The increasing difficulty of each level, the lack of information, and the need to push forward all combines into a game that is very unlikely to produce a winnable situation.

Player and monster entities movements are identical, allowing movement in the eight major compass directions unless a boundary or other entity occupies the adjacent space in the direction selected. In the case of a boundary, a movement in that direction is ignored by the game. In the case of another entity, an attack is initiated in which the entity moving strikes first and the second entity will attempt an attack only if the first attack is survived. Monster entities will generally move automatically towards the player entity during every turn of the game.

As the player defeats enemies, a number of experience points are awarded to the player. At increasing intervals, the player will gain a level. Each increasing level confers bonuses to the player's performance, including the amount of damage allowed before death, the likelihood of an attack to succeed, and other number increases. These bonuses influence the math of the game in a mostly invisible way, since even the damage a monster can inflict upon a successful attack is not revealed to the player.

Items are broken into categories of food, equipment, potions, and scrolls. The food items must be consumed regularly to allow the game to continue, similar to the "insert coin" mechanic of coin-operated arcade games. The food appears to have no purpose other than a way to hasten the player defeat. Equipment has a category associated with each piece of equipment that prevents multiple pieces of equipment with the same category from being equipped by the player, making these categories a resource that must be balanced. Potions can be consumed by the player to confer an effect that may be positive or negative, but once consumed, all future instances of the item will be identified. Scrolls allow magic spells to be cast, often from a distance, to cause effects on other entities, including items. The scrolls do not usually directly harm the player, but the effect of the scroll can drastically alter how winnable a situation is.

Elements of the gameplay

The game is played using the keyboard keys, with each key press initiating an action. The game progresses only when the player initiates an action, and the player must then try to piece together what happened during the space of the action. Monster entities' movements must be observed and noted through inference, since no actual movement is displayed. The player must note that a monster entity was in one location before and is in a new location now. When multiple entities of the same monster type are present, this task becomes supposition. The player must maintain a high level of awareness

any time monster entities are within view.

In general, the player is constantly prevented from knowing information that may cause failure of the game. Every step of the way, the player is attempting to learn more about the game without losing. Learning more will not create a winnable situation, but not learning more will prevent a winnable situation. The player must constantly balance the need for more information with the cost that learning the information might present. If the player is to become proficient, the player must memorize all monster entities' behaviors and properties, memorize all the possible items' properties and effects, and memorize the rules (both hidden and obvious) of the game itself.

One benefit of the high amount of hidden information is the ability for the player to be delighted with a discovery. The items are algorithmically produced to appear in an unpredictable way, so many of one item may appear with very few or none of another item appearing. The ability to delight the player is left up to the interaction of all of the algorithms, so theoretically, some players will be delighted often while others may never be delighted. On the other hand, the player can also be dismayed. The game has the potential to create extremes, but neither extreme is limited nor guaranteed. Any particular game may produce only middle-of-the-road results.

Rogue is a game of repetition. The game must be played repeatedly in order to learn enough about the game to reach proficiency. Simply playing, though, is not enough, since patterns and pools must be observed, noted, and memorized. The player must then learn to put that memorized information to use.

The physical act of playing the game is also one of repetition. To move one space, the player presses a key on the keyboard once. To move ten spaces, the player presses a key on the keyboard ten times. A majority of the game is played using movement actions. During uninteresting tasks, like trekking back to a set of stairs on a level, the number of movements can be the same as those during a very exciting fight.

(3) CHOOSE DESIGN ELEMENTS

prereq: 1 complete, 2 complete

(3.1) Compare design elements between the game Rogue and the popular physical game.

Use of imperfect information

Both games make use of imperfect information. The imperfect information in both is determined by both physically hiding information and assigning placement of a known pool of entities into an unknown arrangement.

In Rogue, this is done using algorithms and a computerized random number generator and whether or not the player entity is in a position to reveal information.

In Klondike solitaire, this is done through shuffling and whether or not a card is turned to face up of face down.

Consequences of a turn

Both games have known and unknown consequences to each turn, but Rogue hides more of the consequences from the player even after the turn.

In Rogue, the unknown consequences of a turn must be inferred by observing and noting the change in the game state. Sometimes, the change in game state cannot be observed, and this information remains hidden. The impact on whether or not the situation is winnable remains permanently hidden until near the very end of the game.

In Klondike solitaire, the some unknown consequences are revealed immediately after the turn by turning a new card to face up. The amount of impact revealed concerning whether or not the situation is winnable, though, depends on the number of cards already revealed.

Selecting an action

The games separate on the nature of selecting an action to take.

In Rogue, movement is the most common action to take, but using items presents another layer to consider. The type of movement chosen would depend on whether the player is in combat or out of combat, whether the player is exploring or fleeing, and whether the player is free or confined. The decision to use an item then depends on whether the player is in combat or out of combat, whether the item might be used for combat or utility, and whether or not the player can afford to use the item (in terms of the possible unknown effects). The action taken must be balanced against all of the other reasonable actions that are available.

In Klondike solitaire, there are really only three types of actions: moving a card to a play stack, moving a card to the goal stack, or revealing cards from the draw deck. Different rules apply to each type of action, but much of the complexity in the rules can largely be described in patterns. The decision to select a specific action is reduced, because few actions are available at any one time. The probability that any specific action is available is low, turning the availability of actions into the primary resource of the game. While the final goal is to arrange the cards into specific sequences in the goal stacks, the immediate goal is to increase the number of available actions.

Evoking emotions in the player

The games both have the possibility to evoke emotions, but to different degrees.

In Rogue, the wide variety of possible situations presents very few "good" events. The rarity of these events and the possible extreme nature (such as finding an incredible weapon) combine to delight the player. Similarly, the game can present situations that are suddenly awful (such as repeatedly missing attacks and being whittled down by a weak monster entity). The suddenness seems to be key in evoking the emotional response, as well as the rarity. In other words, the emotional response is tied to surprise.

In Klondike solitaire, the variety of situations is far fewer. There are instances when the number of available moves is high, pleasing the player, and there are instances when the number of available moves is dangerously low, displeasing the player. Every once in a while, a situation with only one available move can produce an "unlocking" card that completely changes the game from a possibly losing scenario into a possibly winning scenario. In order for this to occur, the player must be far enough into the game to have built up a good number of sequences on the play stacks. With these sequences available, usually a specific card is required to allow the play stacks to be disassembled and reassembled onto the goal stacks. This situation is usually results in a loss for the player, because the needed card is likely hidden in one of the play stacks' unrevealed cards. The likelihood of the last

move producing the needed card is low, so if that needed card is revealed and "unlocks" the rest of the stacks, then the player is delighted. With the "unlocking" card revealed, the game is usually resolved into a win for the player rather quickly. The delight presented by the "unlocking" card seems to be tied to winning the game.

Reaching player proficiency

The games both require experience through repetition in order to become proficient at the game, but the cognitive demand concerning minutiae is very different.

In Rogue, repetition is required to learn what strategies are effective in various situations. However, in order to identify these strategies and their underpinnings that determine success, the player has to memorize a large amount of small details concerning how the player's attributes, the player's items, the player's available actions, the individual monster entities' attributes, and the layouts. This places an extreme cognitive demand on players, because a mountain of information must be recalled in order to begin piecing together higher-order strategies beyond the immediate moment. Recall is the most demanding cognitive memory task, and Rogue requires it constantly. The high recall requirement forces players to learn the rules for a long time before learning the game is possible.

In Klondike solitaire, repetition is required to begin observing the effect of various strategies. The high amount of imperfect information means much of the consequences of any given action are unknown when starting a game. As the game progresses, more information is revealed, but whether or not the player's strategy would be similarly effective in a different game is unclear. Fortunately, because the rules of the game can be compressed into patterns, the player does not have to process the individual attributes of a card. Instead, every card is compared against other cards. Comparison is a much less demanding task than recall, so players are able to quickly move from learning the rules to learning the game.

Time requirements

The games differ greatly in the amount of time required to play a single game.

In Rogue, a single game can be as short as a minute or can last for hours. The setup time to start a new game is nil, since the computer asks no questions and simply starts a game immediately. A long game gathers meaning as the player progresses, because the progress completely resets to zero at the end of the game. The longer the game lasts, the closer the player is to victory. This also means that as a player becomes more proficient, the value of the earlier progress in the game loses value as the farther progress becomes the new upper limit. The feeling of progress is quite pronounced when a player reaches a new farthest point.

In Klondike solitaire, the setup must be performed first. When the player is also the host of the game and is performing the setup by hand, the setup can take around 1-2 minutes to perform, and the game can take around 2-8 minutes to both set up and play (see Test #1,2). The low time requirement allows a game to be played during small amounts of available time. The progress is somewhat vague for a good part of the game, and an impending feeling of loss is not pronounced. Only when the player is close to a win does a feeling of progress suddenly kick in.

Abstraction

Both games are quite abstract but in different ways.

In Rogue, you have a story that binds the game together. The player entity is an adventurer who is seeking a rare item at the bottom of a dungeon. Actions have an associated word and are triggered, usually, by an associated letter. The visuals present rooms and corridors. For items and entities, though, the abstraction is extreme. An ASCII symbol is used to represent any item or entity, and every item or entity is the same size. The movement of entities considers all grid spaces in the eight major compass directions to be equidistant, even though the diagonal distances are physically 40% farther away. In many ways, the game is similar to a board game, even though the game is played on a computer. The story is necessary for Rogue to work, because without a higher level of abstraction to tie game elements together, many mechanics (like hunger) would be extremely difficult for the player to understand. The story also helps alleviate some of the memorization in a small way. For instance, players can use the knowledge that ants are small and dragons are huge to remember that "a" in the game is fairly weak and easy to kill while "D" is extremely strong and very difficult to kill.

In Klondike solitaire, the entire game is an algorithmically generated problem. There are four sets of sequential cards numbered 1 (ace) through 13 (king), with each set distinguished by one of two colors and one of four suits. Once the cards are arranged, the goal is to take the jumbled arrangement and order it into four sequences of 1 to 13 that match by suit. The rules all have to do with the arrangement or the sequences. Any story would simply be decoration and would not amplify the game itself.

(3.2) Strip away any elements of the physical game that are unnecessary or not useful.

Leverage common knowledge

One of the things that makes Klondike solitaire learnable is its use of a common knowledge. The order of cards, separating them into suits and colors, and turning cards to face up or down are all things known by any card player (and the vast majority of the Western population plays cards to some extent).

Require minimal recall

Klondike solitaire requires only a few rules to be recalled during actual play and uses pattern recognition for the majority of actions. This allows the player to focus on the game rather than the rules.

Use physical items as game objects

This was pre-determined, but the decision was confirmed after deconstructing both games. Physical items make the game much more portable (port it anywhere!) and remove the extra layer of human-computer interfacing. Physical items require much less explanation and do not require the controls to be abstracted.

Minimize repetition

Klondike solitaire has actions that are mostly distinct from one another, and the game has no

requirements for and offers no rewards for repeating similar actions. Simplicity is very appealing.

Keep the game setup and play time short

While games like Arkham Horror do exist and are popular, fatigue tends to set in with a lot of players when a game requires much time. Klondike solitaire is probably a good benchmark for how to make a good short game.

Minimize the number of actions available

The limited number of actions is one of the reasons Klondike solitaire is so easy to play. Even if you aren't very proficient at the game, the next action to take is possible to identify.

(3.3) Strip away any elements of the game Rogue that are unnecessary or not useful.

Elevate the feeling of progress

Rogue does a great job helping you feel like you are progressing. Even though individual actions may not be linear, there is a distinctly linear feel built into the way the player entity progresses through the game.

Use a story to introduce more abstract mechanics

Part of the appeal of Rogue is the idea of being an adventurer in a dungeon, and it allows for more abstract mechanics to be introduced. The abstract mechanics will be key in making a physical game feel more like a Rogue experience.

Use more than one source of imperfect information

Rogue has multiple algorithms generating information independently, and this creates a more complex and interesting variety of scenarios. If the variety is higher, the replay value should go up as well.

Incorporate the player entity

Rogue focuses all of the actions around a single entity. This provides a way for the player to identify with the game as well as allowing concepts like movement.

Incorporate the concept of items

Rogue's items are a way to allow the player entity to change at different points in the game. The discovery of a rare, superior item is also a way to surprise the player

(3.4) Compile design elements of both games into a set to be included in the design.

Use physical items as game objects

Physical objects will help reduce the barrier between the player and the game.

Leverage common knowledge

The rules for the game should try to use the physical items in a way that is already common to those items. Dice, cards, and coins all have common uses for creating unpredictable variation and may be good building blocks for the game. Common patterns should be used wherever possible. Ideally, even the physical actions taken by the player should be related to the game action being taken.

Require minimal recall

The rules should be require patterns wherever possible and minimize the amount of recall required. If recall is required for rare situations, a reference sheet may be necessary.

Elevate the feeling of progress

Each action should in some way contribute to the player's feeling of progress towards winning the game.

Minimize repetition

Each action should be meaningful to prevent repetitive actions that do not contribute to the player's feeling of progress.

Keep the game setup and play time short

This is a solitaire game, and in general, people have much more attention for social games than solitaire games. Keeping the game short will make the game more flexible in terms of finding an audience.

Minimize the number of actions available

Reduce the number of possibilities on any given turn, so the player can focus on higher-level strategy instead of trying to evaluate many options.

Incorporate the player entity

The player entity adds a focal point for the available actions and allows players to identify with the game.

Use a story to introduce more abstract mechanics

Abstract mechanics will help make the game distinct from Klondike solitaire and other solitaire card games. The story will be necessary to introduce mechanics that are separate from the rest of the rules without confusing the player. The story will also be helpful in the establishment of a player entity.

Use more than one source of imperfect information

Multiple sources of imperfect information can create many more variations through interaction than that of a single source. The variety should increase the replay value and the likelihood of surprising the player.

Incorporate the concept of items

An inventory system isn't necessary, but the idea of having something that by holding changes your character can add a lot of variety and flavor, as well as allowing the player to be delighted at finding a rare, superior item. We want to be able to delight the player.

(4) DESIGN GAME ELEMENTS

prereq: 3 complete

(4.1) …

(5) TEST GAME ELEMENTS

prereq: 4 started

(5.1) …

(6) FINALIZE GAME ELEMENTS

prereq: 4 complete, 5 complete

(6.1) …

(7) CREATE GAME DOCUMENTATION

(7.1) Write game rules.

prereq: 6 complete

Materials

52-card deck of cards

Two six-sided dice

Rules for setup

Build a bridge of cards

Goal

At the end of play, all of the magic bricks must be subdued, and the bridge must still be standing.

Rules for play

Each turn, bricks in the bridge wake up and flee.

The troll can subdue the brick by reaching it and applying troll-style diplomacy (thump it senseless). The brick can then be transported to an open hole in the bridge and placed in the hole.

The troll can pick up bricks that have not woken up and use them as tools.

Play ends when the bridge is broken (loss) or when the bridge is subdued (win).

(7.2) Write "story" to wrap game.

prereq: none
I have started playing around with the idea of an angry troll who lives under a magic bridge. He's a troll, he must live under a bridge, but this magic bridge moves. The troll doesn't want to move, so he has to climb out from underneath the bridge and beat it senseless to keep it in place. Trolls aren't particular about the bridges they live under, so it's okay if the bridge is pretty beaten up when the troll is done. It does still have to be a bridge, though. I'm not sure why, but this seems to be an important part for trolls.
I could write up a bunch of this to suit my own fancy, but I would like to make sure the story suits others. A test was sent out (Test #3) to get some others' ideas about how a troll might feel or act. To get the ball rolling, the troll from the Three Billy Goats Gruff was chosen. I assume after being battered down, stomped flat, and thrown into a river, the troll from that story should be suitably angry for my purposes.

I'm a troll
Got a head on my shoulders
I've got shoulders on my back
I'm not shaking any hands
I'm just handing out slaps
I'm a troll
I'm a troll

I've got stones in my stomach
I've got stones in my spine
I've got a pre-ci-sion watch
So I can thump you on time
I'm a troll
I'm a troll

Gonna chew you up slowly
'Till you're chewed up flat
It doesn't matter if you're tasty
But it's nice if you're fat
I'm a troll
I'm a troll

Bash
Flat
Stomp
Splat
Grump
Thump
Eat
Smack
Chew
Spit
Tear
Rip
Boom
Crash
Troll
Smash
I'm a troll
I'm a troll

(8) TEST GAME DOCUMENTATION

prereq: 7.1 started

(8.1) …

(9) FINALIZE GAME DOCUMENTATION

prereq: 8 complete

(9.1) …

(10) PUBLISH GAME!

prereq: 9 complete

APPENDIX

Test #1

Email sent

Tester criteria:
- Testers must know how to set up a game of Klondike solitaire (aka Windows solitaire with seven stacks of cards, and a draw deck).

Materials required:

- 52-card deck of playing cards (no jokers or other "extra" cards)
- A digital clock or watch

Time required: no more than 15 minutes

Instructions: (Use your own discretion to interpret the instructions, but don't try to purposefully misinterpret. Vague or ambiguous directions are likely written that way on purpose.)

- Get out the deck of cards and place them in a single stack with all cards facing down.
- Write down the time, to the nearest minute.
- Repeat five times:

    1. Shuffle the deck seven times.
    2. Set up for a game of Klondike solitaire.
    3. Pick up all the cards and place them in a single stack

- Write down the time, to the nearest minute.

Results: (fill the following form out and reply to this email)
Start time:
End time:

Results received

Start time: 2:28
End time: 2:35

Start time: 7:07 PM
End time: 7:12 PM

Start time:7:22 pm
End time:7:31 pm

Start time: 8:58 PM
End time: 9:03 PM

Start time: 15:25
End time: 15:29

Start time: 2:12
End time: 2:19

Start time: 2:17
End time: 2:23

Email sent

Tester criteria:
- Testers must know how to set up and play a game of Klondike solitaire (aka Windows solitaire with seven stacks of cards, and a draw deck).

Materials required:

- 52-card deck of playing cards (no jokers or other "extra" cards)
- A digital clock or watch

Time required: no more than 10 minutes

Instructions: (Use your own discretion to interpret the instructions, but don't try to purposefully misinterpret. Vague or ambiguous directions are likely written that way on purpose.)

- Get out the deck of cards and place them in a single stack with all cards facing down.
- Write down the time, to the nearest minute.
- Shuffle the deck to your satisfaction.
- Set up for a game of Klondike solitaire.
- Play a single game of Klondike solitaire.
- Write down the time, to the nearest minute.

Results: (fill the following form out and reply to this email)
Start time:
End time:

Which of the following most closely describes your game result:
a. I won.
b. I ran out of moves and lost.
c. I gave up, because I couldn't win.

Which of the following most closely describes how your feel about the length of your game:
a. It was a short game.
b. It was a long game.
c. I don't feel strongly about picking 'a' or 'b'.

Which of the following most closely describes how you feel about the length of time spent setting up the game:
a. The setup is fast.
b. The setup takes too long.
c. Given the length of the game, the setup feels about right

Results received

Start: 2:36
End: 2:39
b. I ran out of moves and lost.
a. It was a short game.
c. Given the length of the game, the setup feels about right.

Start time:7:15 PM
End time:7:22 PM
b. I ran out of moves and lost.
b. It was a long game.
a. The setup is fast.

Start time:7:37 pm
End time:7:43 pm
b. I ran out of moves and lost.
b. It was a long game.
b. The setup takes too long.

Start time:9:05
End time:9:07
b. I ran out of moves and lost.
a. It was a short game.
a. The setup is fast.

Start time: 15:30
End time: 15:36
b. I ran out of moves and lost.
a. It was a short game.
a. The setup is fast.

Start time: 2:16
End time: 2:25
b. I ran out of moves and lost.
a. It was a short game.
a. The setup is fast.

Start time: 2:25
End time: 2:32
b. I ran out of moves and lost.
c. I don't feel strongly about picking 'a' or 'b'.
a. The setup is fast.

Test #3

Email sent

Tester criteria:

- none

Materials required:

- Access to the story of the Three Billy Goats Gruff
  (http://americanfolklore.net/folklore/2010/10/three_billy_goats_gruff.html).

Time required: no more than 20 minutes

Instructions: (Use your own discretion to interpret the instructions, but don't try to purposefully misinterpret. Vague or ambiguous directions are likely written that way on purpose.)

- Read the story of the Three Billy Goats Gruff.
- Write a short piece (no more than one page) about the troll **AFTER** the story. The piece can be in any form: a limerick, a haiku, a description of therapy sessions attended, a letter written home to mother... anything you can think of.
- If the fancy takes you, you can write multiple pieces, but keep each piece short.

Results: (place your written piece below)

Results received

Mr Troll should not have been so mean! If he had made friends with the goats, they could've shared meals and played together.   I hope he learned his lesson and the next bridge he came to as he floated down the river that he decided to stay under, he would make friends and learn to eat grass!

A frightening troll, big and tough,
Treated those on his bridge rather rough;
But a big billy goat
Dumped that troll in the moat
In a manner both gruesome and gruff.

HELP! I have been beaten by the largest billy goat in the world with the sharpest horns and the roughest toes! Please help me find my way home so that I can cry on my mother's shoulder. I have sailed down a stream to a large lake and was taken down a river and into the big ocean. I am stranded on an island. Please send help!

Email sent

Tester criteria:
- none

Materials required:
- 52-card deck of playing cards (no jokers or other "extra" cards)
- A six-sided die (standard die)

Time required: no more than 20 minutes

Instructions: (Use your own discretion to interpret the instructions, but don't try to purposefully misinterpret. Vague or ambiguous directions are likely written that way on purpose.)

- Get out the deck of cards and place them in a single stack face down.
- Shuffle the deck to your satisfaction.
- Create twelve stacks of cards in two rows of six. Place 3, 2, 1, 1, 2, 3 cards in the stacks right to left.
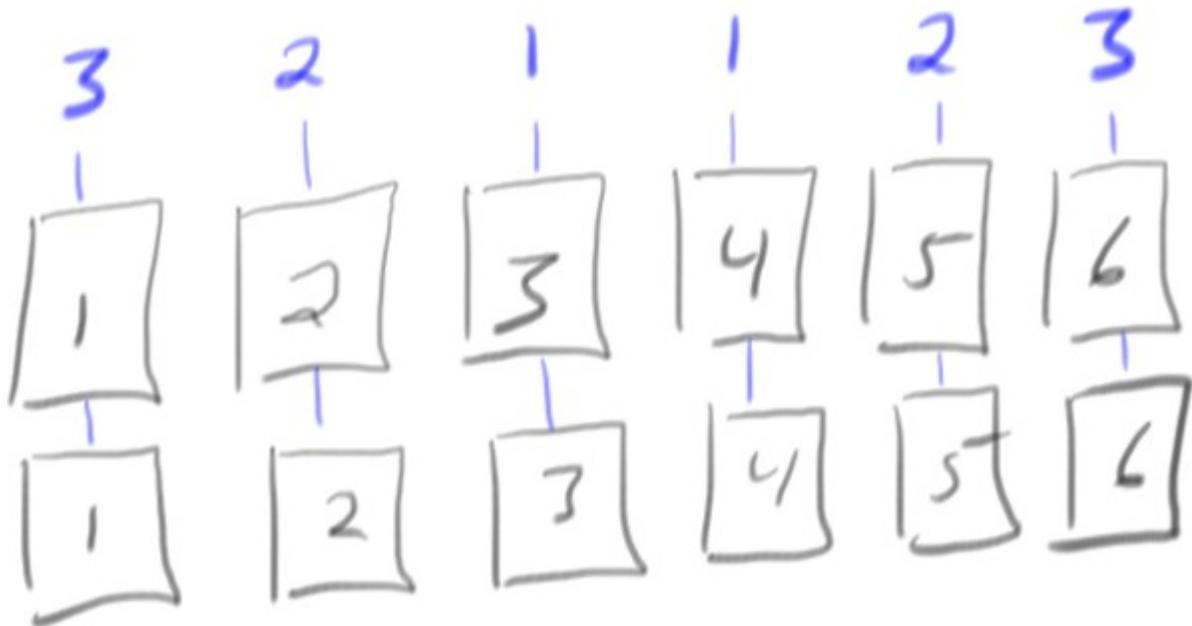
- Place the rest of the cards to the left of the stacks as a draw deck, leaving space for one stack in between (marked in blue).

- Turn the first card in the draw deck up and place it space 1, next to the bottom row.

- Roll the die and remove the top card from the stack on the bottom row that corresponds to the number on the die. For instance, if the die roll was 4, you would remove top card from the fourth stack on the bottom row.
- If the card removed is the same color as the card to the left of the bottom row, place it in the stack on top of the card. In the above case, if a red card was revealed, you would put the card on top of the red card in the bottom left. If the card is the opposite color, place that card in the space to the left of the top row.

- Repeat this ten times:

1. Turn over a card from the draw deck.
2. Place the card in the appropriate stack to the left of the rows. That is the row you will remove a card from.
3. Roll the die. That is the stack you will remove a card from.
4. Place the removed card face up on the appropriate stack color on the left.
5.

Results: (fill the following form out and reply to this email)

How would you describe the instructions:
a. They are simple.
b. They are complicated.
c. I don't feel strongly about choosing 'a' or 'b'.

How would you describe your understanding of the instructions:
a. I understand them perfectly.
b. It took some effort, but I eventually understood.
c. I think I understand some of it, but I'm still confused.
d. I don't understand them at all.

How would you describe the your ability to complete the instructions:
a. I was able to complete them perfectly.
b. I think I completed them correctly, but I'm not sure.
c. I couldn't follow the instructions.

What was the most difficult part of these instructions?