

# Dice Canyon

## The Game of property.

### Brainstorming Process

I started out brainstorming by first thinking about a variety of things I can use dice for. Following were the uses I noted and began working with –

- It can be used to randomize stuff and bring surprises in the game
- It can be used to calculate points
- I can use it to assign powers
- It can be used as an event decider with equal probabilities

After this I decided to look at the variety of dice games which are already in existence and ones which I can use as a base to help me decide a mechanic. The following were the games I looked up and thoroughly examined as to what made them fun, how relevant the dice was to the game. The questions were as follows –

- Is the game just a skinned version of a previous game in existence
- Does it really use a dice to change the way the game works?
- Is it just really random, or can the players somehow strategize?
- What purpose did the die server and how did it add to the game.

The games I studied were –

- Cosmic Wimp out
- Dice Poker
- Balut
- Greed
- High Rollers
- Kismet
- Monopoly

There were many others, I had a look at, but I did not go into all the details of the rules. I mainly used Wikipedia to help me find the games in existence and then looked at them.

After this phase I started brainstorming and started coming up with mechanics and ideas I could use my game for. The ideas I noted down are –

- 1) Make something which involves a deck of normal playing cards and dices.
- 2) It could be a gambling game where players have to make bids by looking at the numbers they roll on the dice.
- 3) An asymmetric game with banker where the banker can choose to throw from 1-3 dice and players roll 1-5 dice. The higher the number of dices they roll, the more points they can get but they also have a lot more on stake.
- 4) Players can buy a particular score. They get some gold initially and then roll dice to get more. Something on lines of the game of Citadel.
- 5) Manipulating a dice to give players an advantage or a disadvantage.
- 6) Banker rolls a dice and the numbers he get positively or negative affect the rolls of a player.

7) Maybe do something with spinning a dice and see how long it lasts.

## An initial set of rules

Out of these I liked 4<sup>th</sup> idea a lot and Thought what if I have a D12 and each number no it represents a territory a player can buy. So I started working on it and chalked out an initial set of rules which were as follows –

- You require a D12 to represent the territories. 2 D6 to determine how much gold you get every time.
- Now, every round the D12 is rolled and that territory is up for sale
- Each player spins a D12 and the person whose die spins most gets to buy it.
- In case of a tie each player spins a D12 and the one that spins the most, gets to keep the territory.
- Now, if a D12 rolls to a number that is already occupied the players pay rent.
- To pay rent, everyone spins a D12 and every player whose die stops spinning before the player, who owns the land, pays rent to that player, equal to the face value of that land.
- The player with the most revenue calculated by adding the worth of property (face value) and the gold they have.

This is where I started play testing and started to modify the rules of the game.

## Play test, observations and analysis.

### Playtest 1

Play testers – Mohan Shine and Me.

Points I kept in mind – The game is not very well flushed out and I want to know how players react to the variety of rules I have.

#### Observations

- The idea about dealing with properties is fun.
- There was a problem with spinning the dice because a player did not know how to spin and it led to her playing rent every time.
- What if the person has to pay rent and has no money
- No real endogenous value of the gold.
- The game seemed complicated.
- The returns as in the rent got on the property was not balanced. The players had no added advantage to buy 12 and not 1.
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- The returns as in the rent got on the property was not balanced. The players had no added advantage to buy 12 and not 1.
- There should be more incentive for players to take risk.
- At this phase it seemed to be only luck based.

Since this was initial playtest, I decided to change the rules more and following are the changes I made

- I decided to change the spinning to straight and simple auction. The player who bids the highest gets to keep that property.
- I decided to change the way rent was collected to. Instead of spinning, everyone rolls a die and everyone whose roll is below the person whose property has come up has to pay rent.
- I assigned a base value to each face. This is the minimum bid on that number, and everyone bidding would pay that much. Also, the player who owns the property collects that much rent.
- The values I assigned were 1, 2 – 1 gold. 3, 4 – 2 gold. 5, 6 – 3 gold. 7, 8 – 3 gold. 9, 10 – 5 gold and 11, 12-6 gold.

## Playtest 2

Play testers – Mohan, Shine and Me

### Observations

- This version definitely has more returns for player when they buy land.
- There was no incentive to buy 12 and not 11, or the ones which have similar values.
- What value to use at the end when we calculate the total revenue
- The players liked playing it initially, but after sometime it felt monotonous.
- This time, a number did not repeat till 8 rounds and that made the play a little uninteresting for some players.
- It still feels as if players have no real decision making opportunities.

### Revisions made

- Decided to change the way how the rent system works. So now, everyone who has to pay rent pays the amount equal to the face value on the die.

## Playtest 3

Play testers – Me, Hain, Austin and Liyue

### Observations

- The players were now more inclined to buy properties which had more face value.
- They seemed excited about each number and where it would land
- Every player, after they bought some property wanted their number to come, and this eagerness bought in a little amount of fun.
- There was a good amount twist in the game when Liyue bought number 9 with 60 gold, and that meant that the other players now had a chance to win against him as long as his number did not show up too often
- The play seems boring, and it also seems a little imbalanced towards the person who gets a little higher gold in the beginning.

### Revisions made

- Decided that the player with the least gold would always roll the property die. This is to balance the game, so that the richest player would then not just pay everything and get the land.
- Also the player who rolls the property die definitely pays rent if the die rolls to an already owned property.

## Playtest 4

Play testers – Me, Mohan, Julianne and Ted

### Observations

- It seemed unfair towards the player with least gold, because he had to roll the property die, and had to definitely pay the rent. Especially after half the properties had been sold, it seemed as if it would make him poorer and would not really serve towards balancing the game.
- I decided to try out a new mechanic, wherein, when the players have to pay rent, not everyone rolls. The person who rolled the D12 definitely pays rent, as for everyone else, they roll a d12 and if it comes to any number less than the current property they pay the rent.
- The above change made number 12 significantly power full and number 1 significantly powerless.
- I also noticed that one player was constantly buying the lower valued ones for cheap prices because no one else was really interested in paying anything for them
- The player, who bought just cheap properties, was not at a significant loss. She did have a little less gold at the end, but it felt as if she would make up with the group.
- The players were definitely into the game towards the end when there was a significant increase in the number of times already owned properties showed up.
- The amount of gold also kept changing a bit more dynamically because the dice was a little well distributed, so every player had an almost equal chance of getting rent on a turn.

### Revisions

- Decided to include a new rule that after 6 properties had been sold out, the player with the most gold would roll the property dice.
- Also, decided to balance the game more by giving more incentive for players to buy lower numbers.
- There were times when the player would roll his own number on D12, so I decided to let him just reroll that number, rather than having any negative effect.

## Playtest 5

Play testers - Hain, Austin, Liyue

### Observations

- The players felt a huge disconnection to the game after the die kept rolling numbers which were not auctioned.
- It definitely seemed monotonous and they commented that it lacks strategy and players did not have much to think about what they can do differently to win the game.
- The players found it confusing whenever a player rolled his own number and had to reroll.
- The play testers commented that the game seemed fun to play with and the auction system is good, but along with the pay day system it makes the game very straight forward and there is not a lot of scope for surprise.
- Also we play tested this game with the objective that the first player to make 100 gold would win, and Liyue won because he owned 12 and that meant that he would be paid 36 gold in a single turn, and that rocketed him to victory when the scenario happened.

### Revisions

Decided not to include 100 gold as the victory standard. Although the concept of racing to a particular amount of gold seems better because then it means that there can be an end to the game.

## Playtest 6 playtest day

Play testers – Me, Ross, Sophia and I am unsure of the name of the 4<sup>th</sup> person. (I think Tom)

### Observations

- Play tested it with the previous version to get more feedback upon the current state of the game. The players seemed to have a similar reaction.
- The surprising thing was that the game with same rules did not seem very monotonous during playtest session #4.
- The auction seemed to be a trivial thin, and did not have a real connection to the game, as told by a play tester.
- One play tester commented that the game can be really fun and all it requires is a fix up on the way pay day and auction system works
- The payday generated a lot of gold, and there did not seem to be a meaningful use of it.

### Revisions

I basically got a lot of feedback, suggestions and ideas to change the game. I have listed them below –

- The pay day seems too come up too often.
- Also, the pay day seemed random.
- 1 seemed to be the least powerful and 12 seemed to be the most powerful number.
- There was a question I asked to myself i.e. should I make this game more strategic or should I make it more random.
- Since the gold basically keeps coming in, it will be a lot of gold at the end of the day.
- Remove paper and pads and keep chips.
- What if the gold from auction goes to the lowest bidder, or the person with the least gold?
- What if players can pay the bank to manipulate the die, by attaching a piece of putty?
- Jesse suggested me to have a look at the game called Raj. The way the auction worked in that game, was that the players got a random set of cards, and could bid for items related to that number only.
- Also, right now the winner seems to be the one with the most gold, and the number of properties owned doesn't make a lot of difference.
- What if the players lost the property if they rolled their own number?
- There could be some kind of jackpot fund.
- Start with a fixed amount of gold for each player, and then have paydays

## Play test 7

Play testers – Me, Rod, Dilara and Rik

### Changes made

- If a player rolls their own territory it goes back to bank.
- The player who wins the auction pays to the player with the least gold

### Observations

- The game seemed balance at first but soon, it was played like a see saw between the player with the highest and lowest gold. The other players couldn't not really win anything because the bids were usually won by the player with highest gold.
- 2 players got frustrated because there was no way for them to become the players with highest gold, and it meant they couldn't buy anything.
- There were only two possible winners by the time 6 properties were sold out.
- Couldn't try out how the mechanic about returning the property back to the bank worked, because no player rolled his/her territory.
- The players commented that the auction part seemed fine to them, but that along with the system of payday was a bit ridiculous and not intuitive.

### Revisions made

- Decided to remove the rule in which the player winning the auction paid the player with least goal.
- Decided to try the game again, with all the rules except above to test out how players responded to the fact that the territories can now be lost.
- Decided to try out, allocating all the players a minimum amount of gold i.e. 30 to begin with and see their response.

## Playtest 8

Play testers – Me, Mohan, Rik and Shine

Observations –

- Players liked the addition of the rule which made players return their property. This made it possible for the more powerful properties to come back into play and provide a necessary twist to the game.
- Giving the players an equal amount of gold initially works, but then we also had a pay day before the initial round of auction and that meant that the player with the highest amount of gold got the property and was basically not able to bid in the auction for 3 turns. This is very possible because the player with highest amount of gold will pay as much as he can to get the property and others will be left with a much greater amount of money than him.
- I feel that giving each player 30 gold, balances the game, but it balances it so much, that players get to buy the lands in turn.
- The players found the auction system monotonous and suggested to change it somehow to give some benefits to the player with the least gold.

Revisions –

- I thought about somehow bringing in a connection between the pay days, auctions and rent paying days. The players felt a lot of disconnect between them. I also feel that, it is these that make the game a little monotonous to play.
- One of the systems I had in mind was periodically; everyone would have to pay some tax. This would mean that, the player with the most property would have to pay a proportionally more taxes as compared to others.
- Thought about bringing in the concept of allowing the player to manipulate the dice somehow, using the putty to make it more interesting and somehow manipulate the balance of the game dynamically.

## Playtest 9

Play testers – Me, Mohan, Julianne, Shine and Chris

New rules/ changes

- The player who rolls his own number gives up that property but also gets to manipulate one side of the die by attaching putty to it.
- Every 3<sup>rd</sup> round the player has to pay the taxes based upon number of property he owns.
- The taxes equal the addition of face value of each property.

Observations –

- The players got way too confused by the idea of manipulating the die. They were doing it a little too randomly.
- They sometimes used a lot more putty and that affected more than one side, and the die had a lesser probability of landing on, for more than 1 numbers.
- The taxes work reasonably well, because it keeps the game a little balanced, and the player with the most number of properties is not always the one with highest gold.
- We decided to remove the manipulation of the die midway, because it really appeared to be a broken mechanic and did not fit the game.
- There was an interesting moment when the number 12 was bought earlier by a player, and the other players were hoping that he rolled 12 so that it goes back to the bank, and when that happened everyone seemed to enjoy it.
- It somehow felt, like players hope that someone gets a bad roll so that they lose something good, giving everyone else an equal opportunity to win.
- It started to get boring after sometime, because the numbers kept repeating and the players were pretty much doing the same thing again and again.

Problems and Revisions

1. This is the point I decided that I really need to change the way auctioning happens. There should definitely be a way to bring about a twist and let a person with less amount of gold somehow dictate the auction, or get something out of it.
2. There were issues with the balance of the game too, and I decided to assign the number 1 an end value of 120 and number 12 an end game value of 10. The other properties will be valued similarly.
3. There was also a problem about the player's gold going into negative, when they had really less gold and they had to pay taxes. I came up with 2 solutions for this problem. 1) They get just half amount of pay day money, as long as they are in negative. 2) They can mortgage their properties, but each round the loan has not been paid, the end game value of the property goes down by 10.

I decided to do some brainstorming about the auction phase and researched the various games that had auctions in them. I went through the auction rules of various games like Modern Art, Felix the Cat, RA, For Sale etc. I noted that there was definitely something unique in each of their auctions. For e.g. , in RA everyone had a set of cards, and during each auction only particular cards could be used to bid, so even if you are the richest, but have no cards of that type , you would not be able to bid. I started thinking about how I could make my auction unique, and my brainstorming notes are as follows-

1. What if the players have the prime numbers as gold, and they can bid on a number only with the factors of that number. So, if 12 comes up, they can bid with a chunk of gold of 3 only if they have it. They would obtain the chunks by rolling 2 D12 dice, and noting down the number they get.
2. What if the land that is going on auction is hidden and the players have to bid upon it, and once the bidding is done it will be revealed.
3. Maybe, the bids by the players will be hidden and it could be balanced to keep it in such a way that, if two players have the same bid, they cancel out each other and are out of the auction. Also, the player with the highest bid should not bid more than the total gold of the person with the next highest amount of gold.
4. Would the presence of asymmetrical information, somehow tend to bring around an interest in the auctions.
5. Can I have consolation prizes for the other bidders, like how it is present in the game Felix the cat?
6. What if the roll of a dice decides what kind of auction happens. So the rolls could probably mean as follows –
  - 1-> Secret Bid- everyone hides their bid, and the auction is resolved in one round itself.
  - 2-> Vickery auction - This is another secret bid, but the price paid by the winner is the second highest bid.
  - 3-> Normal Auction – This is where there is no predetermined order and everyone can bid at any point. The winner is the one who bids the most, and no one tops him.
  - 4-> Set a price Auction- the properties have a preset price, which is the base for the auction.
  - 5-> Pay taxes – This roll means, the players who own properties pay taxes to the government.
  - 6-> Pay day- this is when the players collect gold, by rolling 2 D6 and adding up the values that show up.
7. Another mechanic I thought of was what if one can never bid an amount which is multiple of a property owned by another player. And if he does, he has to pay some sort of penalty. This felt too complicated and I decided to not use it.

While brainstorming these ideas, I really liked the concept of providing the players with some sort of asymmetrical information. It occurred to me that maybe each property could have some sort of pre-determined value, and these values need not necessarily be positive. Thus, if the value is negative, the property will be a liability to the player and harm him instead of actually profiting him.

This made me ask myself a question i.e. then why would someone buy a property with negative value? The solution to this was simple – because they did not know that it's a negative value.

Also, since it's an asymmetric information game, the player which had the information for that particular property would get to control the auction. So, he could probably bluff and pretend that he wants to buy a property with negative value, just because then he could trick another player into getting that property for a high value, and he also get rid of a liability.

I thought this, brought in an interesting concept of players now strategizing as to how they should start their auctions. They had 3 goals, to keep their positive properties by paying as less gold as possible, to get rid of their negative properties by selling it off at the maximum price they can get, and to get other peoples positive properties at the least price he can.

This definitely seemed much more interesting than the previous auction and I definitely wanted to playtest it. It also meant that I had to scrap of most of the rules and pretty much start fresh. I did that and came up with a bunch of rules for my first playtest.

## Initial Rules –

- Each player would be given an equal number of property cards and these would be kept face up.
- Each player would be given three value cards, which ranges from -6 to 6, 0 not included. These can be seen by the player and he has to assign a value to each of his property, but he has to keep the value card face down, so the others don't see it.
- Each player gets 30 gold to start with.
- The Game begins by roll of a 6D. The actions to take are –
  - 1 – Auction
  - 2 – Auction
  - 3 – Pay Day
  - 4 – Pay Day
  - 5 – Taxes
  - 6 – Taxes
- So if it's the Auction phase, a 12D would be rolled and the property that shows up goes for auction. If that property is already taken, then the player collects rent from other players equal to the value of the property. If the value of property is negative, it doesn't collect any rent.
- Pay day , means that every player rolls 2 6D's and gets to keep the sum of gold that turns up on the face.
- Taxes means, that the player with properties which have negative value have to pay to the bank an amount equal to the value. So if a player has a property with value of -5, he would pay the bank 5 gold.

## Play test 1

Play testers - Aditya, Ravi, Hain, Maria. Seewon was observing the game.

### Observations

- One player got a property of -5 value initially in the game, and unfortunately for her the taxes phase happened twice consecutively and she had no gold left. What should be done in that situation? She still had unsold properties.
- There seemed to be no incentive of being the keeper, so halfway through the game I introduced a new rule that the keeper of the land i.e. the person who got the property at start of the game would price the land was bought for.
- But what if, the keeper decides to pay a lot for a property he knows the value of. This would make the game highly unbalanced towards the people who have high value cards, because then it means they can go all in and no one will be able to beat their bid. So, it was decided that the keeper would pay that money.
- The taxing seemed too harsh, and one player got out early because of that.
- The players seemed to lack control of the game.
- One player commented that the dice doesn't seem to be the main focus of the game.
- One of the suggestions raised was that, the weak should be given a small chance to do something great and make an entry back in the game.
- Players seemed to want a chance to affect the other player's properties in order to get an upper hand somehow.
- The thought, that the bluffing part was definitely really interesting and was the best part of it, but it needed balancing and fixing parts of it.

### Solutions/Revisions

- To solve the problem about the keepers, I decided to do the auction in rounds, and the price would be divided amongst all the players who bid till the last round. The keeper would get a share of the price even if he folded before. Although, if the keeper buys his own land, he splits the complete price gets nothing from it.
- In order to give players more control, I thought that there should be a special round where the players can do some property maintenance. In this phase, the players could increase the value of their property or decrease the value of someone else's property.
- I decided to reduce the chance of paying taxes and assigned it to only 6 on the dice. I increased the probability for an auction to come up. So the actions were now as follows –
  - 1 – Auction
  - 2- Auction
  - 3 - Auction
  - 4 – Pay Day
  - 5 – Property Maintenance
  - 6 – Taxes

- Property Maintenance phase – If this actions has to be taken, the D12 would be rolled and whoever is currently in possession of the property that turns up gets to do property maintenance. That player rolls a D4 and the number that comes up determines how many points he has to spend on either improving his properties or harming someone else's properties. He can choose to mix and use one point to improve his and 2 points to harm someone else's etc.

## Play test 2

Play testers - Mohan, Julianne, Shine, Rik.

Changes – The All the above mentioned revisions were included and I wanted to playtest with that.

### Observations

- The players seemed to find the game too complicated.
- It seemed as if after sometime the players got bored and were not really interested in playing the game.
- They commented that the previous version of my game was better, and bluff betting was simply over complicating things.
- I felt that the game was a little complicated because every round a dice would be rolled and it would determine what kind of round it was, this added layer meant that the players had to look at rules every time.
- Also, I felt that the players could not really grasp the concept of bluffing and trying to gain more money from the negative valued lands. This made me question, whether the game would appeal only to a few people.
- Players wanted to have more chance of property modification, because they thought that that was an interesting part of the game.
- There was a time when rent appeared 4 times in a row and that seemed a little frustrating.
- It felt, that if a player got a lot of positive values for their properties, he would have a huge advantage over others.

### Revisions

- I decided to remove the extra layer of rolling a dice to determine what type of round it is.
- Now, every round a D12 would be rolled and the players would auction on it if its value was still unknown.
- If the D12 came up on a number that was already owned, the player would collect rent from others if it was positive or pay to the bank if it was negative valued property. Also, they would roll the special event dice 4D. The special events that could happen are as follows –
  - 1 - > Pay Day
  - 2 - > Pay Day
  - 3 - > Property Management
  - 4 - > property Management
- Every special event was to be played the same way as in previous revisions.

## Play test 3

Play testers - Nemo, Neerav, Sakar, and Yiting.

Observations –

- The players definitely thought it was a little complex in the beginning, but after one round, they got a hang of it and it seemed that they were strategizing by trying to bluff and get more value for their property.
- It felt that the special event should not take place for positive properties because it made them a lot more powerful.
- The players seemed to raise the concern about pay day, and they suggested that what if the money was constant in the game and the player with all the money in the end won.
- At later stages in the game, it was easy for most players to guess what values were remaining, and thus they bid in an influenced fashion. The player felt frustrates that they could not get rid of their negative value properties till the end, and that time everyone knew that it had a negative value.
- Maybe the game master could auction the properties one after the other and the values are not revealed, this would open up the chance of allowing trading of properties.
- It seemed to the players that the owner should not be included in the bidding because he had a biased opinion about the land, and would not do much to affect the auction. I felt, that allowing the owner to participate in the auction would give him the power to manipulate and bluff the other players.
- The bidding, seemed a little weird to the players initially, but later on they got the hang of it and they actually seemed to like the way it tended to balance the game.
- The players seemed to enjoy the fact that they could play mind games with the other players. They also commented that this was one of the strongest features of the game.
- The players found special events interesting because they could now manipulate properties and had the chance of harming others.

Changes that can be made –

- The value of a property is not revealed to everyone after the auction, and when the d12 shows that number again, it goes up for trading and people can buy or sell it. It is after this, that the actual value would be revealed to all the players.
- The game can be reduced to a D10 and thus shortening the amount of time it takes to play.
- The positive cards should not have a special event associated with it.
- There was a suggestion that a player can be give an option to quit and freeze the current empire he has.

Revisions –

- Decided to not give the positive valued cards the chance to have a special event.

- In order to prevent the players from guessing what the values can be, the pool of negative values is increased from -8 to 8 and 12 cards will be randomly chosen and distributed.

I want to consider the following changes, but have not been able to playtest them –

- The value is not revealed till the D12 rolls to that number again, so the property can actually be traded.
- The owner doesn't participate in the auction, but sets a base price based on the value of the property. This also brings in an additional complexity of everyone putting every property for a very high value. This can be solved, by giving the bidders a chance to call fraud and that would mean the keeper would have to pay some penalty.

## Final set of rules

### Version 1

This game can be played by 3-6 players

1. The game requires 1 D12, and 2 D6 to play.
2. There are 12 property cards included which should be kept with the bank and given to the player who buys the particular property.
3. Every round starts with a pay day, where everyone rolls 2 D6 and the sum is equal to the amount of gold they get that round.
4. After the pay day the players roll a D12. The number that comes up is the property that is active at the moment.
5. An active property, which is not, yet owned goes up for auction.
6. The auction happens in a round table format. The players have to bid higher than the player to their right. The last player to remain pays bank the amount of gold he bid and gets to buy that property.
7. If the active property is already owned by a player, he can collect rent on it from the other players. The rent collection happens in the following way –
  - a. The player who rolled the D12 definitely pays the rent which is equal to the face value of the property.
  - b. All the other players roll a D12 and if they roll a number less than the active property they pay rent otherwise they are exempt from paying rent.
8. The player with the least gold should roll the D12. Once 6 properties have been occupied, the player with the most gold starts to roll the D12.
9. If a player rolls a D12 and it lands upon his own property, he returns it back to the bank, and the property is up for auction again.
10. At the end of the game, the players count the total gold they have, and the value of their property. Value of property numbered 1 is 120 whereas, the property number 12 is only 10 gold, rest of the properties are assigned the value linearly.
11. Every 3<sup>rd</sup> round the players have to pay taxes based upon the properties they own. They pay 12 gold for owning property # 12 and 1 gold for owning property # 1.
12. Also, if a player goes into negative gold, he can mortgage a property but the end game value of that property keeps decreasing by 10, every round the loan is not paid back.
13. The winner is the player with the most valuable empire which is calculated by the addition of total gold they have, and total value of each property.

## Version 2

This game can be played by 2,3,4,or 6 players.

### Setup phase

1. Distribute the property cards (The one with P on their back) equally to each player. Keep them face up. The players who get the property are called the keepers of that property and are not the owners. They become the owners once they buy a property by paying for it.
2. Distribute an equal number of value cards to each player, the rest of the value cards will not be used in the game.
3. Each player should now assign one value to each of their property and this card should be kept face down in front of the property card.

### Playing the game

1. Each round begins with rolling of the property dice D12. Anyone can roll the D12 , it doesn't matter.
2. The property corresponding to the number goes up for sale.
3. The player who is keeper of the property starts the auctioning.
4. The auction is round table, and a person should bid higher than the person on his right to remain in the auction.
5. The winner of the owner divides his bid equally amongst the keeper of the property he bought, and the people who he bid with in the last round.
6. If the keeper buys the land himself, he just divides it amongst people who he last bid with, and does not get any share of the bid.
7. If the number that comes up is already owned by someone, the player has to either pay taxes if the property has negative value. Or collects rent from other players if the property has a positive value.
8. The players will pay taxes equal to the value of the property to the bank. This also brings the special event dice into play. The player who pays taxes rolls a D4 and does the action corresponding to the number that comes up –
  - a. 1 – Property maintenance
  - b. 2 – Property maintenance
  - c. 3 – Pay Day
  - d. 4 – Pay Day
9. For Pay day, the player rolls 2 D6 and collects gold from bank equal to the sum of numbers rolled.
10. For Property maintenance, the player rolls the D4 again, and the number determines how many points he gets to spend on property maintenance. He gets 1 point for rolling 1 and 4 points for rolling 4. He can spend a point to increase the value of his property by 1, or to decrease the value of someone else's property by 1. He can choose to mix and match however he wants , so he can spend some points to improve his own property and some points to destroy the value of someone else's property.

11. If the player has to collect rent, all the other players roll the D12 and if they roll a number less than the property's number, they pay the player a rent equal to the value of the property, otherwise they do not pay. (This is a new rule which I haven't play tested with this version, but seemed to work really well with the last version, and I feel it won't make a huge change if I include it in this version too.)
12. At the end of the game, the players calculate the total value of empire by adding the gold they have, and total value of the properties they have. The one with the most valuable empire wins.

## Estimate of value

### Version 1 –

I believe that the game will sell for about 10 \$. Why I keep this value is because, the game just consists of 1 D12, 2 D6, property cards and the chips for gold. All of these can be made at home. The players are basically paying to get to know the rules of the game, and once the rules become public, I don't think they would be willing to pay a high price for this game.

This game might be fun to play , especially when travelling with friends, or if you want to have a game that occupies less space and is easy to setup.

### Version 2 –

This game has a little more value to it because, the game would also include the value cards. This game would contain 1 D12, 2 D6 and 1 D4. It would have 12 property cards, and 17 value cards.

It would have a rule book, and again I think it is this that the people would really pay for because everything else can be made at home.

This game is a lot more fun, in my opinion because the players get to play mind games, and has the potential to become more popular than the first version of my game.

Though, some parts of this game are still broken and no play tested because I changed to this version at the very last day i.e. Monday, and there was not enough time to play test all features, I still believe that the shape this game is in currently is playable and would be fun.

This game would also sell for something around 10- 15 \$.

## Miscellaneous

I have listed below the references I used to research the auctions and the variety of dice games in existence.

<http://boardgamegeek.com/geeklist/54775/innovative-auction-mechanics-in-games>

[http://en.wikipedia.org/wiki/Category:Auction\\_board\\_games](http://en.wikipedia.org/wiki/Category:Auction_board_games)

<http://www.gamecabinet.com/sumoRulesBank/ModernArt.html>

<http://boardgames.about.com/od/toppicks/tp/auction-games.htm>

[http://en.wikipedia.org/wiki/Vickrey\\_auction](http://en.wikipedia.org/wiki/Vickrey_auction)

<http://gfbrobot.com/2012/12/12/variant-is-an-auction-a-lazy-game-mechanic/>