QUATROPOLIS

Designed by
Julia Daniel, Kylie Jue, Stefan Swaans, and Miguel Taruc

P2 Documentation
CS 377I - Spring 2018

HOW OUR GAME WORKS

INTRO

Welcome to **Quatropolis**! As members of the city, you are all tasked with making 7 key decisions to address city issues, all of which will end up affecting some state of the game. You are able to affect the decision through discussion and through using the resources available to you – whether that be money, influence, or both.

The catch is that each of you is also assigned a personal objective that you need to fulfill, plus a personal enemy that has an objective that you need to prevent.

How will your discussions go? Will you rely on deceit, or cooperation? Who among you will succeed?

OVERVIEW

- Game time: 1–2 hours
- 4 players + 1 game master
- Each player is assigned:
    - **a ROLE**: determines specific abilities and resource gain/exchange
    - **a personal OBJECTIVE**: based on role, achieve this objective by the game end
    - **an ENEMY**: prevent that player from achieving their objective
- A round involves 4 phases: Payday, City Hall Discussion, Donation Period, and a City Hall Vote
- A game ends when all 7 decisions have been made (in other words, 7 rounds have been played)
- When the game ends, a player has won if they have achieved their OBJECTIVE **and** have prevented their ENEMY from achieving theirs.
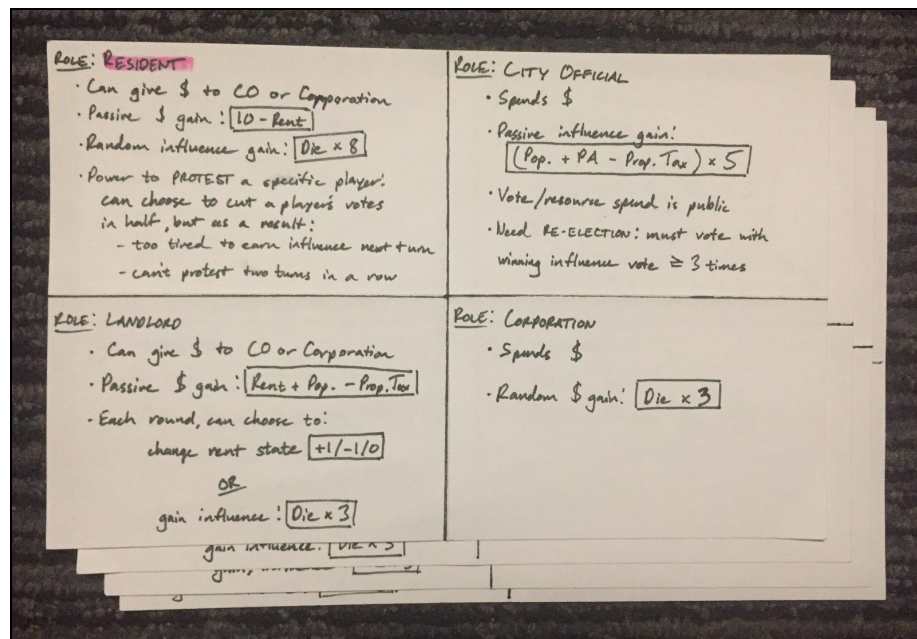
CONTENTS
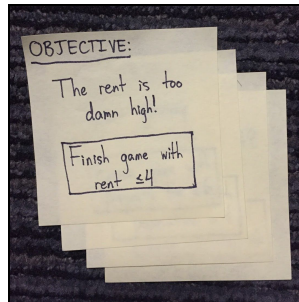
(see APPENDIX for full card texts)
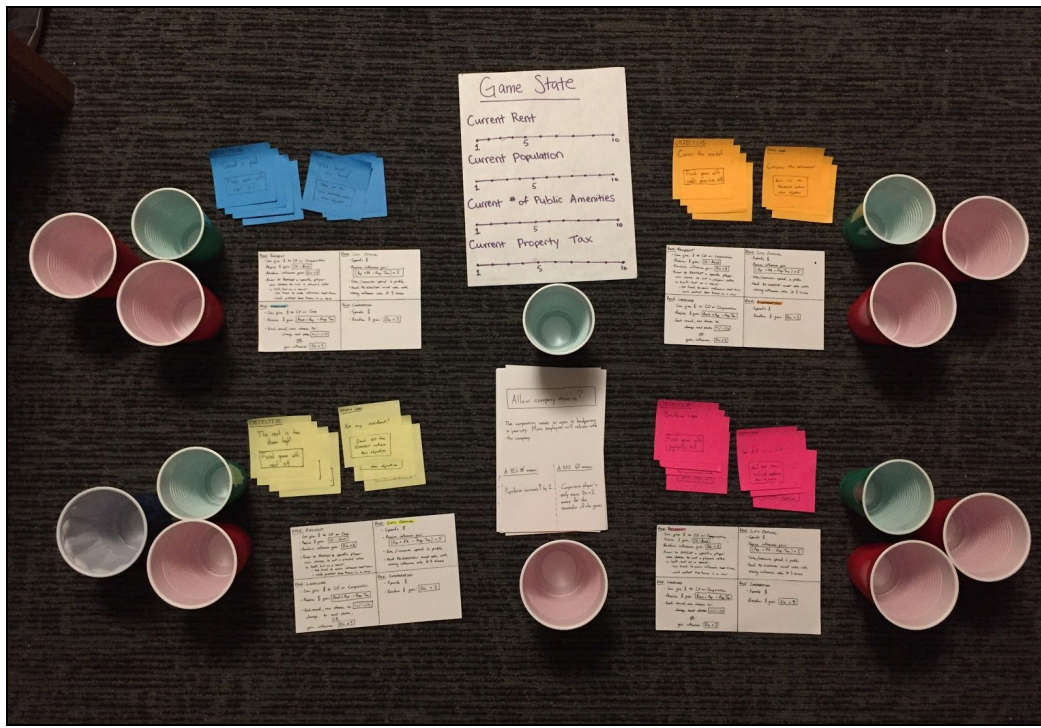
- **ROLE cards (4)**
   ROLE cards outline each of the 4 roles for reference, and assign each player to 1 of them. The ROLE's color will determine what kind of OBJECTIVE cards and ENEMY cards you can get.
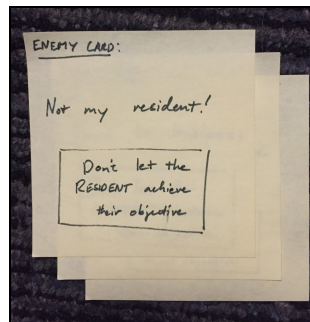
- **12 OBJECTIVE cards (4 per role)**
  OBJECTIVE cards are specific to each role, and 1 out of 3 possible objectives is assigned to each role.

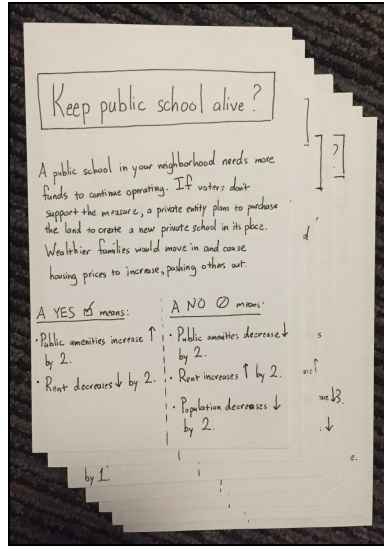- **12 ENEMY cards (3 per role)**
  ENEMY cards are, like OBJECTIVES, personal, and 1 out of the other 3 players will be your enemy. Prevent them from achieving their objective!

- **ISSUE cards (7)**
  ISSUE cards bring up a key decision point for the city to approve (vote "Yes") or reject (vote "No"). Each decision affects the Game States in some way, and therefore affect each player's win condition!

- **Resources**
  - **Money / $** (macaroni)
    Gained by the Resident, Landlord, and Corporation, but can only be used by the City Official and Corporation roles to sway the vote.

  - **Influence** (coins)
    Gained by the Resident, Landlord, and City Official, primarily to sway the vote.

  - Ratio of **1 Money = 3 Influence.** Resources are spent to determine the outcome of each vote.

- **Resource Containers**
  Each player first votes secretly in their own personal cup, and then votes are consolidated into 1 "All" cup to determine the final decision.

  - 5 "Yes" Vote containers (1 per role, plus 1 labeled "All")
  - 5 "No" Vote containers (1 per role, plus 1 labeled "All")
  - 4 Storage containers (1 per role)

- **Game State Tracker**
  Tracks each of the 4 Game States:

  - Rent
  - Population
  - Public Amenities
  - Property Tax

- **Die**

For determining random $ / influence gains that involve a die roll.

ROLES

- <mark>Resident</mark>
  You are a Resident living in an apartment complex of a neighborhood within the wonderful city of Quatropolis.

  As a resident, your game profile is as follows:
  - Through your decent-paying day job, you have **passive $ gain of [10 - Rent]**.
  - You're quite involved in your community, and so you actively campaign and have a **random influence gain of [Die Roll x 8]**.
  - You can't spend $ towards a vote, but you can **donate your $ to the City Official or Corporation** if you trust they will spend it correctly.
  - You have the power to **PROTEST** a specific player during a vote, which means that you can cut a player's vote in half for that round, but as a result:
    - You're too tired to earn influence the next turn, and
    - You can't handle **PROTEST**ing two turns in a row.

- <mark>Landlord</mark>
  You are a Landlord who owns an apartment complex in Quatropolis.

  As a landlord, your game profile is as follows:
  - Because your tenants pay you rent, you have **passive $ gain of [Rent + Population - Property Tax]**.
  - Per turn, you can choose to *either* **change the Rent state [+1 or -1]**, OR campaign and **gain some influence of [Die Roll x 3]**.
  - Like the Resident, you can't spend $ towards a vote, but you can **donate your $ to the City Official or Corporation** as long as you trust they will spend it correctly.

- <mark>City Official</mark>
  You are a City Official, part of the governing body of Quatropolis.

  As a city official, your game profile is as follows:
  - You are a public figure, so you have **passive influence gain of [(Population + Public Amenities - Property Tax) x 5]**.
  - You have an obligation to the city government, and so your **vote/resource spend is public to all players as you vote**.
  - You are striving for *RE-ELECTION*, which means you must **vote with the side of greater influence (the popular vote) at least 3 times.**

- You are allowed to **receive $ donations and spend $ on the vote**.

- <mark>Corporation</mark>
 You are a Corporation with strong economic ties to the city of Quatropolis.

  As the corporation, your game profile is as follows:
  - You are a business that relies on consumers, and so you have a **random $ gain of [Die Roll x 3]**.
  - Like the City Official, you are allowed to **receive $ donations and spend $ on the vote**.

GAME STATES

These game states will be affected by each of the decisions made throughout the game, relating to the success or failure of each player's objectives.

- Rent
  - Starts at 3
- Population
  - Starts at 5
- Public amenities
  - Starts at 5
- Property tax
  - Starts at 5
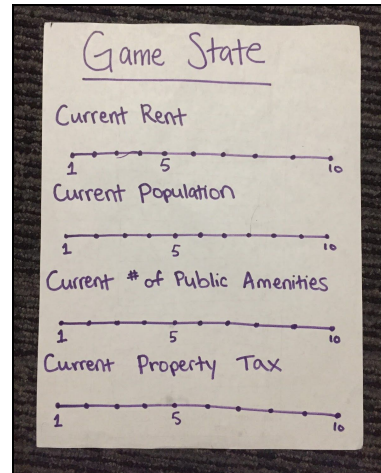
SETUP

Randomly hand out each of the ROLE cards to each of the 4 players. Each player assumes the highlighted role and can see the roles of the other 3 players. Each player also receives corresponding personal Yes/No containers for voting on issues.

Place all the OBJECTIVE cards and enemy cards face-down, and ask each player to randomly choose one OBJECTIVE card and one ENEMY card that match their role's color. Both of these cards are kept secret and are known only by the player to whom they belong, unless they choose to reveal them through discussion. Set the extra OBJECTIVE cards and ENEMY cards aside, face-down and out-of-play.

Shuffle the ISSUE cards and place them face-down in the center of the 4 players. Place the "All" Yes/No containers in the center next to the ISSUE cards.

GAMEPLAY

Each round has four phases:
1. **Payday**
2. **City Hall Discussion**
3. **Donation Period**
4. **City Hall Vote**

Within these phases, the roles take their turns in the following order:

Resident → Landlord → Corporation → City Official

Payday

Each player gains resources as defined on the role card, with the exception of the Landlord who can additionally choose to change the Rent STATE in this phase. This is done in secret (i.e. all other players with eyes closed) through the game master. This phase runs as follows:

- **Resident:**
  - Passive $ gain   *[10 - Rent]*
  - Random influence gain   *[Die x 8]*
- **Landlord:**
  - Passive $ gain   *[Rent + Pop. - Prop. Tax]*
  - Random influence gain   *[Die x 3]*
                             OR
    Change rent state   *[+1 / -1]*
- **City Official:**
  - Passive influence gain   *[(Pop. + PA - Prop. Tax) x 5]*
- **Corporation:**
  - Random $ gain: *[Die x 3]*

Resource gain ends when all players earn their respective resources.

City Hall Discussion

Everyone opens their eyes, and the top ISSUE card is flipped over, with its effects visible to all players. The players are open to discuss how they plan to allocate and spend resources towards the upcoming decision vote.

Things to keep in mind when discussing:
- Anyone who has influence can spend influence on the vote
- Only the City Official and Corporation can put money into the vote
- Money from the Resident and Landlord can only affect the vote if donated through the City Official and Corporation, assuming a sense of trust to use the money properly
- Keep in mind the ratio of 1 Money = 3 Influence
- ROLES are public; OBJECTIVES, ENEMIES, and RESOURCES are private. Players can verbally share private facts, but cannot give any visible proof (such as by showing the relevant card)
- A player's actions are not bound to their words

Discussion ends when all players agree to move on.

Donation Period

Just before the vote, the Resident and Landlord can choose to donate money to the City Official and/or the Corporation, which can be used in the upcoming vote or beyond. This is done in secret through the game master. This donation period ends when the Resident and Landlord both have had the chance to transfer money if they choose.

City Hall Vote

Each player now votes in their personal Yes/No containers in secret. After all players have spent their resources in the vote, and just before the vote is consolidated into the "All" Yes/No containers, the Resident can choose to PROTEST, although they do not know the amount each player has spent on the vote. The affected player has the value of their vote cut in half for that decision (the player loses the entirety of the money they spent, but only half of it is counted toward the vote). In addition, as a result, the Resident:

- Is too tired to earn influence the next Resource Gain phase
- Cannot PROTEST two decisions in a row

The vote is consolidated into the center "All" Yes/No containers in secret, and counted by the game master. At this point, the City Official's vote/resource spend is publicly revealed by the game master. The winning decision is announced, and the game STATES are changed in response. Note that the City Official's vote must align with the winning influence vote on at least three of the ISSUES due to their RE-ELECTION obligation.

These phases together constitute 1 round, and the game ends when all 7 decisions have been made (in other words, 7 rounds have been played).

A player has won if they have achieved their objective **and** have prevented their enemy from achieving theirs.

HOW WE BUILT IT

IDEA GENERATION
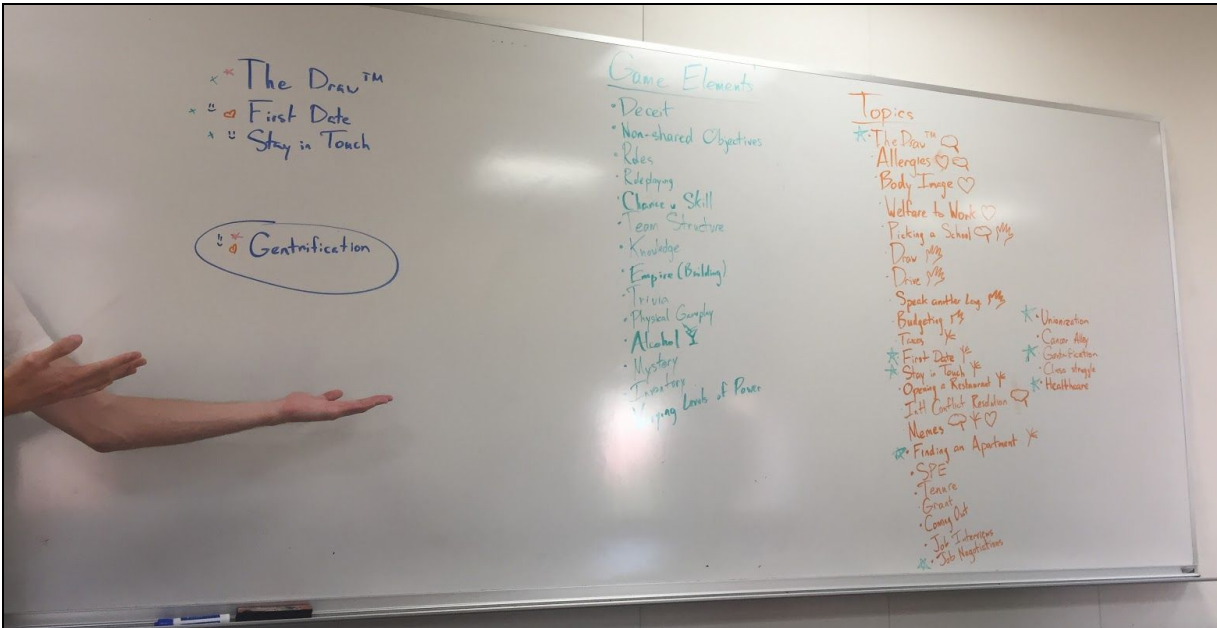
After initially brainstorming over 20 potential topics or themes to focus on, as well as different game elements (such as deceit, roleplaying, chance vs. skill, etc.) that we may want to include, our team decided to focus on creating a game that explained gentrification. We wanted players to empathize with those who feel powerless when losing their homes in cities where rent prices are rising due to gentrification, and understand the power dynamics at play in such a situation..

Our second ideation session then consisted of mapping out potential gameplay flows based on the system we were trying to represent. This process eventually allowed us to understand that the underlying complex system in our game was a city – in particular, power and wealth distribution among different city
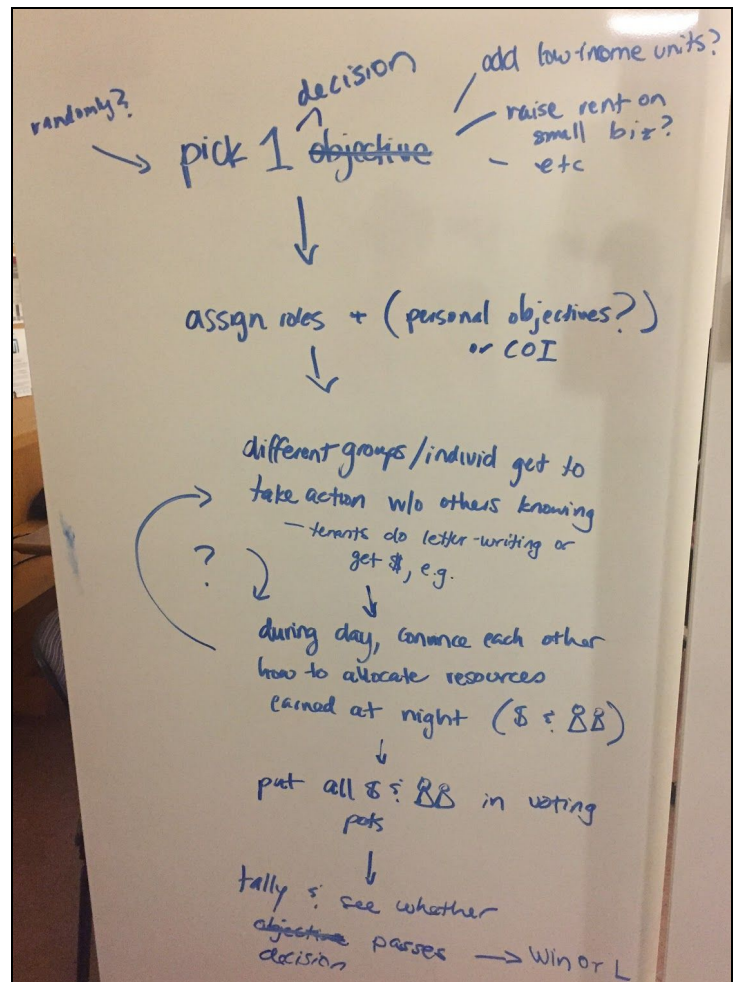
members. As a result, our game theme shifted to focusing less on gentrification specifically and more on the different roles and power dynamics.

To simplify the system, we chose four specific roles that we felt best represented the distribution of power and wealth in a city that we wanted the players to better understand: residents, landlords, city officials (government), and corporations (private companies). We gave each role both a power that enhanced their ability to win and also a pitfall that reduced their chances or overall power. We also generated objectives for each player around the economic state of the city, game state conditions to represent the city's current economic "state," and city hall issues that would affect these conditions. Our goal was to align these game elements with real-world situations one might encounter as an active member of a city (for example, voting to either tear down a park to replace it with housing or renovate it to improve public amenities).
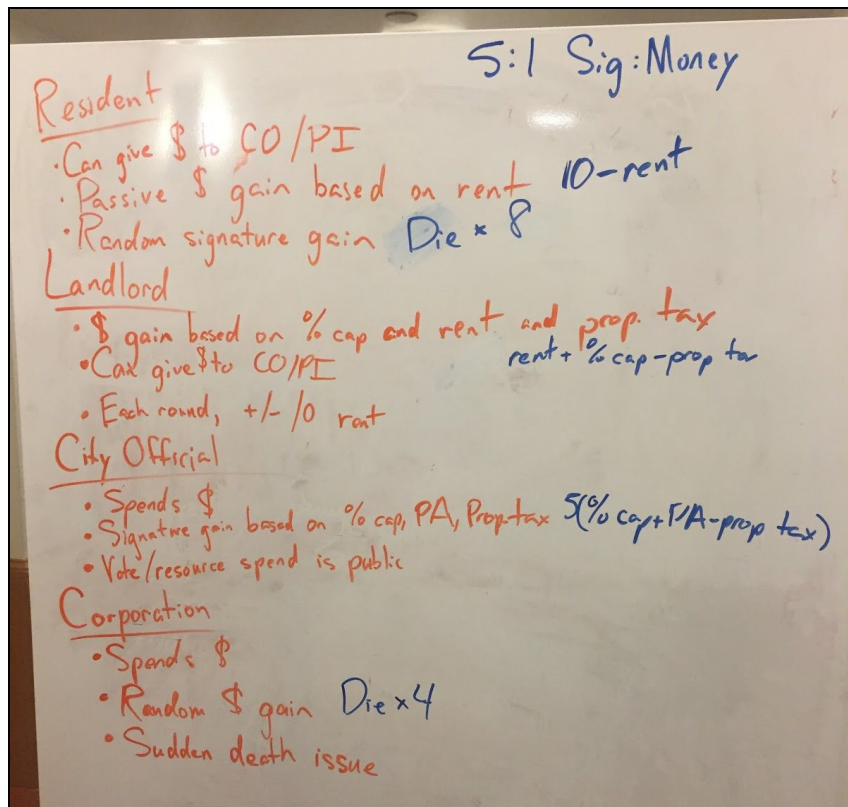
Although we wanted players to have an emotional experience that might parallel the power (or lack of power) that their role has in real life, we also wanted them to have fun and feel like they each stood a chance of winning. Therefore, we carefully considered what types of game design elements and strategy we wanted Quatropolis to have. Ultimately, we decided to focus on two important game mechanics that also matched the system we wanted to represent:

- secrecy and deceit through personal objectives and anonymous votes
- negotiation through discussions with other players in order to achieve personal objectives.

Our last step was to balance the game and ensure that it was possible for each role to win based on their personal objectives and the potential outcomes of each issue card. We also wanted it to be possible for multiple players to win or lose in order to simulate real-world city issues that involve compromise ("I'll vote with you on this issue if you support my objective") and emotional involvement ("I want the landlord to lose because they've been raising my rent"). Through playtesting and iterating, we adjusted our game elements and mechanics to better align them with the strategies and emotional experiences we wanted players to have.

PLAYTESTING AND ITERATING

To test our game, we ran three rounds of playtesting. We asked our users the following questions:

- How did you feel in your assigned role?
- Did these feelings and the power dynamics you experienced align or not align with how you understand this societal role?
- Did you have fun while playing the game? Why or why not?

We also paid close attention to game dynamics such as:

- Does every player feel like they stand a chance at winning the game?
- What strategies (if any) do players need to succeed in the game?
- Are these strategies able to be learned over multiple games?

Throughout all three tests, we also adjusted multipliers, ratios, and physical representations for money and influence. These changes allowed us to better balance power among roles, as well as overall play time that went toward making calculations and counting votes.

Playtest 1: Balancing power distribution across roles

In our first playtest, we found that the power dynamics among roles made some roles more fun to play than others. In particular, the Resident held very little power due to the Landlord's unchecked ability to raise rent, and the Corporation could sway almost any decision due to the large amount of money the player always had. While users reported that their emotional experiences aligned with the message of who tends to have power in society, we wanted to make the distribution of power a little more balanced so that everyone still felt like they had a chance of winning the game. We also observed that although we had initially wanted to include an element of deceit in the game strategy, players were not incentivized to lie and remained entirely truthful of their objectives in the game. While this dynamic of honesty may have resulted from the personalities of the specific playtesters, we wanted our design to more explicitly promote deceit in strategy.

For this iteration cycle, we chose to make more minor changes to first adjust the power distribution among players. Specifically for round two of playtesting, we lowered the ratio between money and influence, allowed the Landlord to choose between gaining direct influence or raising rent, and gave the Resident the power to halve one other player's votes every other round.

Playtest 2: Adding more uncertainty in state changes

While balancing the roles made the game more fun, it did not solve the issue of a lack of deceit. Players still told the truth about their objectives, and instead, the only game element that involved lying was discussing with the other players how much money or influence one intended to put into the vote. We also discovered certain ISSUE cards that acted as "one-shot" cards – whether or not the issue passed immediately prevented particular roles from winning the game.

For our third round of playtesting, we wanted to remove these immediate loss conditions by adding more state changes to each ISSUE card. We made these decisions by more carefully charting out and balancing how many cards affected each Game State by how much and which roles had objectives that depended on each State.

Playtest 3: Creating deceit that requires player strategy

After our third round of playtesting, we found that the game had both more balanced roles and also more balanced state changes and objectives. Therefore, we decided to address the larger issue of a lack of deceit in our final iteration of the game. For the version of the game that we brought to class, we added ENEMY cards and removed one of the two objectives – each player now has only one secret objective but also has a secret enemy who must lose the game in order for that player to win. Our hope was that this change would require players to be more secretive about their objectives instead of only voting strongly on issues that furthered and made explicit their objectives.

NEXT STEPS

Enemy cards and a single hidden objective

During our in-class test, we paid particular attention to players' reactions to the newly added ENEMY cards, as well as having a single hidden objective rather than previously having two. We found that the ENEMY cards were fairly effective motivators for deceitful and secretive gameplay. We were initially concerned that giving players only a single objective would result in player apathy towards many ISSUE cards. Rather, we found that the addition of an enemy with a hidden objective forced players to consider each issue more carefully, as they didn't want to unintentionally allow their enemy to get closer to victory. As such, we resolved to keep the enemy cards and the single hidden objective as gameplay elements.

Longitudinal playtesting

Thus far, each iteration of the game was tested with only a single playtest. Upon reaching a final iteration, we would like to conduct multiple playtests with the same group to determine how the game evolves as players become intimately familiar with it. Do interesting strategies develop that enhance player experience, or do players find a way to "break" the game?

Physical components and clarity

In its current incarnation, our game can sometimes feel a little bit unwieldy as players funnel coins and macaroni between multiple plastic cups. In future, more polished versions of the game, we would create customized game pieces that feel better to work with. Additionally, we would like to address the confusing mismatch between reality and the game's schema by changing influence to a resource other than coins, as coins represent money in the real world.

Player onboarding and complexity

Perhaps the largest issue we ran into during in-class testing was player onboarding. Our game is decently complex, though not obstructively so. However, we found that players had a difficult time following the rules initially and didn't become comfortable until a few rounds into the game. In the future, we believe that an instruction manual would be useful, as players would not need to internalize all of the information at once. We would also consider giving each player an additional "cheat sheet" detailing game flow. We'd also like to investigate ways to remove unnecessary complexity from the game if possible. We value having a game complex enough to model our system convincingly, but also want the game to be lightweight enough so as not to deter most players. This issue of simplicity versus complexity is one we think warrants further playtesting and ideation.

Balance concerns

As we ideated and iterated on the game, the topic of balance came up with fair frequency. As mentioned above, we made several changes to player roles to bring them more into balance with one another: namely, weakening the Corporation and strengthening the Resident. We felt that a better balanced game would ultimately be more fun and engaging for every player. However, our game is meant to model an inherently unbalanced actual system. As such, we would like to conduct more playtests centered around discovering the optimal degree of imbalance to accurately portray the system while still fostering player enjoyment.

Number of players/roles

We chose to create a four-player game with only four roles primarily due to time and testing constraints. However, in our ideation process, we had many additional ideas for potential roles, and we don't feel that any aspect of our game necessarily constrains it to four players. In the future, we would consider adding additional roles to the game, as well as increasing the maximum number of players. We've also considered decreasing the minimum number of players, allowing for games with fewer than four players. Lastly, certain roles like the Landlord and the Resident could potentially be duplicated across multiple players while still maintaining thematic consistency. Each of these changes would require individual playtests to ensure that they don't fundamentally alter the game in a negative way.

APPENDIX

FULL CARD CONTENTS

Role Cards:

Role: Resident
- Can give $ to CO or Corporation
- Passive $ gain: *[10 - Rent]*
- Random influence gain: *[Die x 8]*
- Power to *PROTEST* a specific player - can choose to cut a player's votes in half, but as a result:
  - Too tired to earn influence next turn
  - Can't protest two turns in a row

Role: Landlord
- Can give $ to CO or Corporation
- Passive $ gain: *[Rent + Pop. - Prop. Tax]*
- Each round, can choose to:
  Change Rent State   *[+1 / -1 / 0]*
                          OR
  Gain influence   *[Die x 3]*

Role: City Official
- Spends $
- Passive influence gain: *[(Pop. + PA - Prop. Tax) x 5]*
- Vote / resource spend is public
- Need *RE-ELECTION*: must vote with winning influence vote >= 3 times

Role: Corporation
- Spends $
- Random $ gain: *[Die x 3]*

Objective Cards:

Role: Resident
- OBJECTIVE: Breathing room
  Finish game with Population <= 4
- OBJECTIVE: This wonderful life
  Finish game with Public Amenities >= 6
- OBJECTIVE: For the good of all of us…
  Finish game with Property Tax >= 4
- OBJECTIVE: La vie boheme
  Finish game with Rent <= 4

Role: Landlord
- OBJECTIVE: Greed is good
  - Finish game with Rent >= 7
- OBJECTIVE: Fill 'er up!
  - Finish game with Population >= 6
- OBJECTIVE: Libertarian leanings
  - Finish game with Public Amenities <= 4
- OBJECTIVE: Representation without taxation
  - Finish game with Property Tax <= 4

Role: City Official
- OBJECTIVE: The rent is too damn high!
  - Finish game with Rent <= 4
- OBJECTIVE: Tropical getaway
  - Finish game with Property Tax >= 6
- OBJECTIVE: Keep Quatropolis weird
  - Finish game with Population <= 4
- OBJECTIVE: Can we build it? Yes we can!
  - Finish game with Public Amenities >= 6

Role: Corporation
- OBJECTIVE: Corner the market
  - Finish game with Public Amenities <= 4
- OBJECTIVE: Expand consumer base
  - Finish game with Population >= 6
- OBJECTIVE: Cut overhead costs
  - Finish game with Property Tax <= 4
- OBJECTIVE: Desirability through exclusivity
  - Finish game with Rent >= 6

Enemy Cards:

Role: Resident
- ENEMY: You don't own me
  - Don't let the Landlord achieve their objective
- ENEMY: The fall of the Corporate Empire
  - Don't let the Corporation achieve their objective
- ENEMY: Vive la resistance!
  - Don't let the City Official achieve their objective

Role: Landlord
- ENEMY: This land is my land
  - Don't let the City Official achieve their objective
- ENEMY: House rules
  - Don't let the Corporation achieve their objective

- **ENEMY:** Tenant menace

    Don't let the Resident achieve their objective

Role: City Official
- **ENEMY:** Not my resident!

    Don't let the Resident achieve their objective
- **ENEMY:** Government-controlled property

    Don't let the Landlord achieve their objective
- **ENEMY:** Down to business

    Don't let the Corporation achieve their objective

Role: Corporation
- **ENEMY:** The Big Short

    Don't let the Landlord achieve their objective
- **ENEMY:** Consume the consumer

    Don't let the Resident achieve their objective
- **ENEMY:** Corporatocracy

    Don't let the City Official achieve their objective

Issue Cards:

Build more low-income housing?
- The creation of more low-income housing, funded by taxes, would affect rent prices across the city. Without it, housing costs have been rising steadily.
- A YES means:
    - Rent decreases by 3.
    - Property Tax increases by 2.
- A NO means:
    - Rent increases by 3.
    - Population decreases by 2

Allow company move-in?
- The corporation wants to open its headquarters in the city. More employees will relocate with the company.
- A YES means:
    - Population increases by 1.
- A NO means:
    - Corporation player only earns **[Die x 2]** money for the remainder of the game.

Establish rent control?
- A measure to establish rent control is up for vote. Supporters want to activate a rent cap enforced by the government.
- A YES means:

- - Rent is capped at 7 for the remainder of the game.
  - A NO means:
    - No change

Keep public school alive?
- A public school in your neighborhood needs more funds to continue operating. If voters don't support the measure, a private entity plans to purchase the land to create a new private school in its place. Wealthier families would move in and cause housing prices to increase, pushing others out.
- A YES means:
  - Public Amenities increase by 2.
  - Rent decreases by 2.
- A NO means:
  - Public Amenities decrease by 2.
  - Rent increases by 2.
  - Population decreases by 2.

Give HOA more power?
- The HOA (Home Owners Association) is requesting more funds to beautify the neighborhood. If the measure is not approved, funds would be stripped from the HOA, and people would move out as the area deteriorates.
- A YES means:
  - Property Tax increases by 1.
- A NO means:
  - Property Tax decreases by 2.
  - Population decreases by 1.

Replace park with housing?
- This measure would allow the city to build apartments over the local park to bring in more residents. Property taxes would also decrease since funds for park maintenance would no longer be necessary.
- A YES means:
  - Public Amenities decrease by 1.
  - Population increases by 2.
  - Property Tax decreases by 1.
- A NO means:
  - Public Amenities increase by 1.

Maintain public transportation system?
- Roads in the city are deteriorating, and higher property taxes are needed to fund renovations. The measure also expands public transportation to support commuters and increase residents. Those against the measure want to pull funds since they believe

the government has not been making good use of the money and needs a better action plan.

- A YES means:
    - Public Amenities increase by 2.
    - Property Tax increases by 2.
    - Population increases by 2.
- A NO means:
    - Public Amenities decrease by 2.
    - Population decreases by 2.