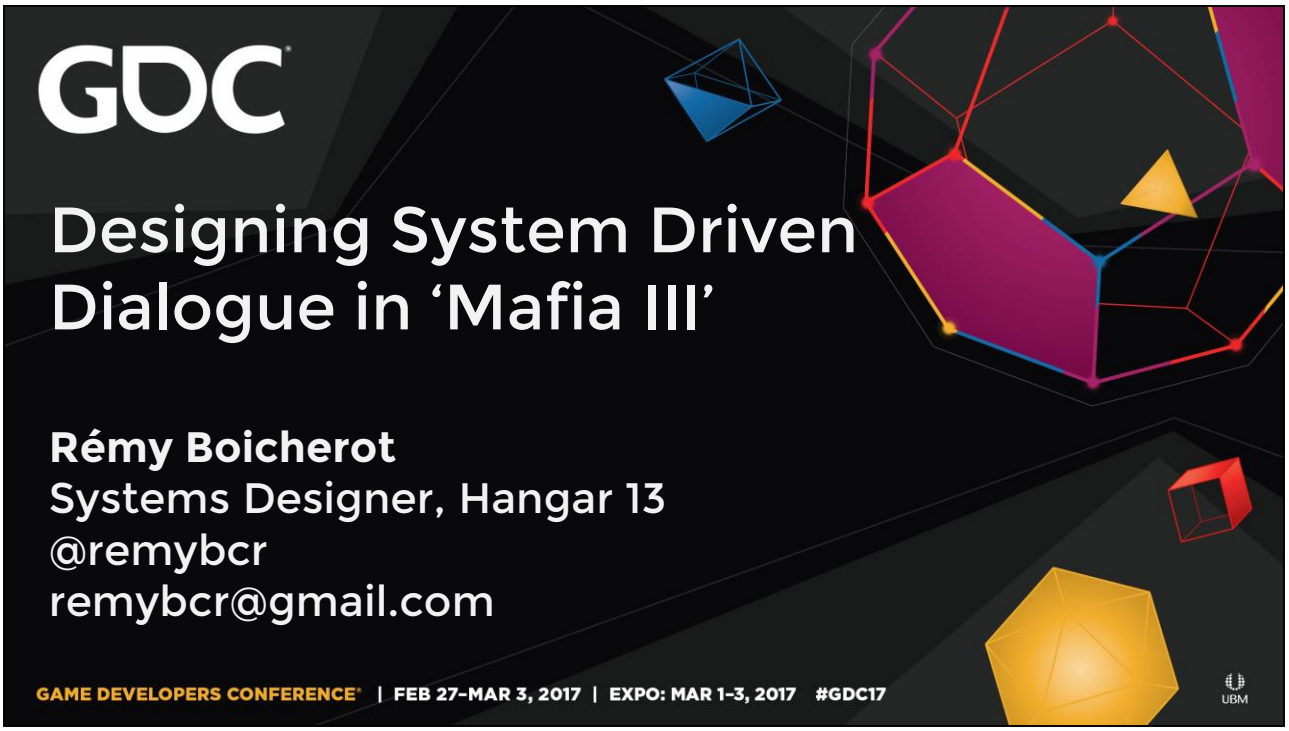
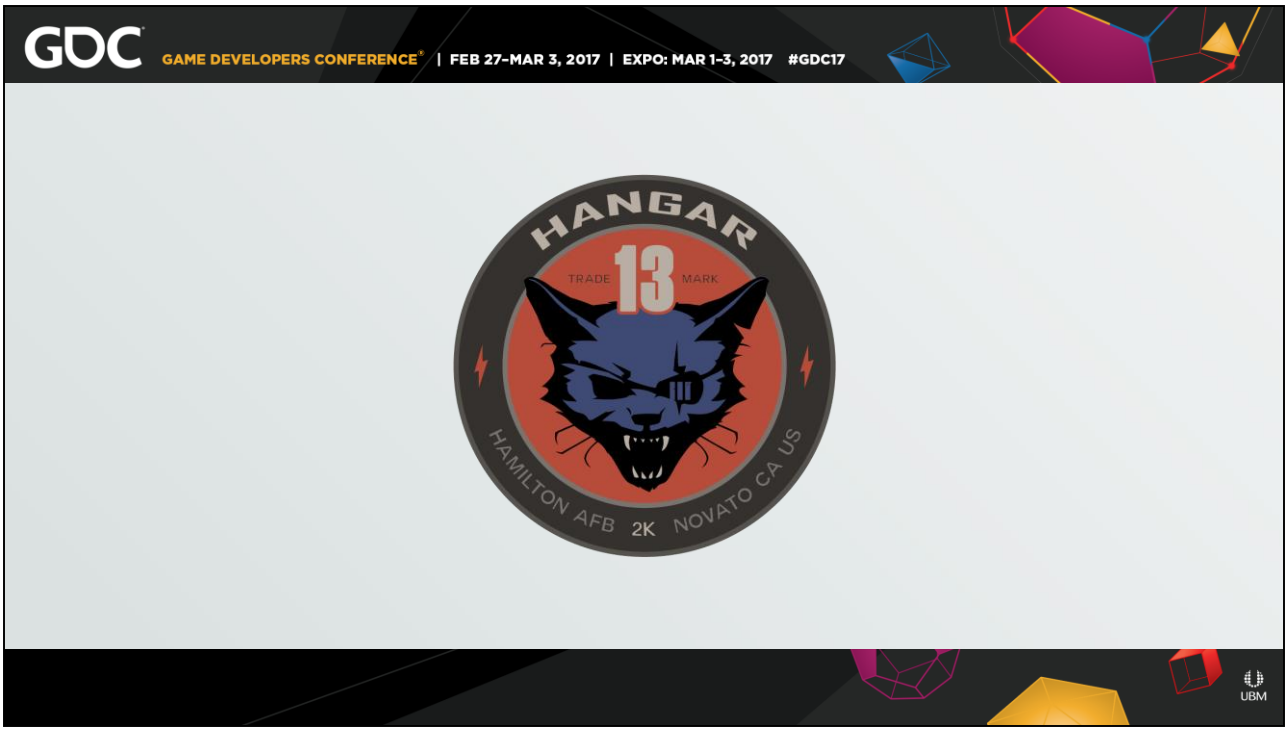


Hello everyone, today I'm going to talk about dialogues and systems!

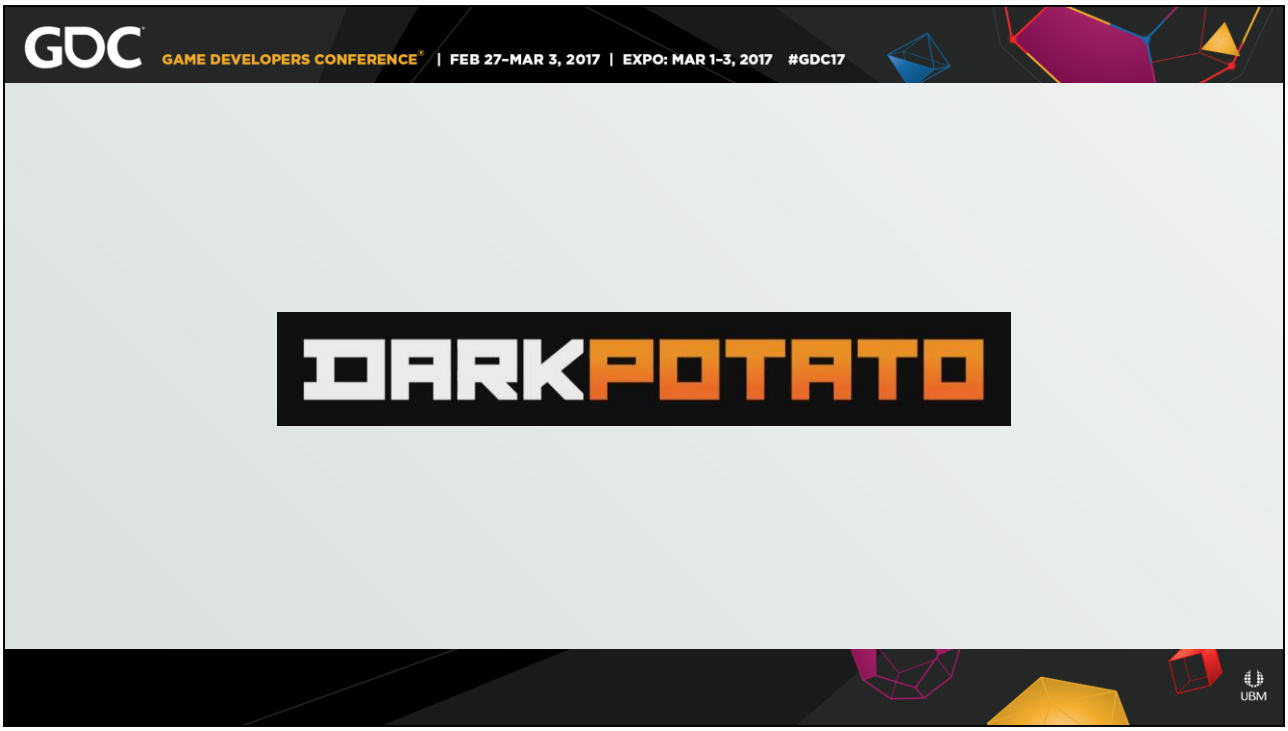
My name is Rémy Boicherot and I am a game designer fascinated by the intersection of gameplay, systems and narrative, with a special interest for dialogue systems.

We've done some work on system driven dialogue which I hope you will find interesting. This is what I'm going to present you today.

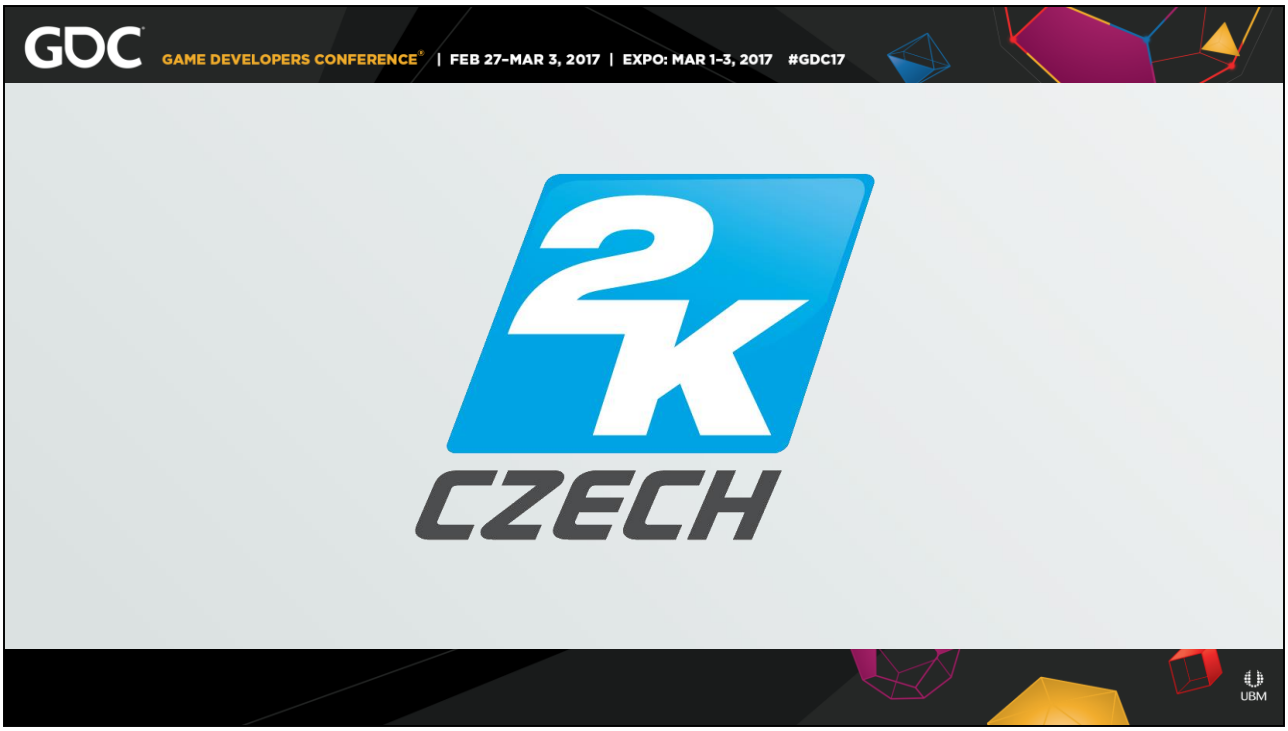


I work at a studio called Hangar 13, in Novato, California, about thirty minutes north of San Francisco. On October 7th, 2016 we released a game called 'Mafia III' on Playstation 4, Xbox One and PC.

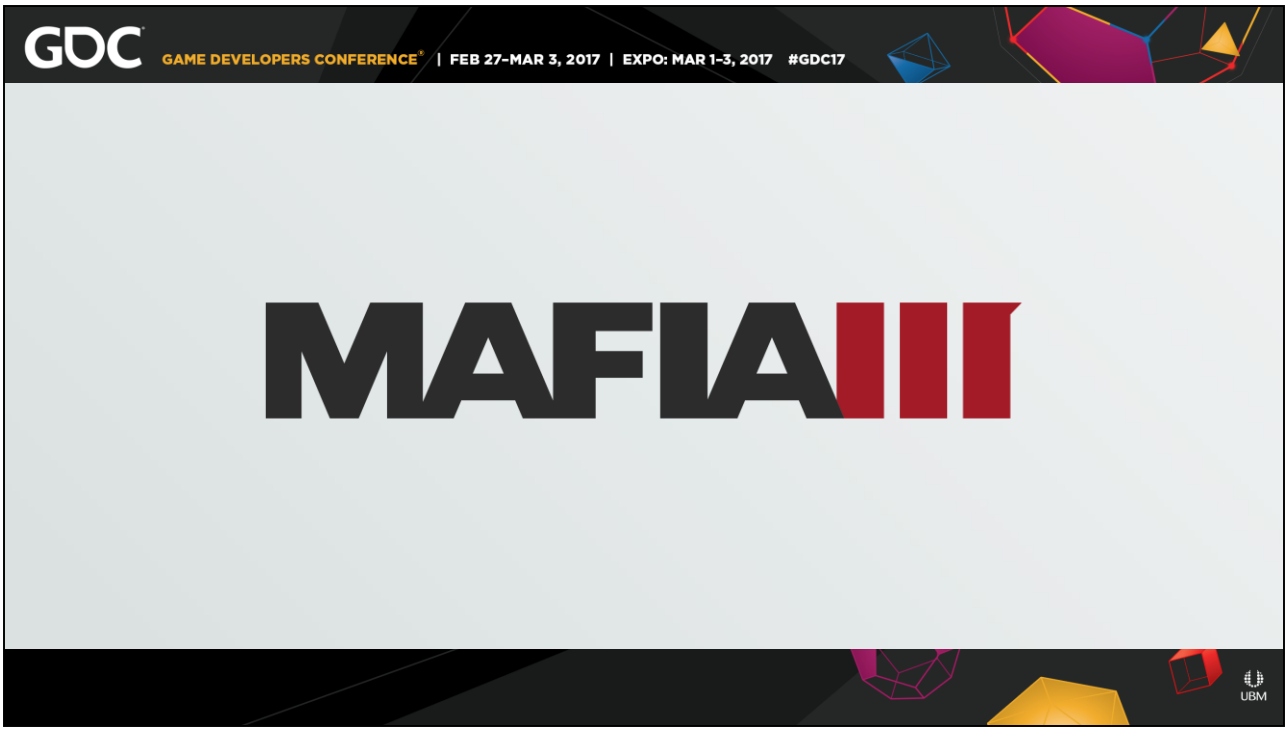
I am from France and I pursued a Master's degree in Game Design & Management in Supinfogame Rubika, France, where I graduated in 2012.



During my student time I performed an internship at Dark Potato Studios in Singapore.



And at the end of my studies I accepted a position as a Junior Game Designer at 2K Czech, in the wonderful city of Prague, Czech Republic, and a few years later I was transferred to Hangar 13 where I work today.



Mafia III is an open world game on organized crime set in 1968 in a city called New Bordeaux, Louisiana, USA, inspired by the real city of New Orleans.

You play the game as Lincoln Clay, a Vietnam veteran who wages war on the local Mafia.

In Mafia III, after being betrayed by the mob, you have to conquer three districts from the Mafia which enables you to collaborate with three Underbosses: Vito – the main protagonist from Mafia II – here on the left, and two major new characters in the franchise: Burke, on top here, and Cassandra at the bottom. Lincoln, the hero, is on the right.

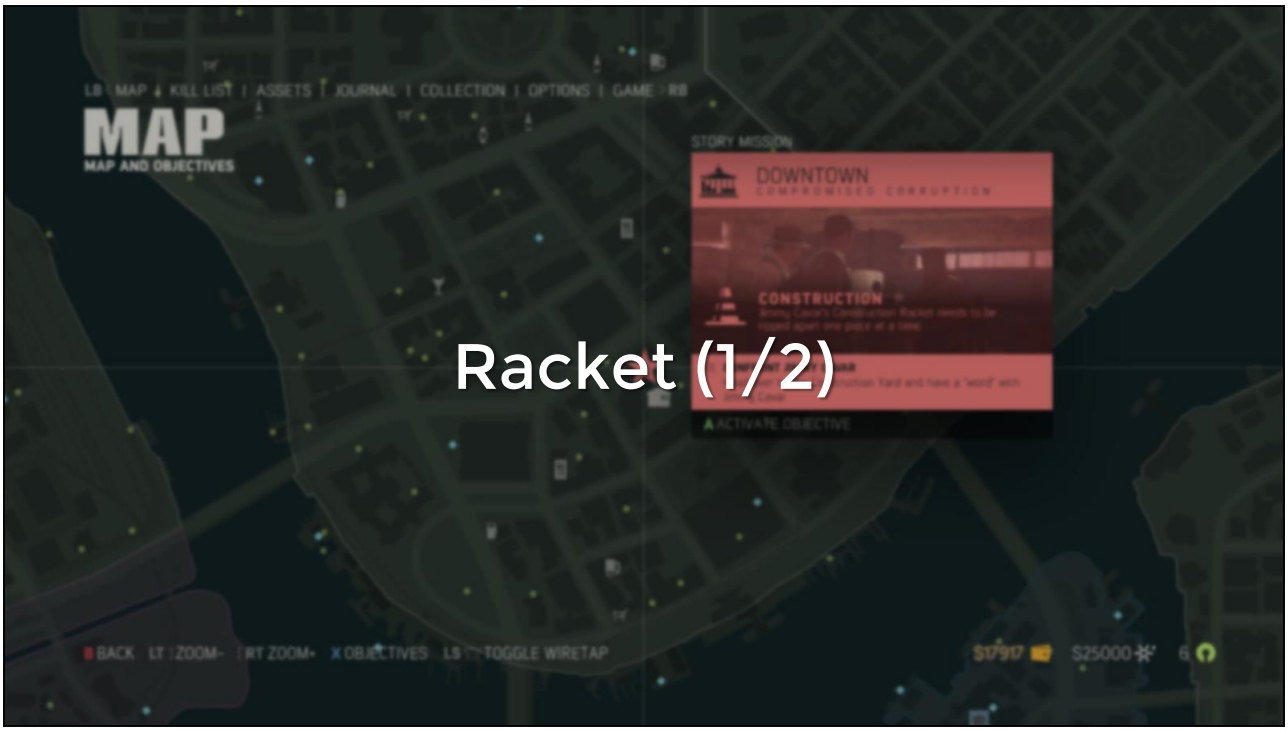
MAFIA III

- Conquer six new ‘open’ districts
- Territory division has a major influence

- After all Underbosses have been unlocked, your objective is to conquer six new districts which you can allocate to any of the three Underbosses.
- How you divide territory influences the economy, the rewards, weapons, and perks that you get; but it also has a great impact on the characters reactions, the game structure through unique missions, and the ending of the game.

Game structure

So for those who haven't played the game, after you've unlocked all Underbosses, the structure goes like this:



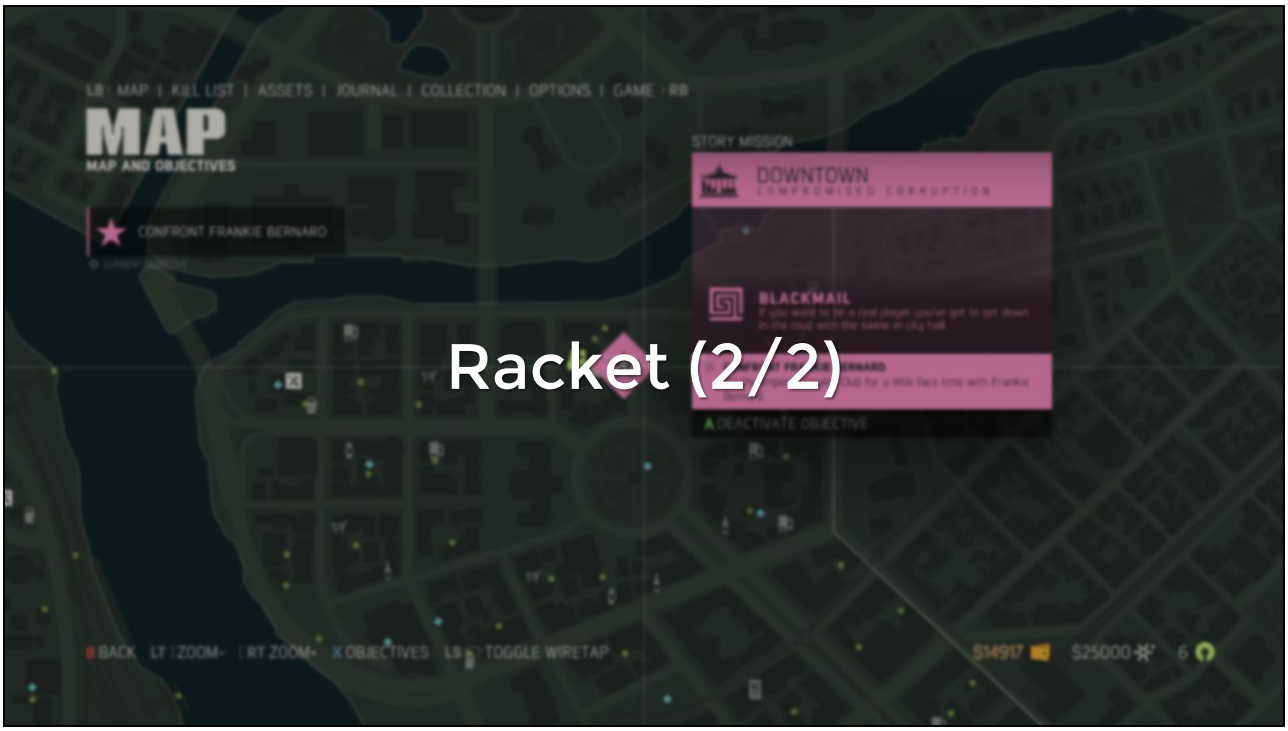
Racket (1/2)

First, you go after individual rackets ran by the mob. For example, the Construction racket in the Downtown district.

After you've conquered a Racket, you have to call one of your Underbosses. They will each give you unique rewards.

After the call, men from the faction you have chosen populate the racket, which becomes a friendly location. For example, the Haitian faction ran by Cassandra.

Note that this faction change is temporary – the Underboss agrees to help you in the short term, but a racket is fully under the control of a character only if the whole district was conquered and assigned to them. We'll come to that shortly.



There are two rackets per district. You conquer the second racket in Downtown, the Blackmail racket.

And after the second racket is conquered, again you have to call one Underboss.

You can choose to assign the second racket in the district to the same Underboss, although the rewards offered are less interesting if you do, or to choose another Underboss.

Conquering both rackets of a district unlocks a unique mission, in which you can take out the district boss who reports directly to Sal Marcano, the mafia boss in New Bordeaux.

Just after this mission, a complex dialogue sequence called ‘Sit Down’ is triggered to permanently assign the district. All characters will try to convince you to give them the new territory, and they will have a reaction based on who you choose.

Sit Down

1. Both rackets secured by one Underboss
2. District is 'split' between two

- Racket assigned = temporary, 'promise'
- District assigned = permanent decision

There are two possibilities coming in a Sit Down:

- First: both rackets were secured by the same character
- Or you have split the district between two Underbosses, who each secured one racket

- The racket assignment – through the telephone call – is a sort of 'promise' that you do to the character.
- When you choose an Underboss to run a District, the decision is final: all the rackets in the district are re-assigned based on your decision.

Sit Down

Example:

- Downtown conquered, first district
- Vito holds one racket
- Cassandra holds the other

I'm going to show you in game what a Sit Down looks like.

In the situation you're going to see:

- You have conquered Downtown and it's the first district you have taken down
- Downtown is split between two characters: you called Vito to hold the first racket;
- And you called Cassandra for the second one

Pay attention to what they say.

(video #01, showing the introduction of a Sit Down with Lincoln, Burke, Cassandra and Vito talking)

Because both Cassandra and Vito hold one racket, they each expect the district to be theirs. Burke, on the other hand, is less aggressive about it.

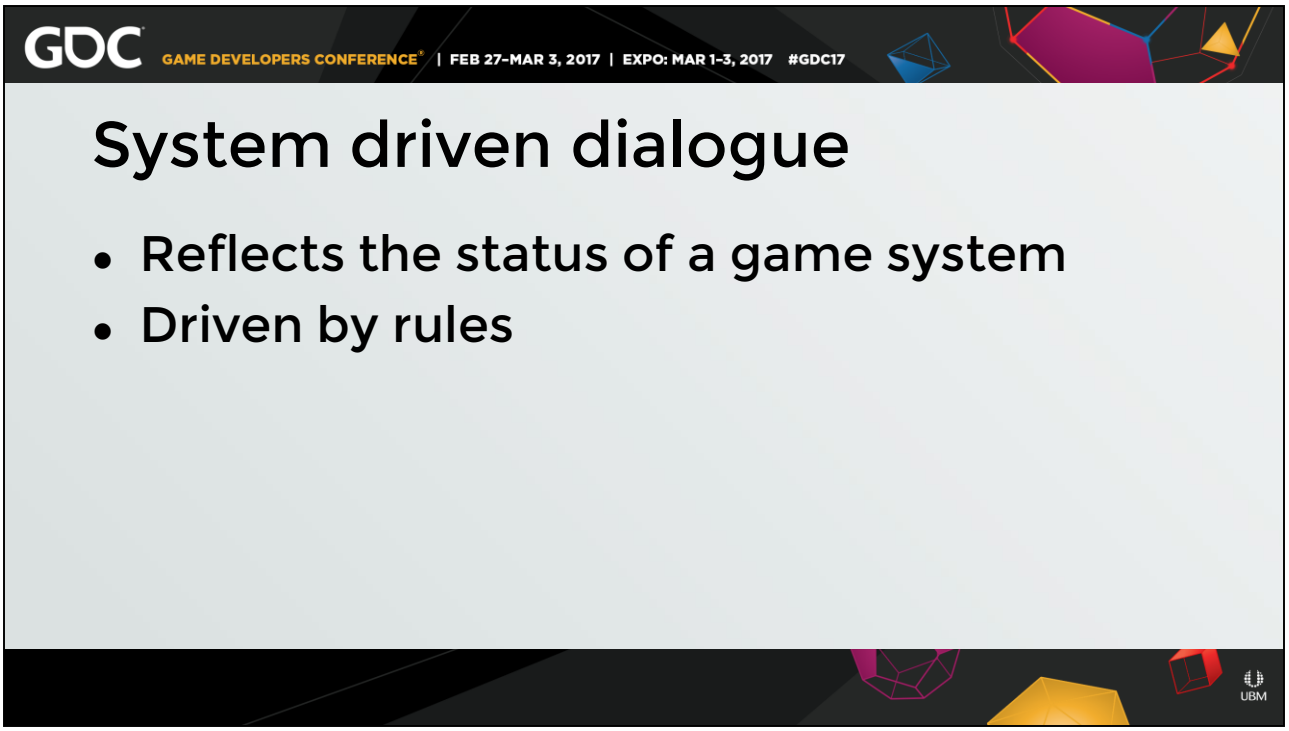
Here, the decision is still completely open for the Player – you can still choose any of the Underbosses.

Talk

- Loyalty system
- Dialogue design

So today I'm going to talk specifically about two main components of the system driven dialogue work that we have performed on Mafia III.

- First, the Loyalty system: before the dialogue experience we built a relationship system first, based on territory division.
- I'm also going to talk about dialogue design, and specifically how we built a library of dialogues that would reflect the Loyalty system in a meaningful way



Before we begin, a small definition of system driven dialogue:

- For me, system driven dialogues reflect the rules and status of a game system, conveying expectations, relationships, consequences, and history;
- All that being driven by of a set of rules, states, modifiers, possible interactions, and choices.

System driven dialogue

- Examples:
  - Civilization
  - Football Manager
  - The Sims
- Usually low scope and text only
- MAFIA III: extensive library

Some examples that use system driven dialogue:

- Civilization games, with varying relationships and evolving dialogue with each AI rival;
- The Football Manager series where you have to talk, motivate and negotiate contracts with your players;
- And The Sims, even though they use an abstract language to convey moods and emotions

- In games, usually, these types of dialogue are only reflected by a limited amount of lines, sometimes with voiceover, but usually only with text.
- In Mafia III we've built a big library of voiceover dialogues driven by a complex set of rules – Sit Downs is our attempt to explore emotional and gameplay depth in system driven dialogues.

Before we start, a small disclaimer here: I won't present you the development timeline and decisions exactly how they happened – but rather a version easier to digest. The reality is a bit more granular than what I present.

I know I have some colleagues in the audience; please don't call me a liar!

- My initial mission was to design the relationship system that would drive the logic behind all the choices and their consequences on the characters and the game structure.

Loyalty system: constraints

- 3 'Underbosses'
- 6 'open' districts
- 2 rackets per district, 12 in total

I knew few things starting working on the Loyalty system:

- There are three 'underbosses' to choose to assign territory
- There are six 'open' districts to assign in total
- Two rackets to assign per district, so twelve in total

Loyalty system: constraints

- District decision beats racket decision
- Up to 2 Underbosses can leave
- Side activities matter
- Final Loyalty score = different endings

- Rackets are assigned temporarily in the telephone call; the final decision for the district in Sit Downs sequences takes priority.
- Based on the choices performed, up to two Underbosses can decide to leave the crime operation, only leaving you with one Underboss at the end of the game.
- The player can accomplish side activities for each character to improve the relationship with them.
- The final result of the Loyalty system would influence the multiple endings of the game.

These were my constraints.

Loyalty system: goals

- Real system
- Escalating tension
- Real consequences
- Characters as feedback
- No 'dialogue game'

From these constraints, we set some creative goals for the feature.

- We wanted to design a real system behind these choices, not having anything scripted or forced or cheated onto the player.
- We wanted tension to escalate throughout the game.
- We wanted actual consequences on the game structure and economy; Underbosses being able to drop out of the operation was a good start.
- I wanted dialogue delivery, animation, poses and facial expression as the primary form of the system feedback loop. I didn't want any relationship score, bar, or text to drive the experience: I wanted players to focus on dealing with egos and demanding personalities.

  This was for me one of the most challenging goal.
- We wanted no "dialogue game", as in interactive dialogue systems: all interactions with Loyalty are based on racket and district assignment, and optionally side activities.

Loyalty system: goals

- Rewards vs. relationships
- Different perks per Underboss

Keeping everybody happy would mean doing some compromises in term of the short terms rewards that you would be getting.

- Each character would also offer a different set of perks, appealing to different kinds of players.

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier

That was the player facing goals. I had also defined goals for the Underbosses themselves; after all, I was designing a simple AI system, so I needed a direction to define the basic concepts that would drive their persona.

- I needed to define AI concepts and their initial modifiers

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier
Greed		

The first concept is greed

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier
Greed	Racket Assigned	+

Underbosses get some points for gaining a racket;

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier
Greed	Racket Assigned	+
	District Assigned	+

They get some points for gaining a district

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier
Greed	Racket Assigned	+
	District Assigned	+
	Racket Lost	--

And they lose points for losing a racket.

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier
Greed	Racket Assigned	+
	District Assigned	+
	Racket Lost	--
Impatience		

The second concept is Impatience.

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier
Greed	Racket Assigned	+
	District Assigned	+
	Racket Lost	--
Impatience	District Not Assigned	--

Underbosses dislike being ignored – when they are not chosen for a district, they lose points.

Loyalty system: AI concepts

- More points to lose than to gain
- Beaten by cautious choices and activities
- No omniscience

Since there are three characters, for each district to assign there are more points to lose than to gain, and with this simple initial balance, escalating tension throughout the game was achieved.

- This can be overcome by making cautious racket and district choices, and doing side activities for each character.
- And finally, characters didn't need to be aware of more things than what they're exposed to. If I call an Underboss to secure a racket, that won't make the other characters upset – they don't even know they haven't been called.

These AI concepts are simple, and natural – I don't need a lot of explanation done in game for the player to understand the rules.

Loyalty: states

Base states:

- Modifier driven
  - Content
  - Neutral
  - Angry

I knew my modifiers, now I needed to define the different states influenced by these modifiers.

- I started with the base states which are purely modifier driven – imagine a zero-to-hundred scale.
  - Content, Neutral and Angry

These would be the states of the characters for a majority of the time. Underbosses start neutral.

Loyalty: states

Override states:

- Influenced by modifiers, custom rules
  - Ultimatum
  - War
  - Dead

Then we have what we call "override states".

- They are influenced by modifiers but can ignore the usual logic by having specific rules:
- The first override state is Ultimatum, triggered as a sort of "last chance" to make things right with the character – it was introduced to make sure that the tension escalation would not feel too extreme. Only one character can reach the Ultimatum state throughout the whole game.
- When things are really bad with a character, the War state is triggered

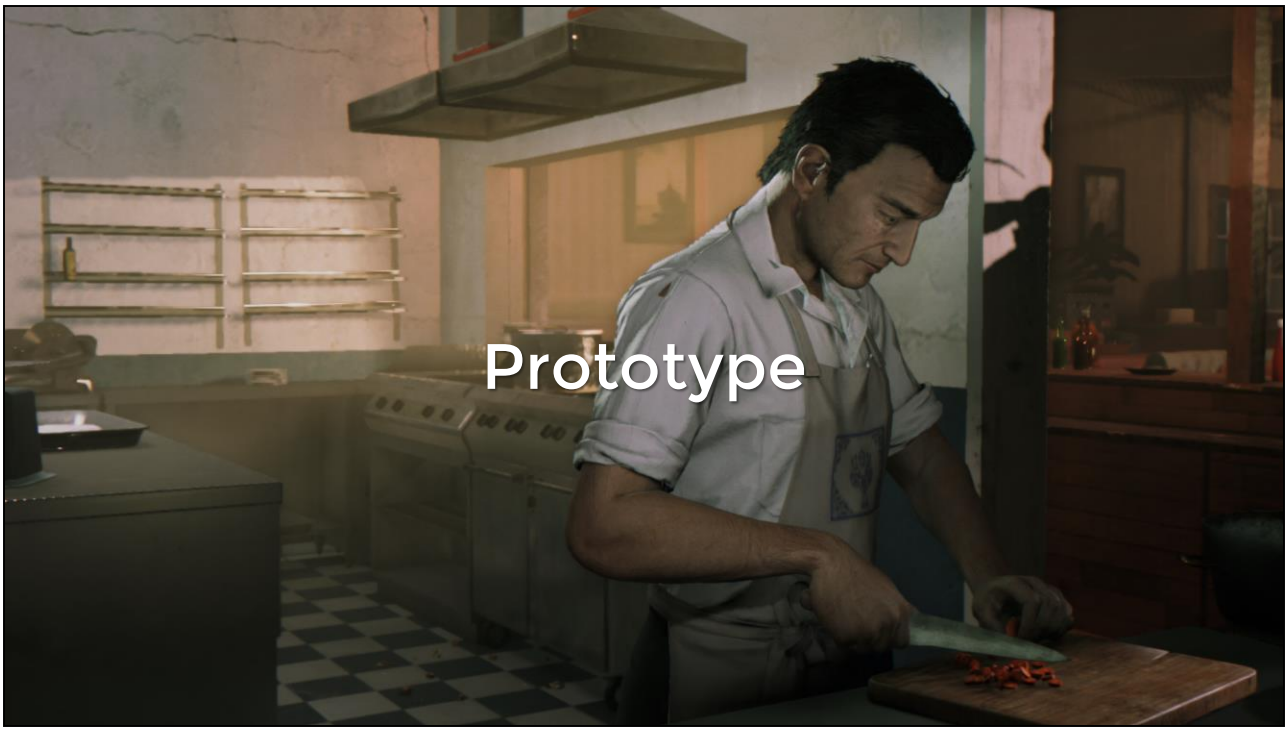
  The Underboss quits the operation and sends hit squads against you; all the faction characters who secured rackets in the city attack you on sight.

  Here, there's no turning back. Characters at War unlock a unique mission which enables you to kill them.

Once you've killed an Underboss, they are…

- Dead! Their associate takes over the operation; the situation returns to a status quo, although some economical penalties are applied and the perks are frozen for that

faction.



With the Loyalty system defined, we needed a prototype.

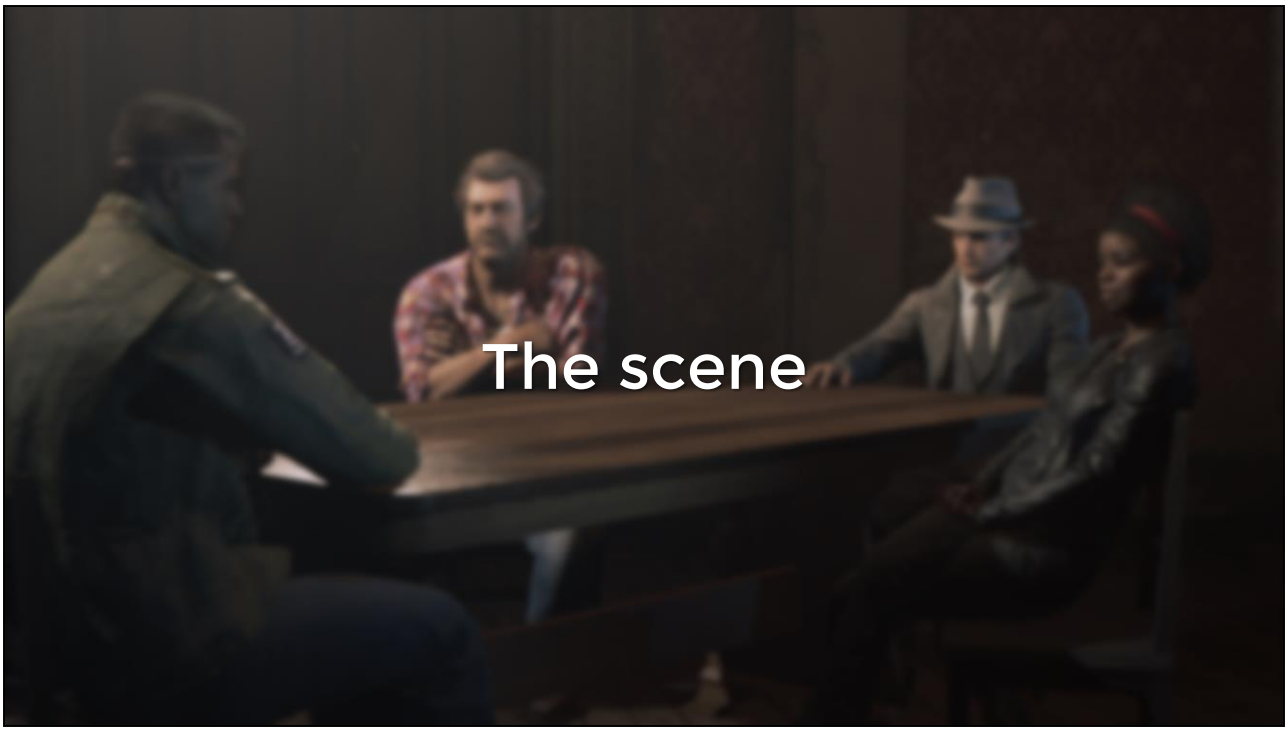
Prototype

- Real structure
- Choices
- Consequences
- Balancing
- Twine

- We included Mafia III real open structure – you're not forced to complete a district you started playing, so the game can be finished in numerous ways.
- We included all hideout and racket assignment choices,
- Their consequences on the states of the Underbosses, and how they would be reflected in the dialogue
- And some balancing capability, including the completion of side activities for bonus Loyalty points
- We used Twine for the prototype– it was great because of its ease of use.

Now we needed to collaborate with the writing team to define the vision for the scene itself; where and how it takes place.

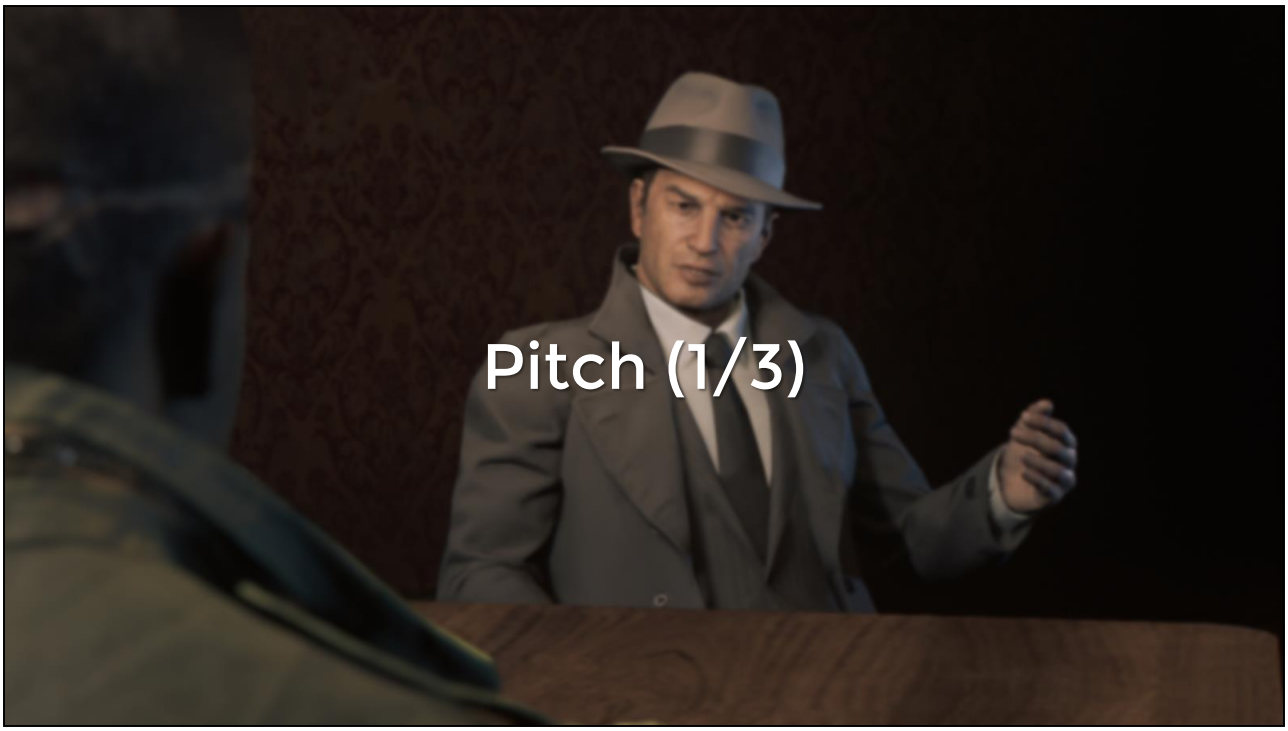
- We selected an old abandoned mansion in the bayou that you can see on this concept art.



Then, we needed to define how the scene would take place. We had a prototype with design text but… what is it going actually look like in the final game?

First, Lincoln walks in and is greeted by one of the Underboss.

Lincoln makes an introduction, announcing the district at stake or any other big announcement.



Then each character makes a Pitch, back-to-back, trying to convince the Player to give them district.

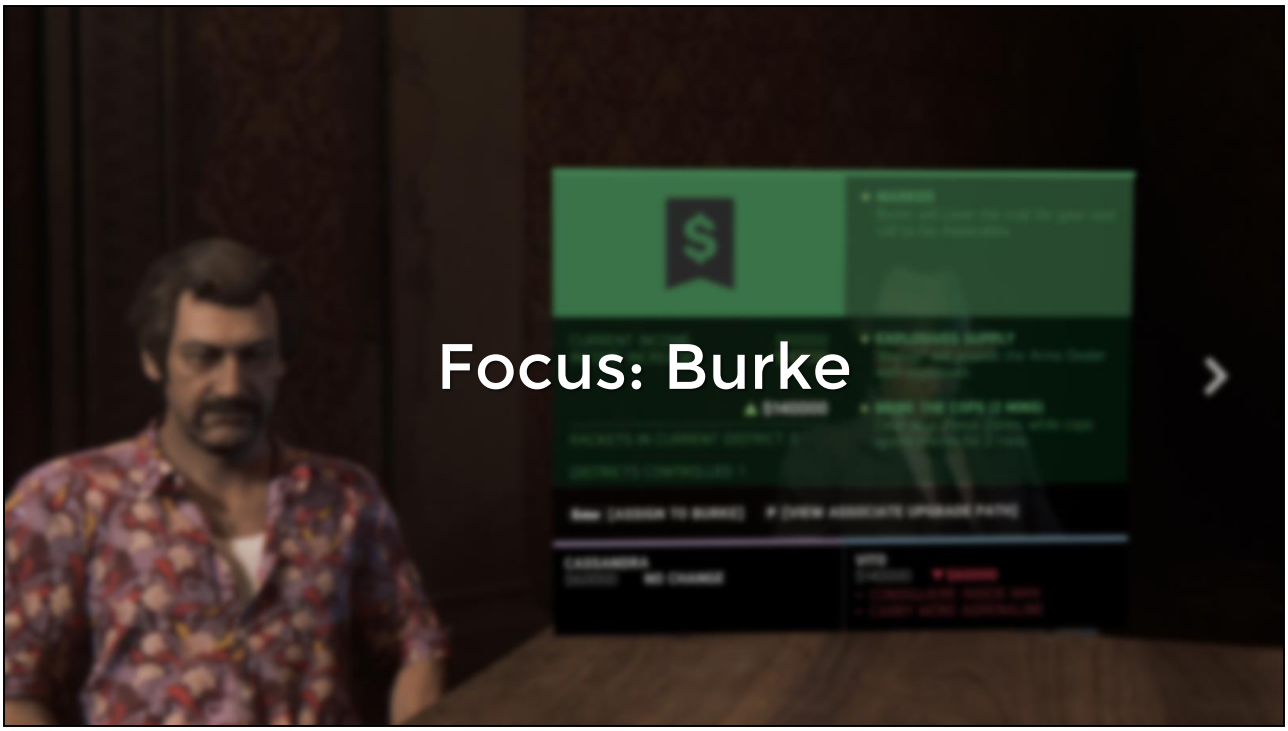
So first character.

Second.

And third.

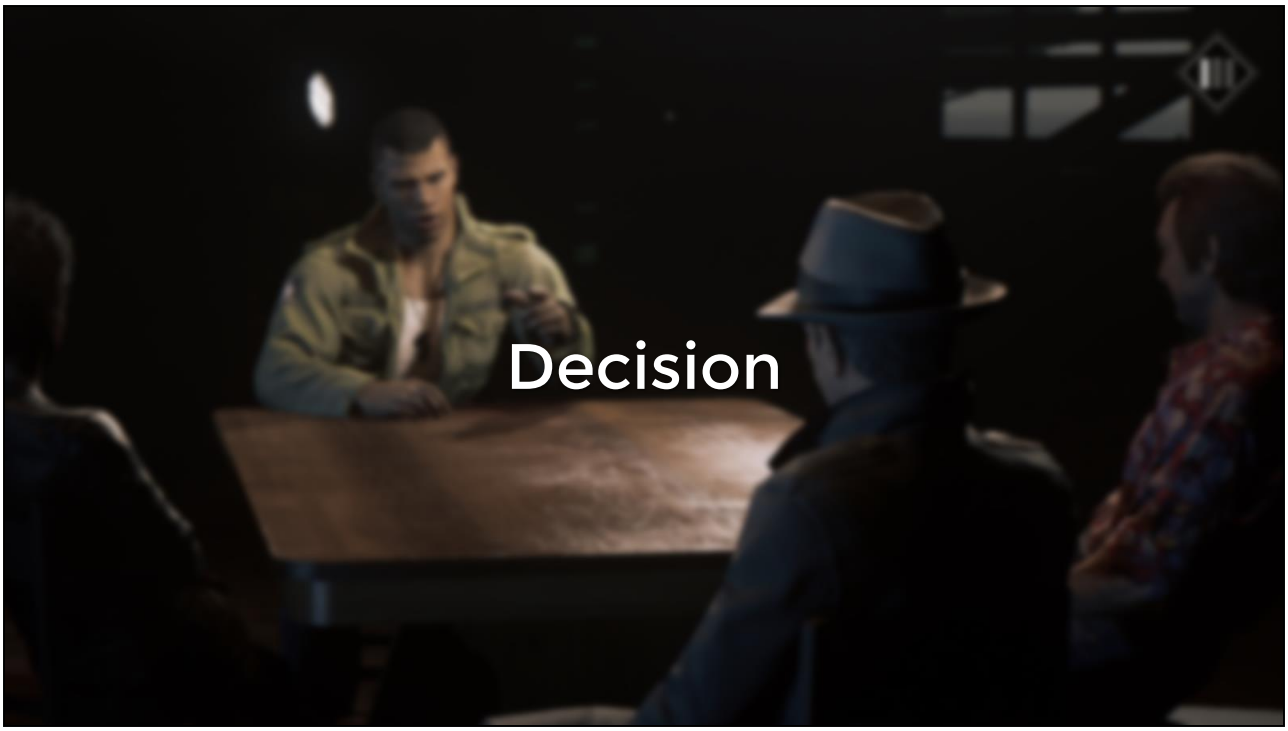
Then it’s time for the choice. The player can see the rewards and penalties for each character, and they say something each time you highlight them.

Here, focus on Vito and his rewards.

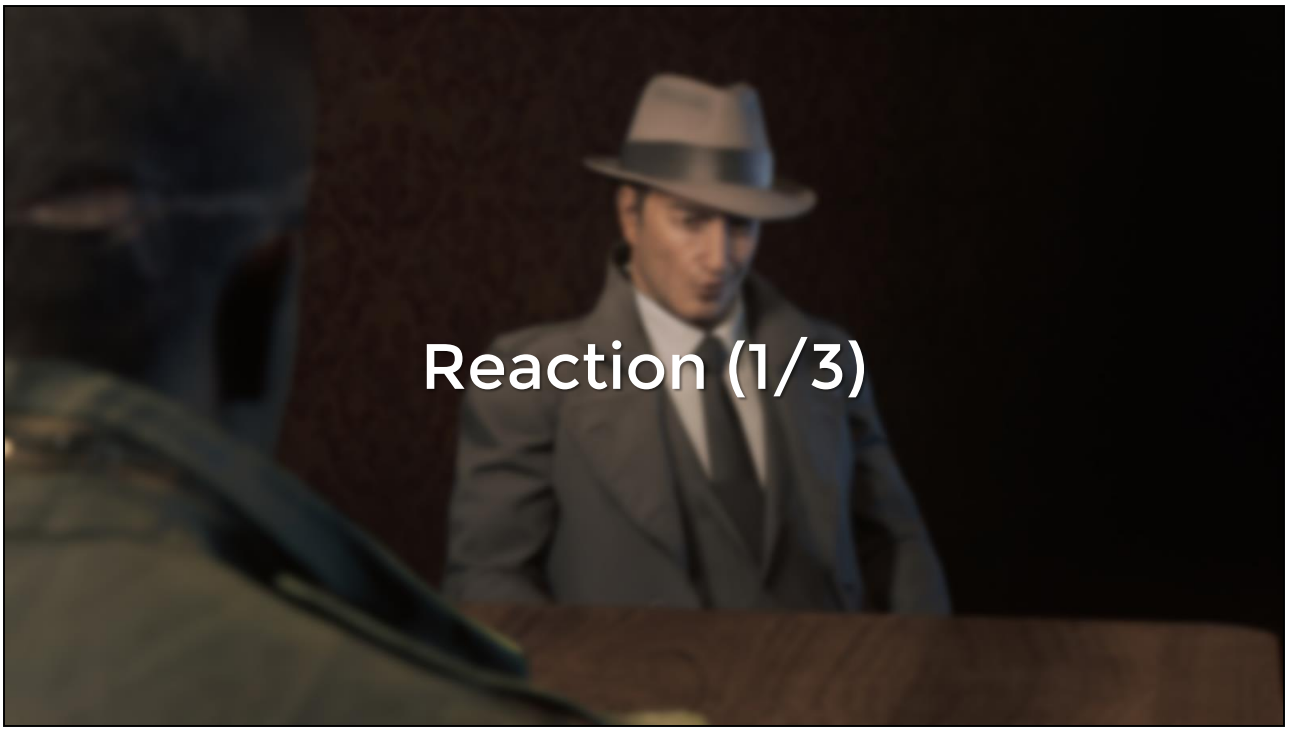


Burke.

And Cassandra.

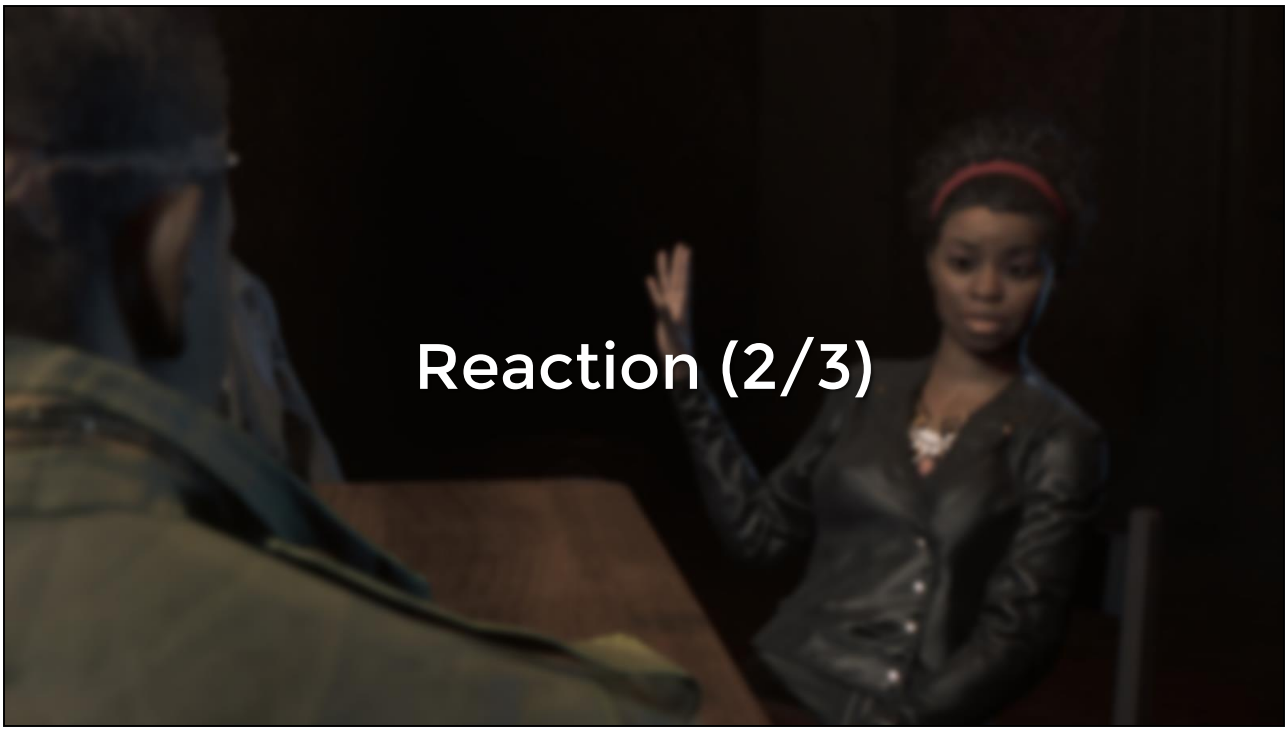


After you've selected a character to run the district, Lincoln announces the Decision.

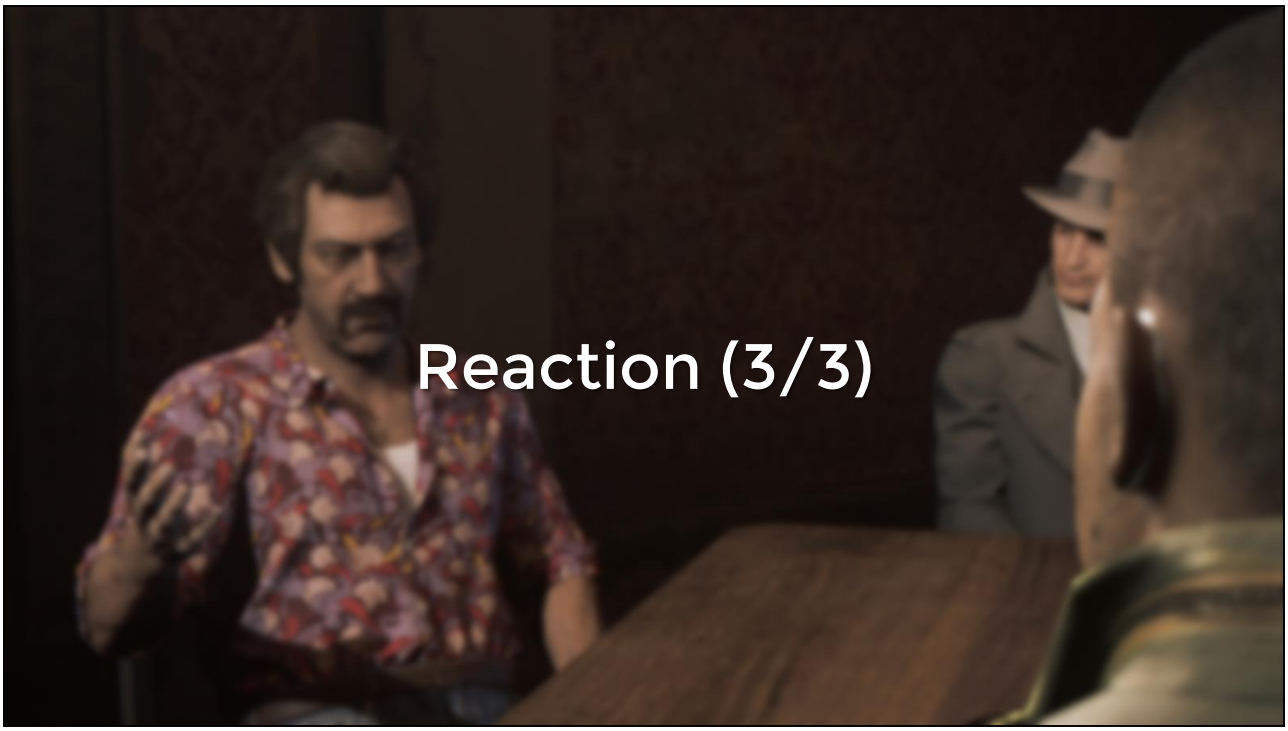


Each character reacts, back-to-back.

So, first reaction.

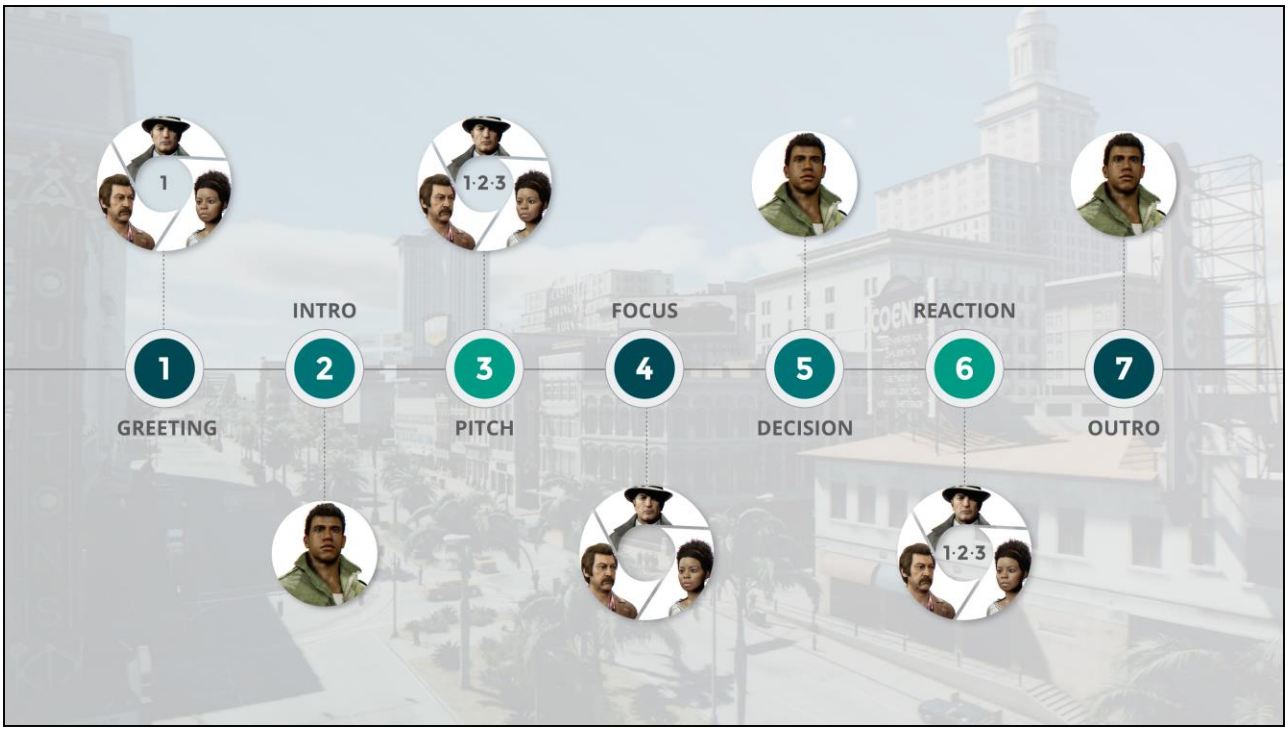


Second.



And third reaction.

And finally, Lincoln sends everyone home.



As a recap, you can see the skeleton of a Sit Down.

Sometimes we break these rules when we have big, special moments, like a character going to an Ultimatum or War state, but this is how it works for the majority of Sit Downs.

Now we needed to define how we would approach the dialogue scoping.

In the prototype, we had design text with variables and conditions within the text, for example, “I have two rackets and I am content.”
But I didn’t know how these variables would translate when we would scope the actual dialogue lines.

Initial dialogue scoping

- Loyalty state
- Nb of rackets secured in district
- State transitions

So, through the dialogues, we needed to convey three pieces of information – it was important for the dialogue to first serve the system:

- Dialogues needed to convey the Loyalty state of the Underboss
- How many rackets they secured in the district
- And state transitions; positive and negative state changes in the system

Initial dialogue scoping

- Variable audio design?

- There are interesting examples of actual variable audio design in sports commentaries, with announcers talking about game scores and statistics in a smooth and natural way. But that's very hard to produce well. And here, we were creating a narrative and emotional experience – not talking about stats.

Initial dialogue scoping

- ~~Variable audio design?~~
- 1 dialogue = 1 set of game conditions
- Define a broad dialogue library
- Think in assets, not branches

- So the resolution was clear: we would define individual dialogue assets which would reflect the combination of the Loyalty state, number of rackets held and any other condition that the Underboss would react on; then it would be all about the writing and performance. We would need a lot of individual assets to support the system, but I believed it was the right direction.
- We would also have to define a broad dialogue library that could survive design iterations and create variety.
- Because we would have such a big amount of lines, thinking in branches would be unmanageable. When I talk about branches, think interactive dialogue systems like Mass Effect or The Walking Dead. In these games, the dialogue structure branches out and in depending on choices performed. Here, we would approach the dialogue design with a database mindset, rather than branches.

Initial dialogue scoping

- Smooth transitions for all permutations
- Only one character at a time
- Use talking positions for branches
  - First, Second or Third to talk in sequence

In addition to the Loyalty state and number of rackets secured, we set additional direction for the dialogue scoping.

- The first direction is that all transitions must sound smooth when played back to back – and there are many possible permutations.
- All Underbosses would only talk individually – there's no group talk.
- We would use talking positions for 'branches'. For Pitches and Reactions, whether a character talks first, second or third can influence the dialogue line and enable them to bounce off of each other. Branching dialogue has a set of advantages in the writing – it definitely feels more natural – so I wanted to use this when we could reasonably do so.

After the initial writing pass and dialogue scoping, we implemented the dialogues in the Twine prototype to see how it felt.

We’re going to see how the numbers of hideouts and the Loyalty state are conveyed through dialogue.

(video #02 showing Vito’s dialogues in Content, Neutral and Angry state with 2, 1 or 0 rackets owned)

You can see that we can convey a lot through writing, dialogue delivery, animation and poses.

Early results

- Added Character
- System design was intact
- Lack of emotional response over time
- Characters felt robotic
- Update: broaden scope, aim for quality

- That writing pass gave a lot of character to the system through the personalities of Burke, Cassandra and Vito now that their style showed.
- The dialogues were serving the system design really well – there was no information loss from the design text
- However, we felt the dialogues were too simplistic to create an emotional response from the player past the first couple of Sit-Downs.
- Characters felt robotic; although their Loyalty state could evolve, they felt stupid and unresponsive
- At this point, we needed to define an update. I was told something I actually loved to hear, as a game designer. It was something like "Define as many dialogues as you want. If you need 500 lines of dialogues per character to make your system compelling, just do it. Aim for quality." Luckily, there was no producer in the room; I could follow that advice blindly.

Extended dialogue scope

- Add complexity to the system?

So the new goal was quality. I had to create a set of more interesting dialogues for the Underbosses to say, on top of the library we had already defined.

- I wondered about complexifying the system to produce different results; after all, the Loyalty system is an AI system and having just one global state (Content, Neutral, Angry) to reflect a person's emotions is very simplistic; it was no wonder why my characters failed to create an emotional response.

Extended dialogue scope

- ~~Add complexity to the system?~~
- Be in control: keep things simple
- System felt right
- Decision: keep the system
- Decision: build on perception

But I kept ditching more complex solutions. First reason is that I can't really think about complex systems. I like keeping things in control, and in control means simple.

- I was actually happy with the outcomes of my system: if I looked at the numbers, the pacing, the structure, the consequences, the tension escalation, the system felt right.
- My resolution then was to keep the Loyalty system as it was: one state per character, with the set of states I had available.
- And then build on the player's perception to create agency through an additional set of statistics, for the Underbosses to better react to choices and appear smarter than what they really are.

Extended dialogue scope

- First or Last District
- Greed
- Impatience
- Jealousy
- Cockiness

I started brainstorming about interesting statistics the Underbosses could react on:

- I wanted to make the first and last Sit Down feel unique – the lines you've heard in the first video are specific to the first Sit Down.
- I wanted to explore that notion of Greed again, and for the Underbosses to react and remember when rackets were taken away from them.
- I also went back to the concept of Impatience. Characters would complain that they have no district yet and how many Sit Downs they spent without a district assigned.

I also wanted to explore concepts which were not reflected by the game system, but which I found interesting.

- Jealousy, for example. Underbosses would complain about one of their rival being chosen for a district and if they were the least powerful Underboss in the city.
- I wanted to explore Cockiness: characters would mention if they've gotten the last district and if they are the most powerful Underboss in the city.

And this doesn’t even cover everything that we put in the system; there are lots of different reactions we defined based on cool and interesting events and statistics to react on.

Extended dialogue scope

- Example:
  - Pitches from Vito
  - Neutral
  - 1 Racket
  - Additional statistic

I'm going to show you examples of what the extended dialogue scope brought to the system.

- We're going to see different Pitches from Vito
- For these dialogues Vito is Neutral
- Vito holds one Racket in the district
- And Vito reacts on an Additional statistic of the game.

Pay attention to each dialogue, and try to guess what the statistic is each time.

(video #03, showing the range of dialogues Vito can say on Neutral/1 Racket owner conditions, and what the extended dialogue scope brought to the system)

There are actually even more dialogues that Vito could have said.

Extended dialogue scope

- ~850 dialogue lines in total
  - ~250 per Underboss, ~100 for Lincoln
  - One Sit Down: ~20 dialogues (2-3% used)
  - One playthrough: ~120 dialogues (~15% used)
- Satisfying results
- Simple system but perceived depth

In total, we have about 850 dialogue lines allowed by the system, all characters included;

- There are about 250 dialogues per Underboss, and about 100 for Lincoln.
- In one Sit Down, only about 20 are selected – if you do the math, only between 2 and 3 percent of the database is used per Sit Down.
- And with six Sit Downs in the game, the player is only going to see about fifteen percent of the whole database. We really tried to reflect the Player's unique playthrough.
- The results we were getting from the extended dialogue scope were very satisfying – characters felt responsive, more alive and smarter.
- Behind the scenes the system design was still dead simple; but what the characters would say was perceived as a deep and complex system.

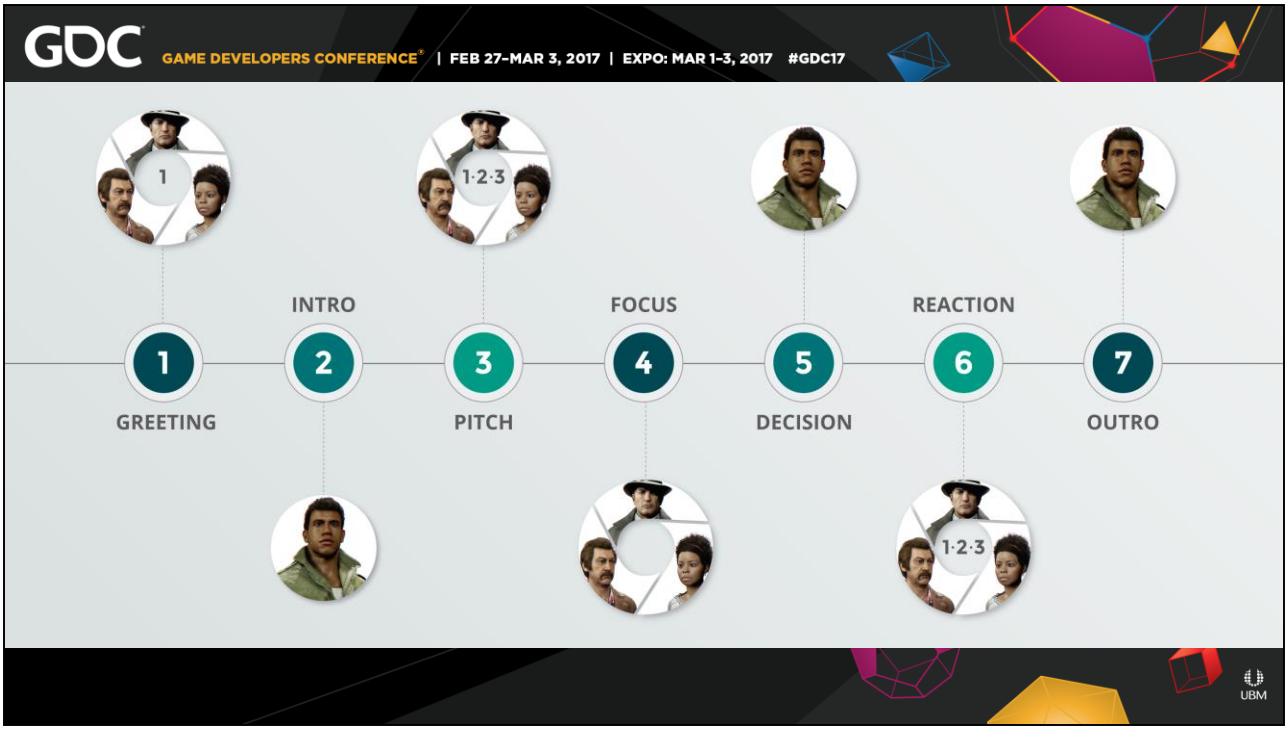
At this point, we had the extended assets ready and needed to accomplish one more step before the actual implementation of the full scene: define the rules of the dialogue flow.

Defining dialogue flow rules

- Twine irrelevant
- Examples were needed

Because of the extended dialogue scope, we couldn't use Twine anymore – the tool is not ready to handle a big text database.

- But we really needed to see clear examples of different Sit Down sequences with actual writing. I had the assets ready, now it was time to put them together.



If you take the Sit-Down dialogue flow again, you see that there is one character selected for the Greeting. But which character is picked? During the Pitch and Reaction sequences, all characters talk back to back. But in which order? I didn't want to define an arbitrary order – I wanted the dialogue sequence to flow as nicely as possible; and that meant defining rules.

However, here I really had no tool to help me figure out the rules.

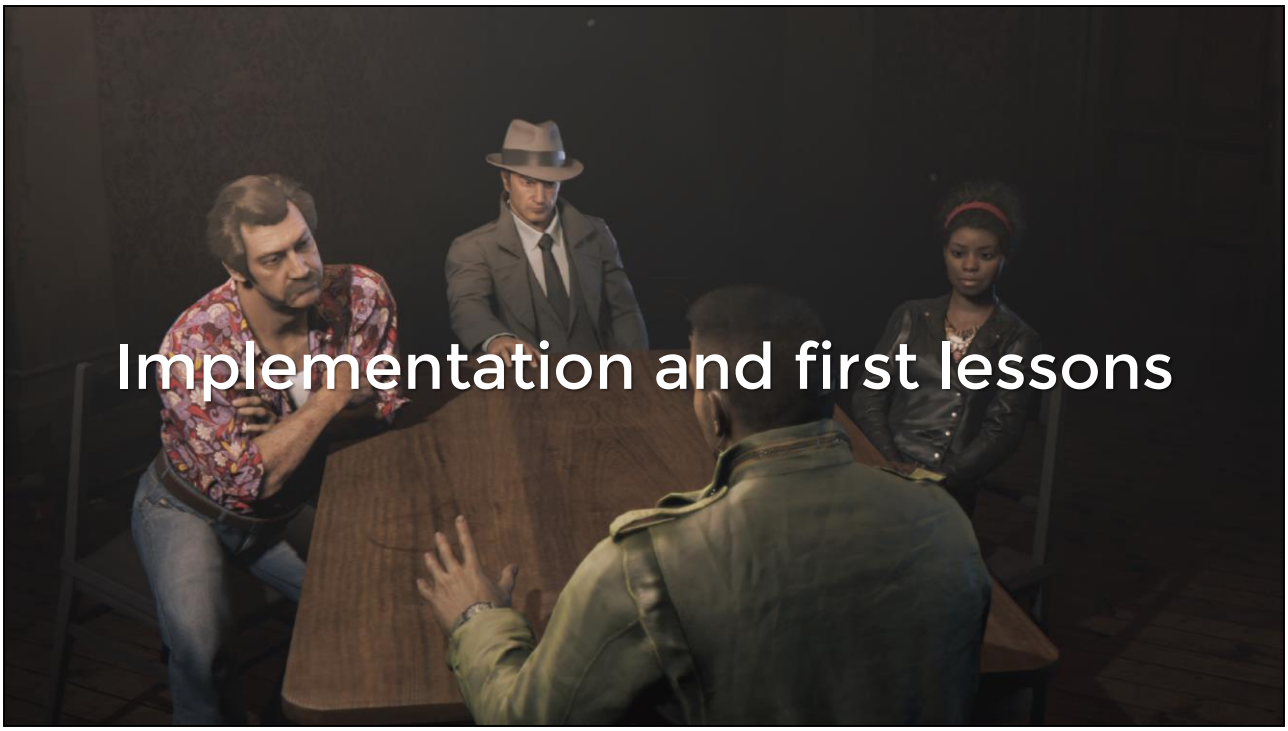
Defining dialogue flow rules

- Random scenarios, curated results

62		Fourth District (French Ward)		
63	Hideout Assignment:	Cassandra 1, Vito 1		
64	District owners:	B2 - C0 - V1		
65	Loyalty states	Burke content, Cassandra ultimatum, Vito borderline		
66		Spoke	Written Line	Condition
67	Greeting	Cassandra	*Good to see you, brother. Been looking forward to this...*	ultimatum
68	Lincoln Intro	Lincoln	*I got two words for you: Drinking and fucking. Uncle Lou had those rackets cornered in the French Ward. Now that corner belongs to us.*	French Ward conquered
69	Zoom Ins	Cassandra	*So you decided to toss a little wrinkle in an already complicated situation. Only calling to secure half this district suggests you may waver in your support of me. But, motherfucker, I certainly hope you don't.*	1H, ultimatum
70		Vito	*Cassandra can do all the foot stomping she wants. But my guys secured half this district and I expect their work to be rewarded.*	1H, cassandra ultimatum
71		Burke	*Jesus, lad. Just give her the district and let's get on with our goddamn lives.*	0H, cassandra ultimatum
72	District Assignment decision:	Vito		
73	Lincoln's Decision	Lincoln	*Gonna need Vito to run this district.*	Vito chosen
74		WAR SEQUENCE: CASSANDRA		
75	Reactions	Cassandra	*Goddammit. You're no different than Sammy, Giorgi or Marcano. Except of course, that you had a real chance to do something good for the hollow. But you've turned your back once again on the people who loved you.*	war
76		CASSANDRA STORMS OUT		
77		Burke	*This is bad, Lincoln. We got too much going on to have a loose cannon like that out there. She needs to be dealt with.*	cassandra got war
78		Vito	*Sorry to say this, pal. Really, I am. But she's gotta be done.*	cassandra got war
79	Lincoln's Wrap-Up	Lincoln	*I know. I'll take care of her. Don't worry. For now, we're done here. I'll circle up with you later on.*	cassandra got war
80		PLAYER KILLS CASSANDRA IN THE OPEN WORLD		

My solution was to define different scenarios – randomly – and then select and structure the dialogue assets like puzzle pieces to create a sequence that felt natural, engaging, and that would best reflect the scenario.

- From my results, and because I generated lot of scenarios, I then analysed the results I produced to be able to extract dialogue flow rules that would drive the sequence as a whole.



Implementation and first lessons

So we were ready for implementation and finally see the results of this work in game.

Let’s go back to our initial example.

If you remember, it’s the first Sit-Down and the district is split between Vito, and Cassandra, who both have one racket secured.

(video #04, showing how a decision affects all Underbosses. In the video, Vito is chosen)

So here in that sequence,

Cassandra lost a racket – she was Content, and transitioned to an 'Angry' state.

Vito was Content, and stayed Content

And Burke stayed Neutral

Implementation and first lessons

- Low requests for additional Loyalty UI
- Underbosses felt ungrateful
- Sit Downs as lose-lose situations

Being able to finally experience Sit Downs in game, we validated some choices and learned few things.

- Some playtesters actually asked for Loyalty meters, but it was such a small portion that I felt it was more related to previous games they played rather than a design flaw. From the dialogues, performance and animation, they were able to figure it out – no need for spoon-feeding here.
- One result became apparent though: the Underbosses flipped states very quickly and in situations which appeared unfair. That wasn't a problem in the prototype, but it was very real confronted with the characters in game.
- As a general feedback, all results of Sit-Downs felt like lose-lose situations where, if the Player chose one Underboss, the other two always got upset.

I had to rethink the Loyalty system.

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS		
Concept	Decision	Modifier
Greed	Racket Assigned	+
	District Assigned	+
	Racket Lost	--
Impatience	District Not Assigned	--

This time, the issue was not only about perception. My game system was perceived as unfair: that was a core issue, not a superficial one like before.

- Because I had defined the Loyalty concepts clearly for the Underbosses, I was able to go back to them: Greed, and Impatience. The Greed part is straightforward. It's logical; everyone can understand it; it’s fair. It's the Impatience part people had problems with and made Underbosses seem annoying and ungrateful.

Loyalty system: AI concepts

LOYALTY CONCEPTS & MODIFIERS			
Concept	Decision	Gap	Modifier
Greed	Racket Assigned		+
	District Assigned		+
	Racket Lost		--
Impatience	District Not Assigned	Gap <= 1	
		Gap > 1	----

So I introduced a new concept of a 'Gap': an Underboss would have a penalty only if he or she has been ignored at least two districts in a row. You can see here on the new table that if the gap is low, there's no penalty applied on a District Not Assigned decision. However, when the gap is high, a very strong penalty is applied.

Loyalty system update: 'Gap'

- First district: no drama
- Focused and contextualised crises
- Escalating tension still applied

The gap concept had few advantages:

- In the first district assignment, no one would get mad unless they lost a racket. Since the first sit down is the first real contact with the Loyalty system, no automatic drama is a good thing.
- It focused crises much more: rather than a constant penalty for not getting a District, Underbosses would stay calm until they had enough -- and then, they would get specific as to why (there's a big difference between "I wanted it and I'm upset", and "It's been twice you've ignored me")
- The system was still able to create escalating tension with a "balanced" playthrough: with three people in the room, I had a guaranteed crisis at the second district assignment: whoever was not picked from the first two decisions.

So before presenting you the result of that design. I’m going to go back to my initial example.

Example

- After first Sit Down:
  - Cassandra got Angry
  - Vito is Content
  - Burke is Neutral

If you remember, after the first Sit Down:

- Cassandra was angry, she lost one racket after the decision
- Vito is Content, he's got the first district
- Burke is Neutral, his state didn't change

Example

- Second district:
  - Cassandra got both rackets + district

Let's fast forward to the second district:

- I felt bad for Cassandra, and I assigned her two rackets and the district to calm her

Example

- Third district:
  - Barclay Mills (Enzo Conti)
  - One Racket to Burke, other to Vito
  - Cassandra is Neutral
  - Burke is Angry
  - Vito is Content

We're going to see the Sit Down for the third district assignment.

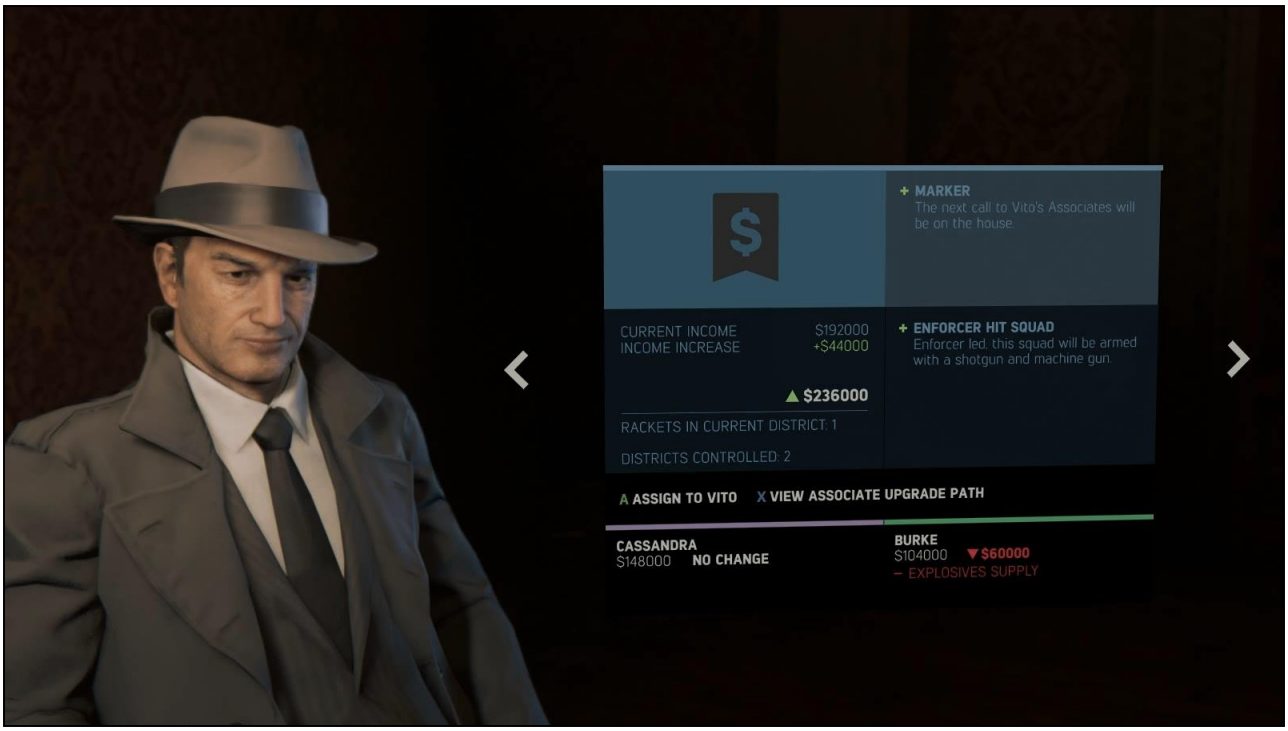
- I conquered a district called Barclay Mills, controlled by a mob boss called Enzo Conti.
- There, I assigned one racket to Burke and the other to Vito.
- Cassandra feels better now I've assigned her territory. But she's not great. She's Neutral.
- Burke is Angry; it's been two Sit Downs and he still hasn't seen any district coming his way. I've been completely ignoring him.
- Vito is Content; he got the first district and didn't lose any racket – no problem here

This is the situation I'm going to present you now – it's really a turning point in the game structure:

(video #05, showing a full Sit Down happening after the third district is conquered; in the video, Burke is chosen)

Here, after choosing Burke, balance was kept. All characters received one district each. They're all Neutral, although their value is much less than the starting one because of the tension escalation.

Now I'm going to show you what happens if you choose another character than Burke.



(video #06, showing the consequences on Burke if Vito is chosen for the district)

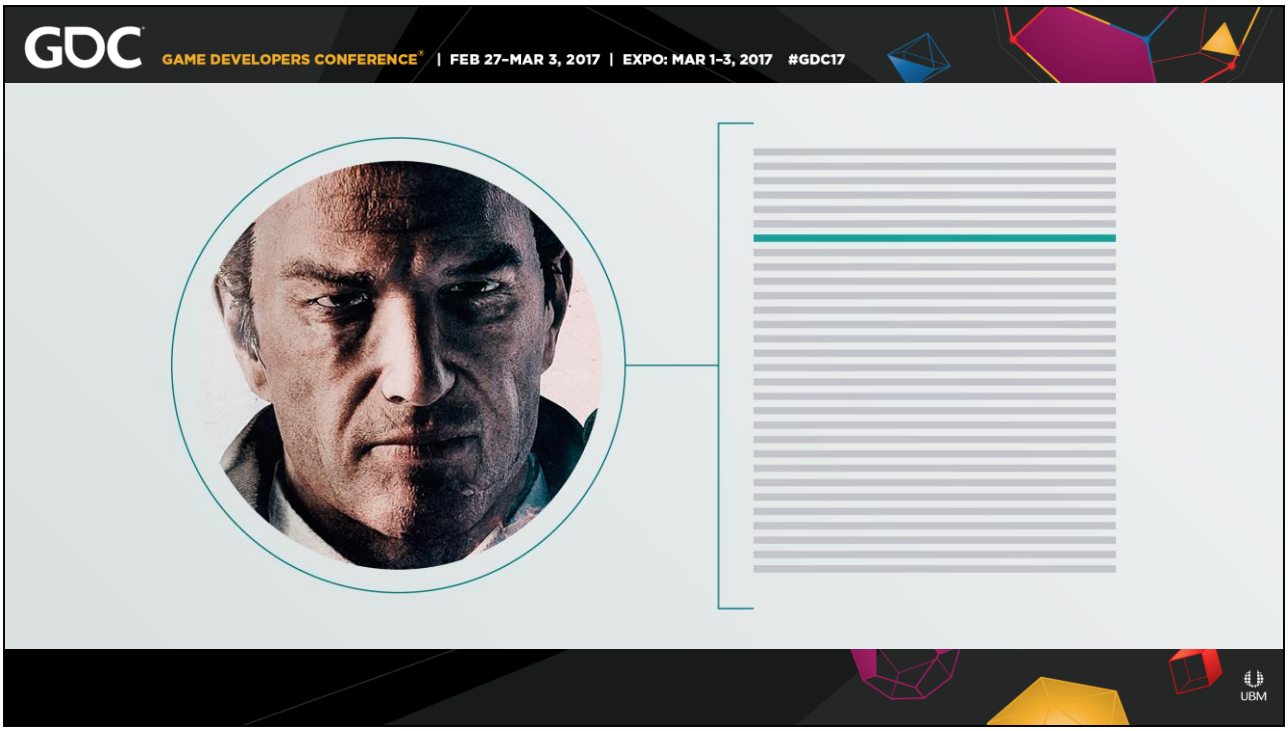
Here, Burke transitioned to an Ultimatum state – even Vito and Cassandra tried to calm him down.

That last line from Lincoln is one of my favourite in the whole game – he actually has unique reactions from characters going Ultimatum depending on how early the Ultimatum state is triggered – this one is the most aggressive.

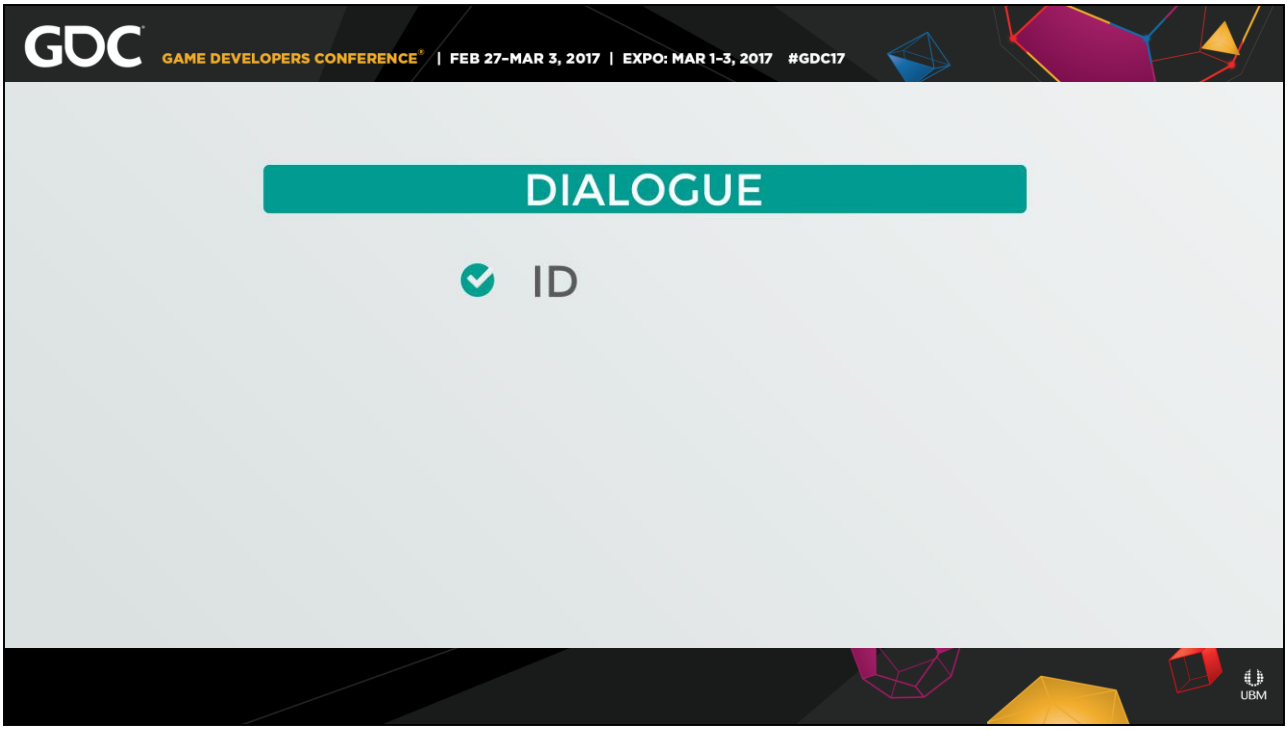
I invite you to play the game and see how your choices impact the Underbosses – the dialogue experience differs tremendously depending on what you do and who you choose.

- So now you've seen the result in game, I want to give you a look behind the scenes as to how we structure, condition and choose dialogue assets in Sit Downs. I'm going to present you my methodology. I'm sure there are many like it, but this one is mine ☺

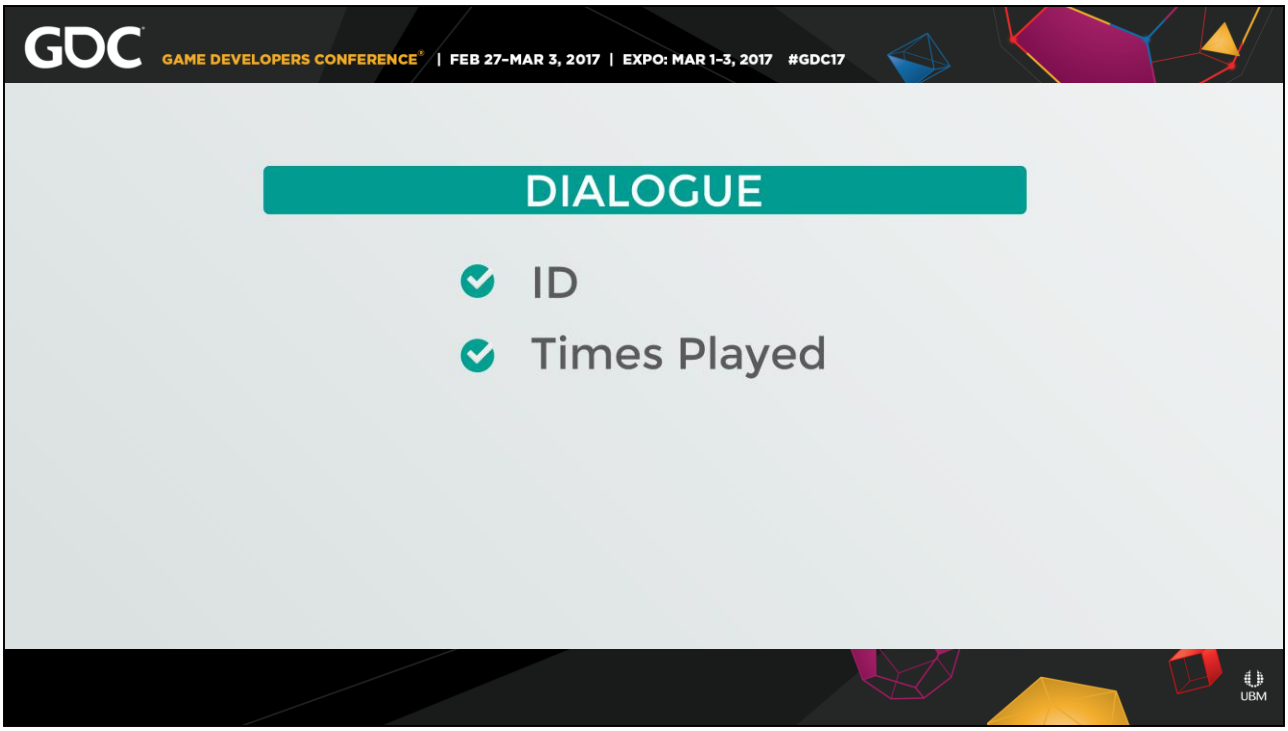
So here, case study on Vito: if you remember, the total amount of dialogues Vito can say in a Sit Down is approximately 250 different lines.



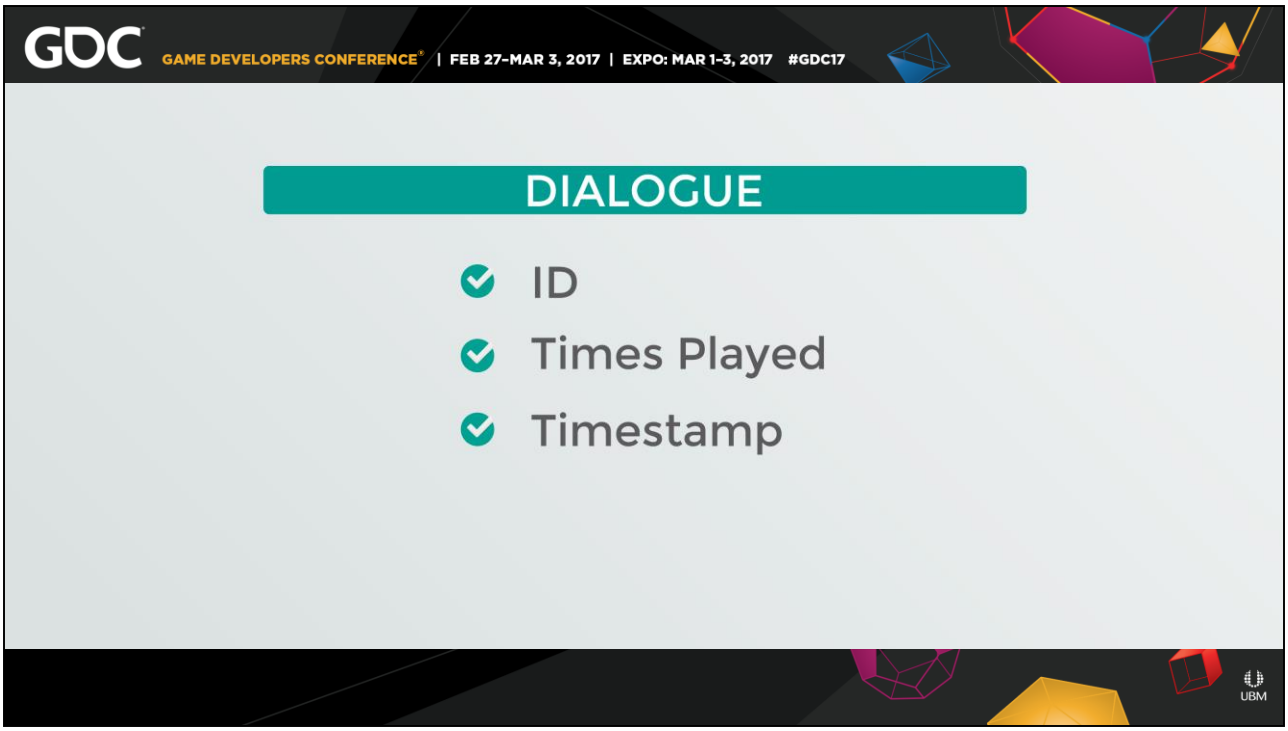
Let’s look at how one dialogue line is defined.



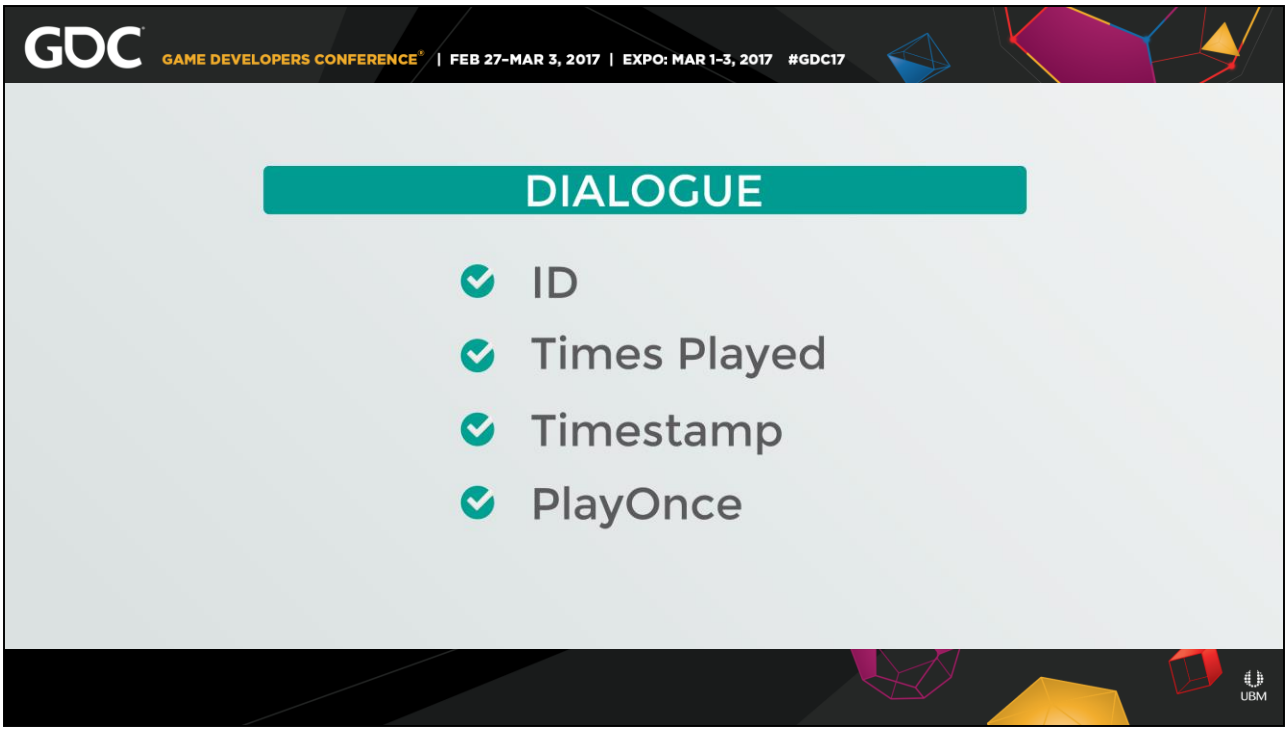
A dialogue is first a unique ID.



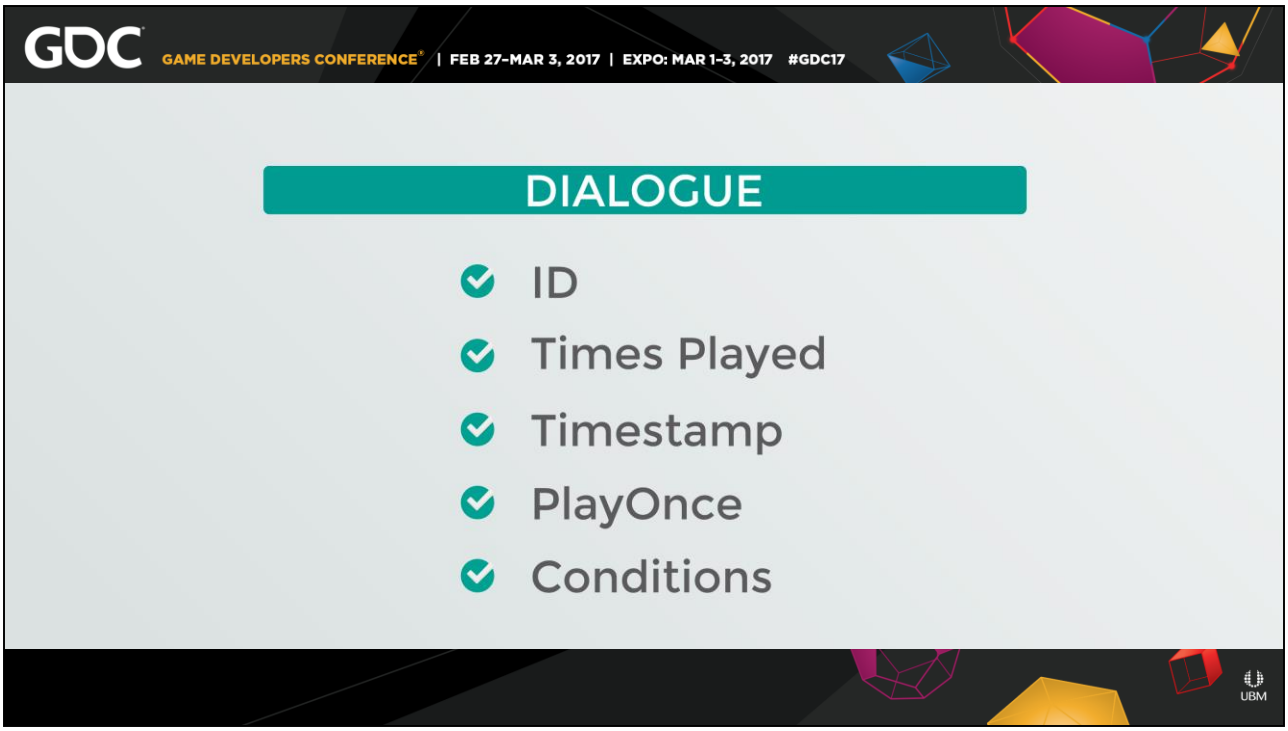
We track how many times in the game it has been played.



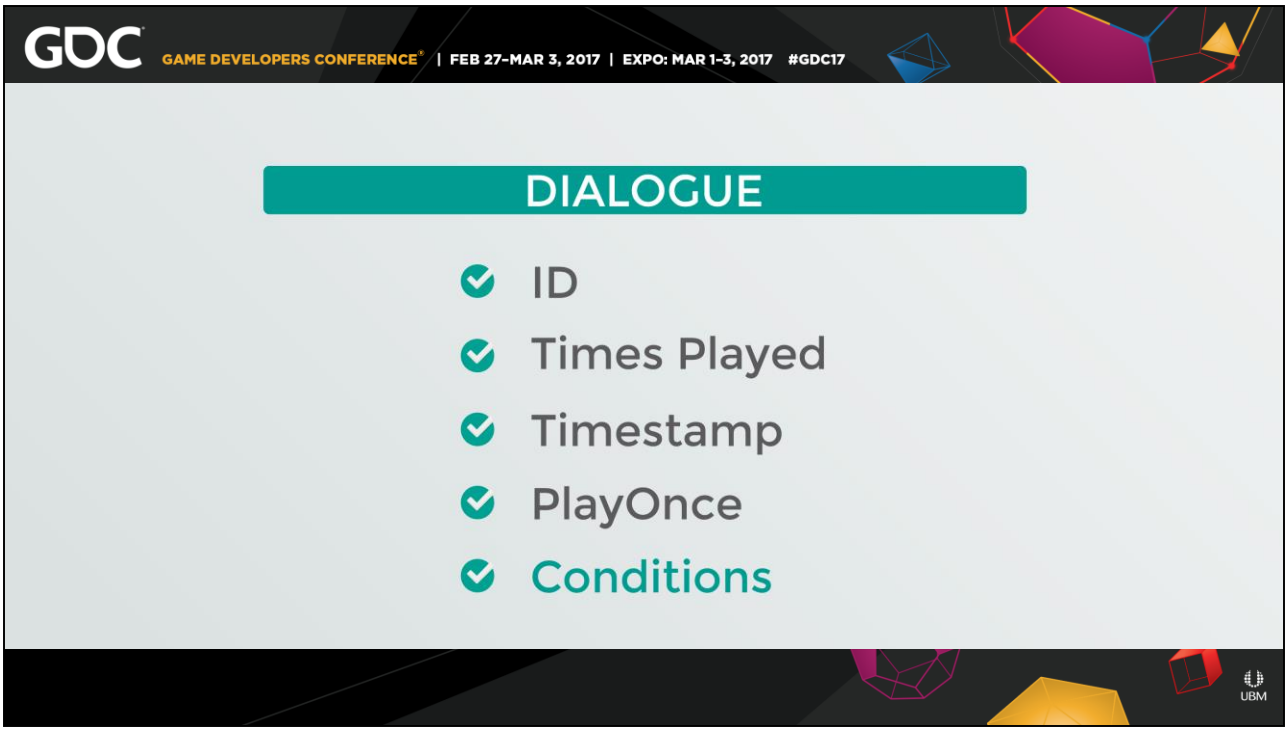
We track when it was played last, through a timestamp.



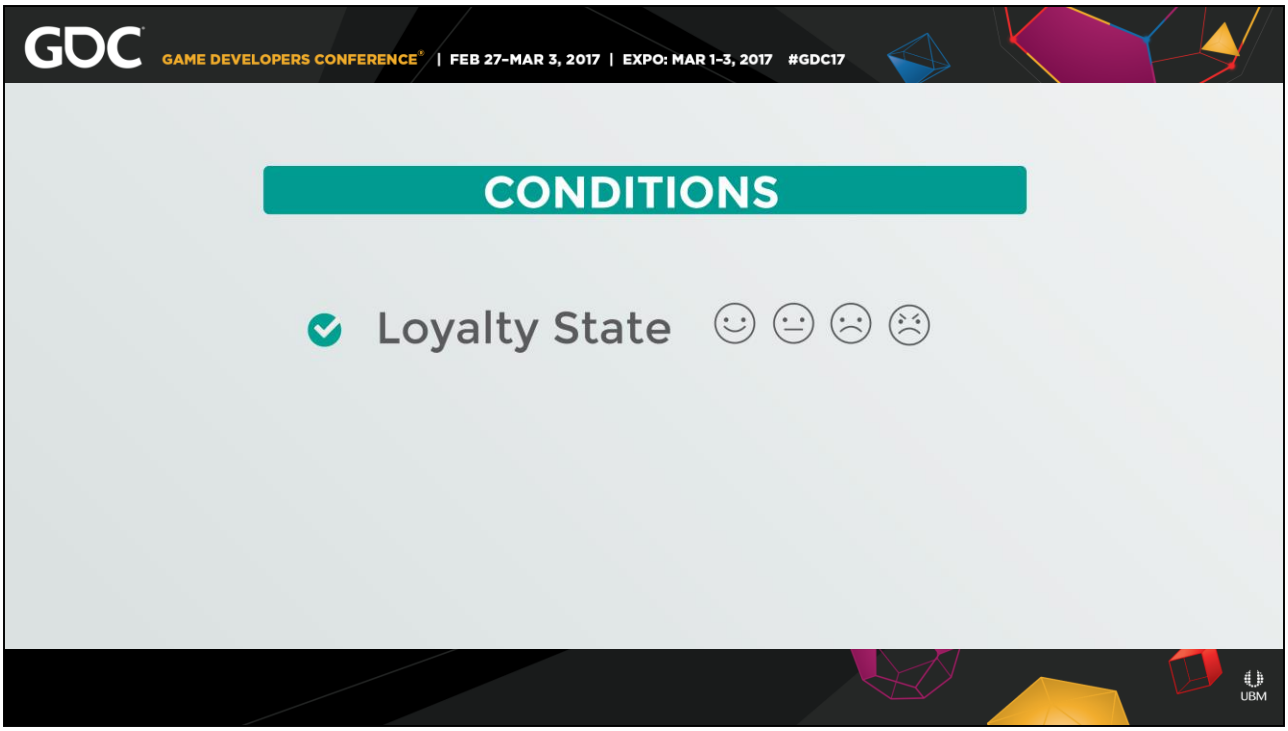
And we can define one option, called PlayOnce, which enables us to discard a dialogue from the database when it was played once in the game.



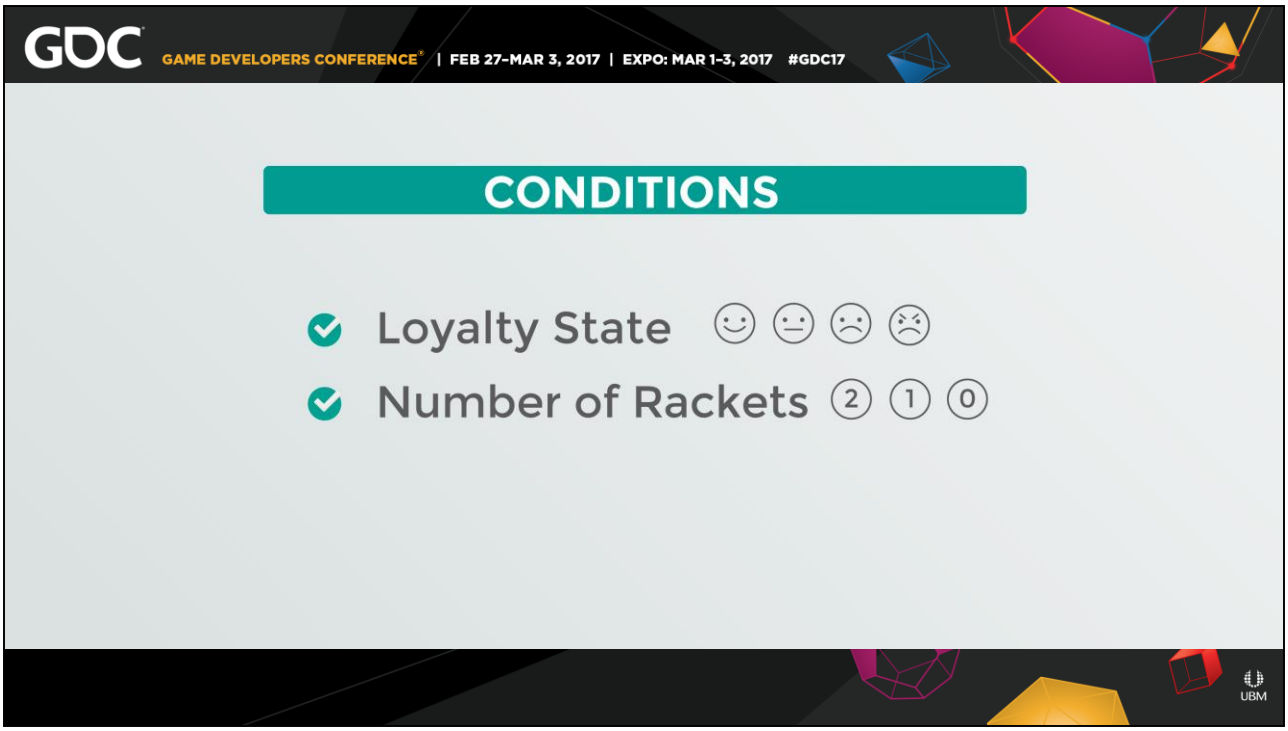
And finally, for each dialogue there is one or more conditions defined. Conditions are logics based on game state variables. When we parse a dialogue, all linked conditions have to be true for it to be available.



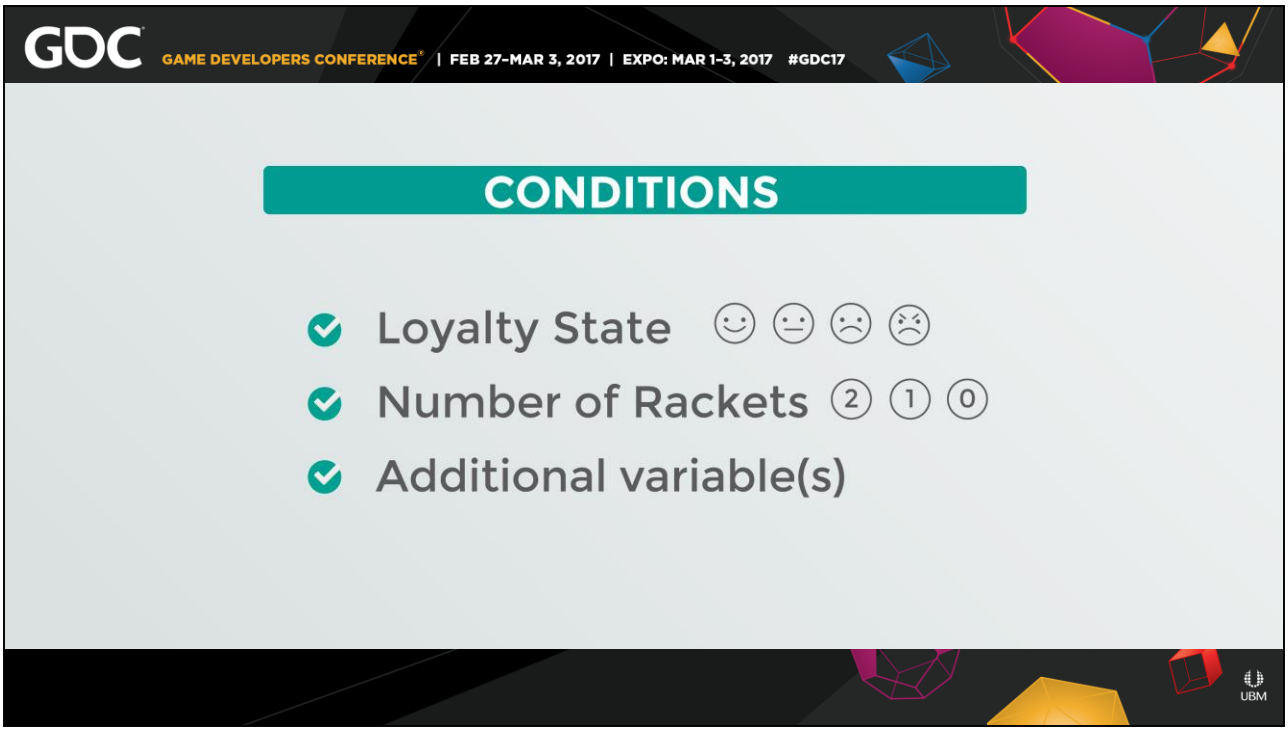
Let’s take a look at what conditions are in Sit Downs.



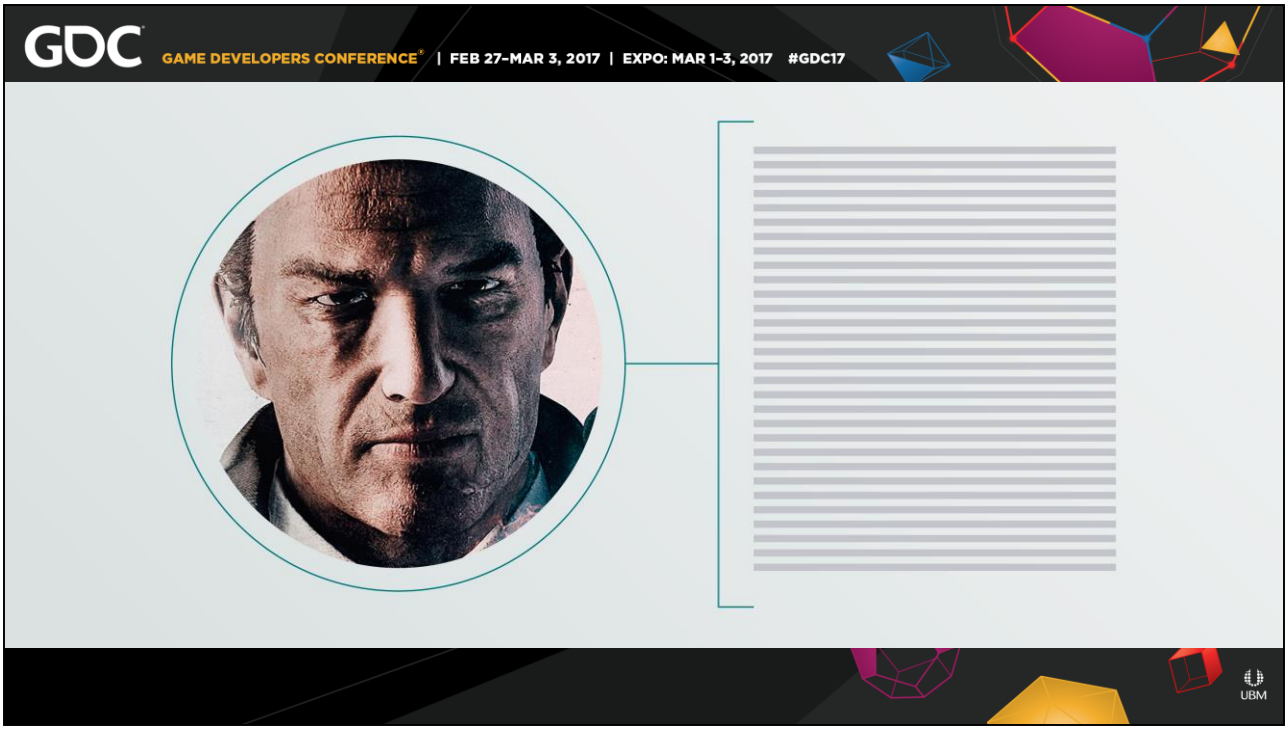
For example, conditions can be the Loyalty state. Content, Neutral, Angry or Ultimatum. If characters are War or Dead, they don’t attend the Sit Down meeting.



Then, you have conditions related to the number of Rackets secured in the District: two, one, zero.

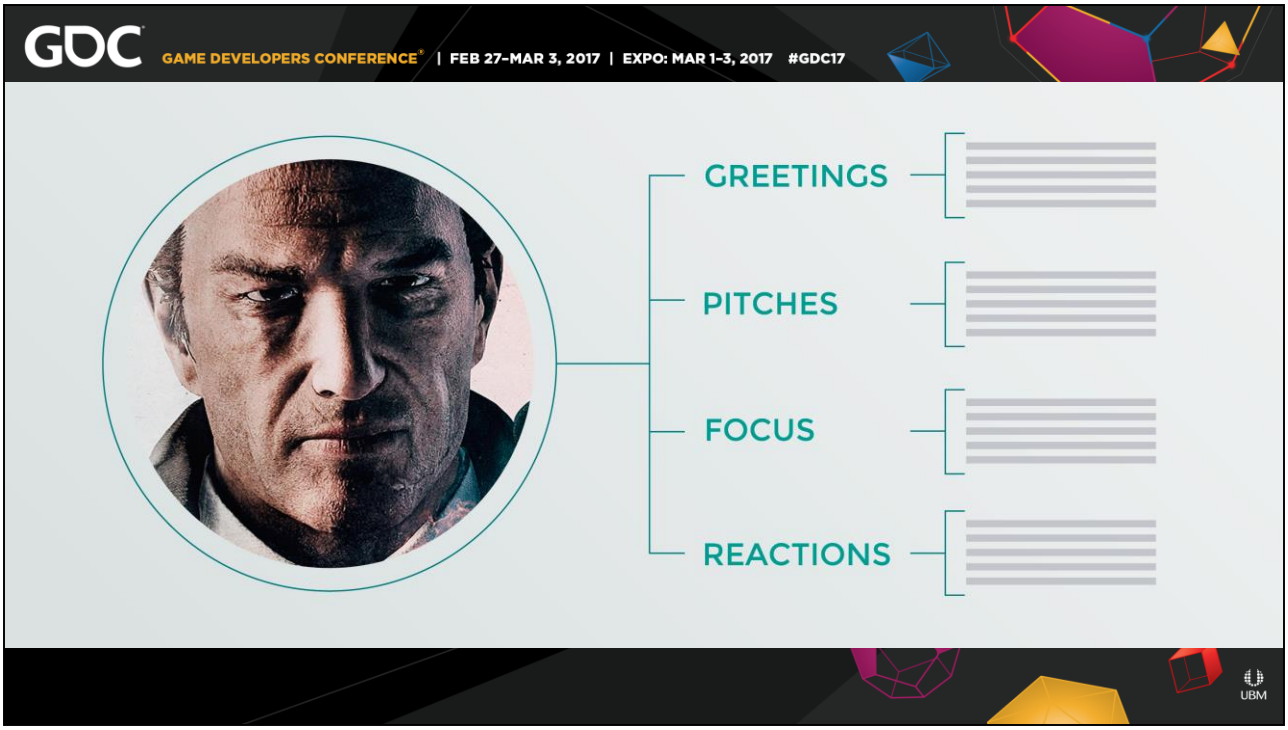


And then you have really any other additional variables. For example, if it's the first district; the last district, Vito is the least powerful, the most powerful… etc.



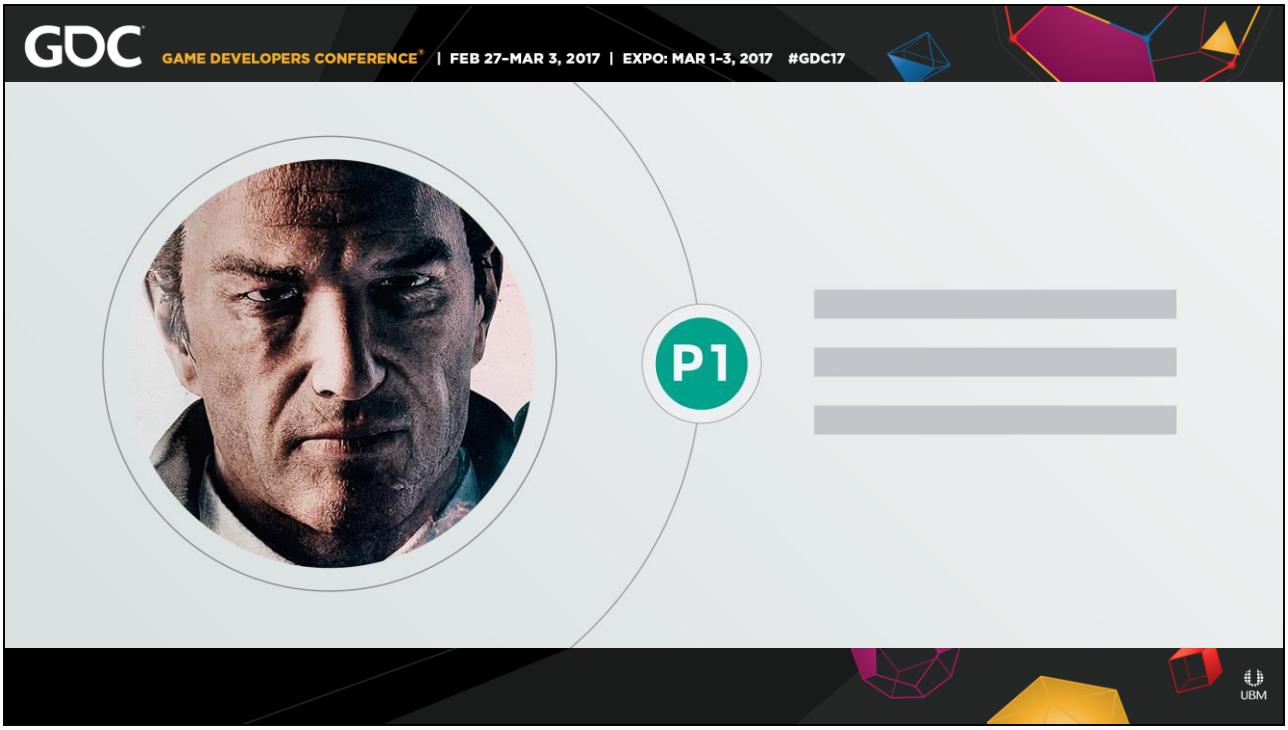
So that’s for dialogue data. Now let’s go back to Vito’s library of dialogues.

Because there are so many, we need to organise them.



First, we put them in context: all Greetings together, same for Pitches, Focus dialogues, and Reactions.

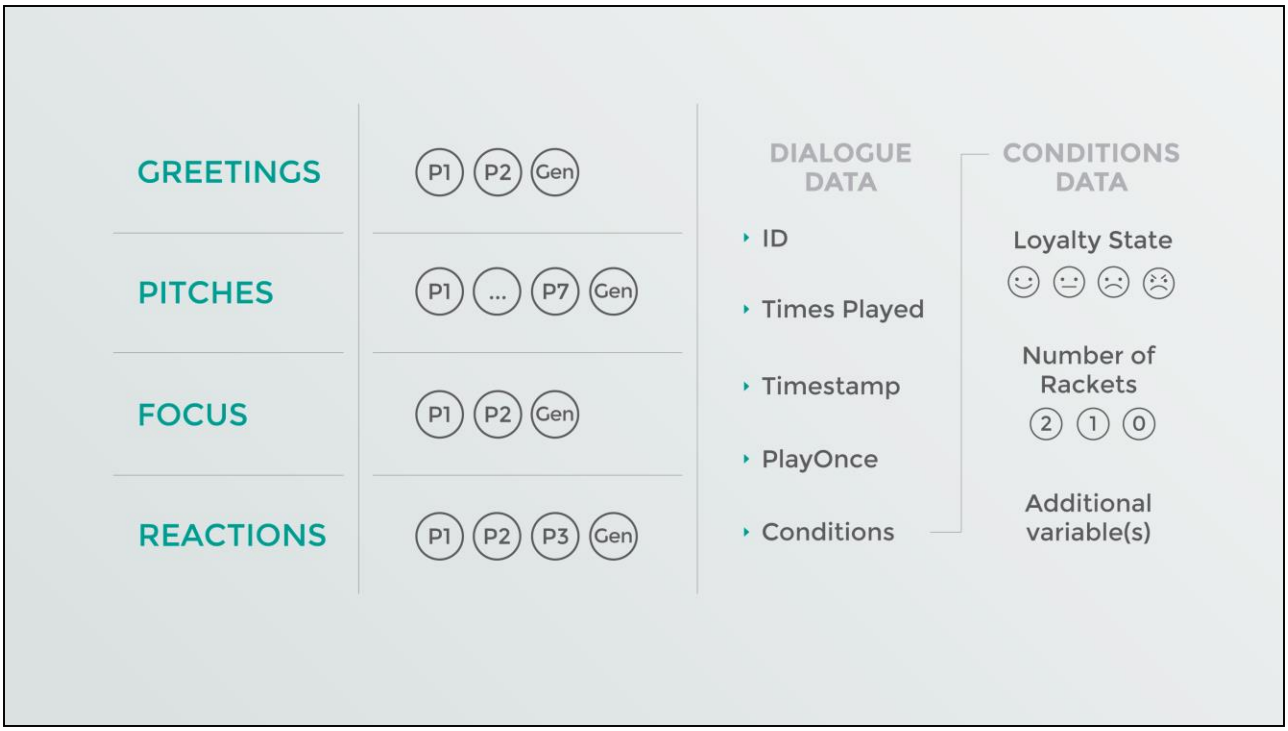
Then, inside categories we define priorities; as many priority levels needed depending on which dialogues are more important than others.



For example, dialogues specific to the first or last Sit Down in the game as marked as priority one.

In priority 2 are dialogues related to Characters being killed since the last Sit Down, reactions to an Ultimatum state triggered, etc.

Then you define as many priority levels as you need and finally, your set of generic dialogue; your base. They have less specific conditions, usually down to the Loyalty state of the character.

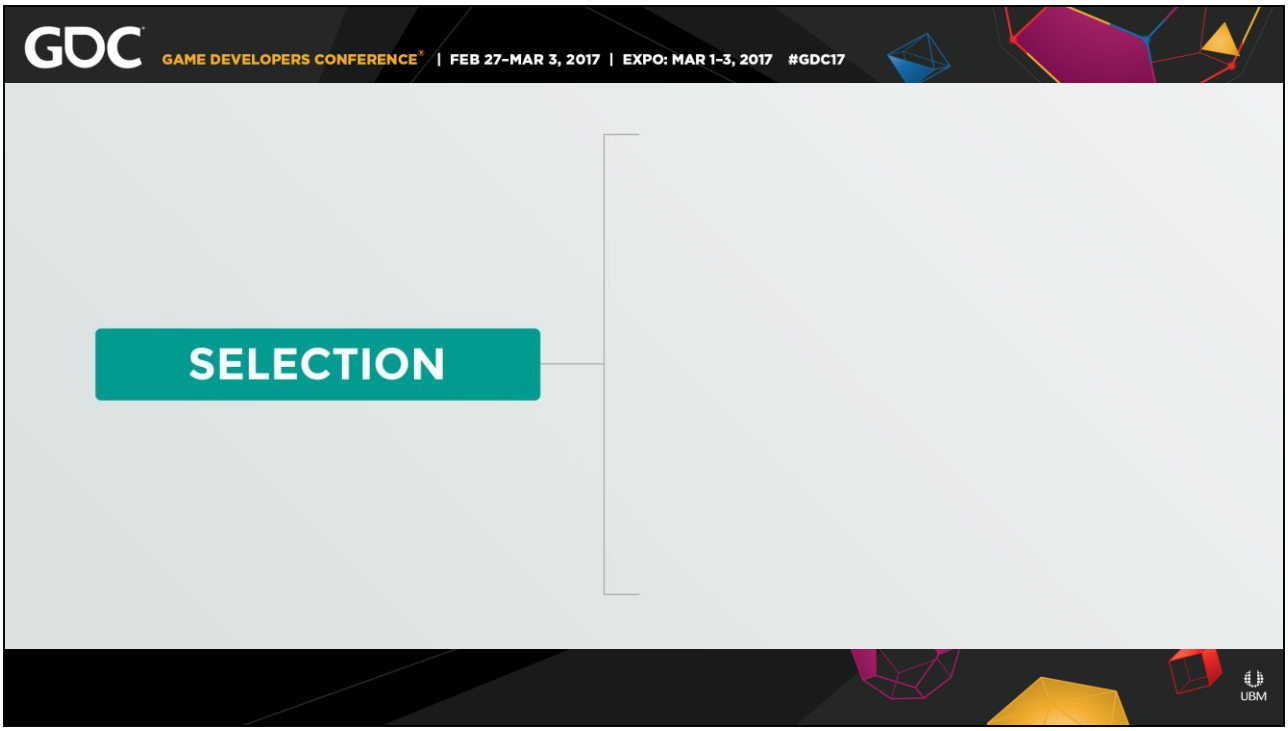


And so that's how we structure dialogue data for Underbosses in Sit Downs.

First, organise by context;

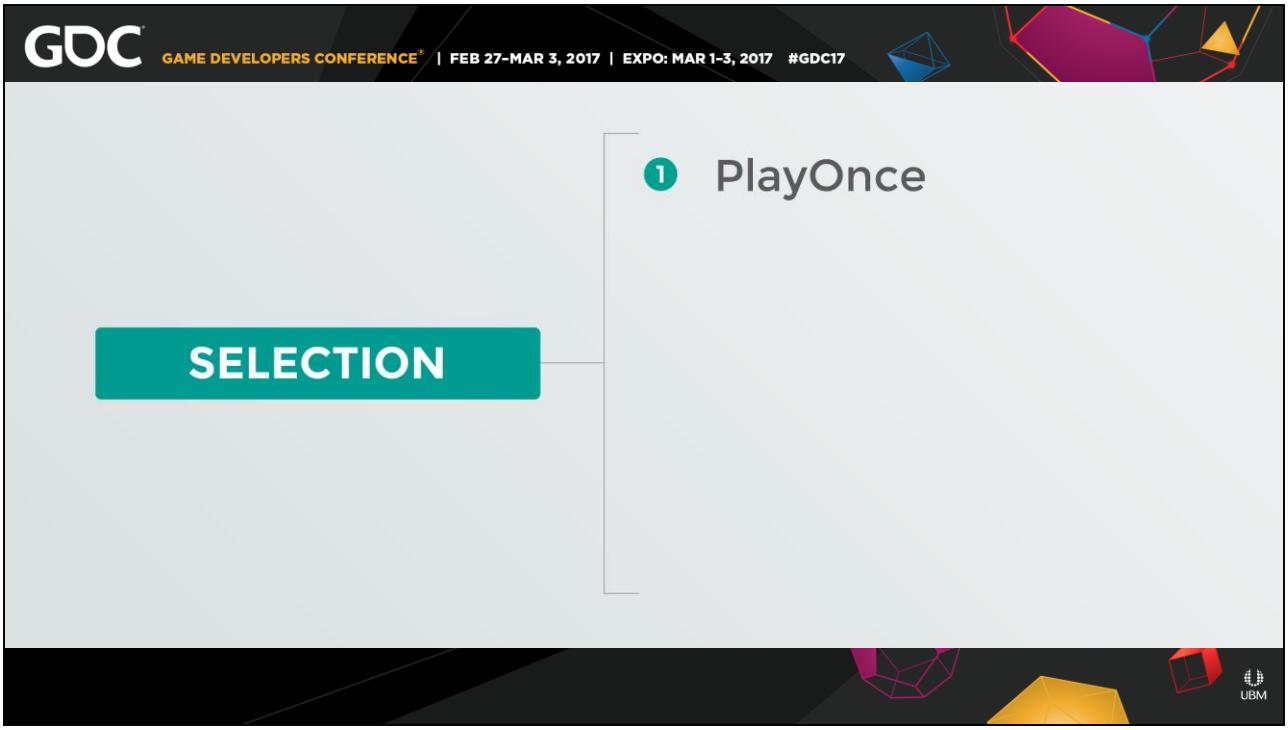
Then, within contexts, we organise dialogue assets by priority; for example, Greetings have three levels of priorities; Pitches have eight.

For each dialogue we track a bunch of statistics; and conditions are a mix of game state variables.

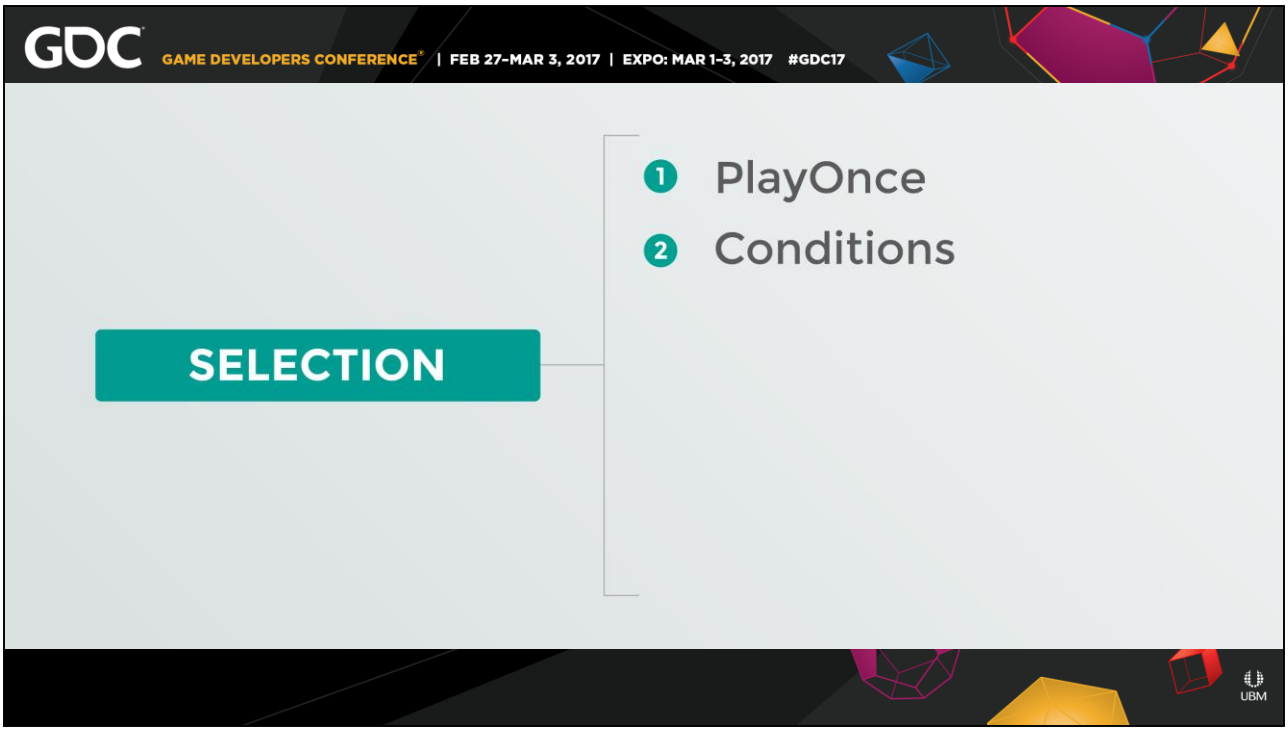


So that was from the data structure.

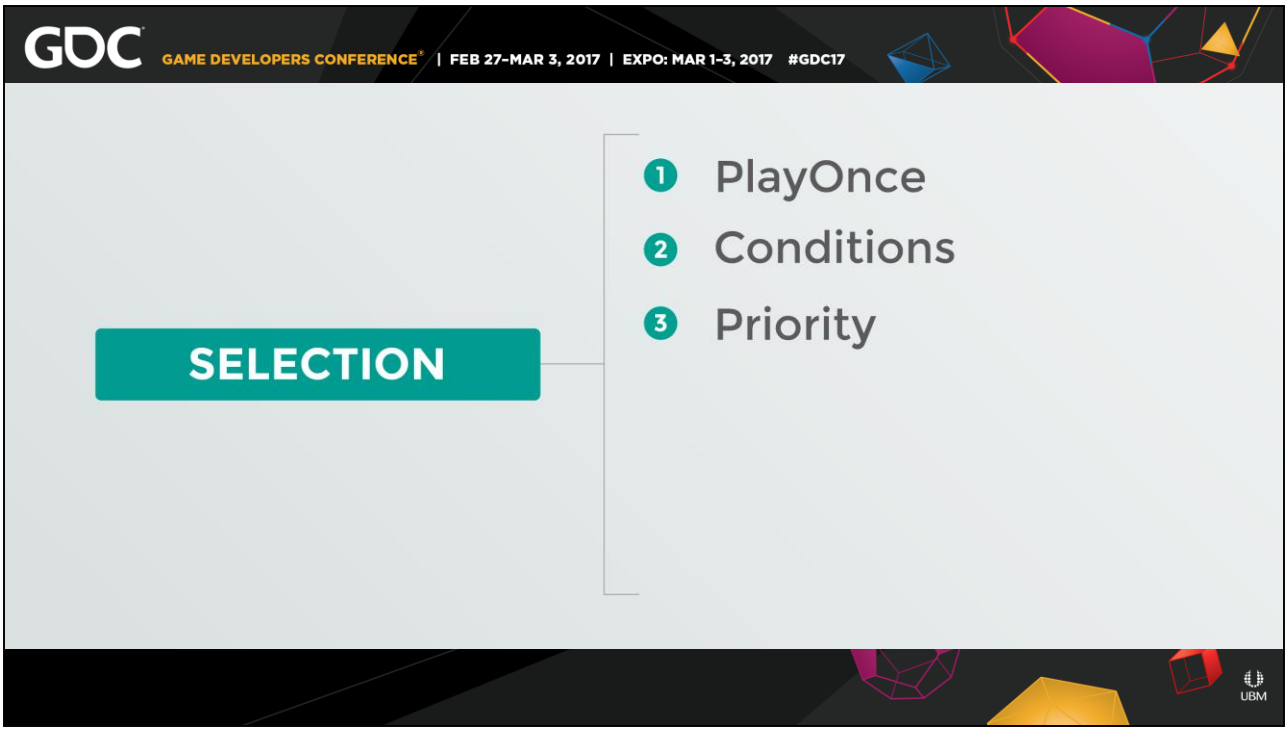
Now, when we detect it’s a character’s turn to talk, we run a selection algorithm parsing all dialogues from a context to choose the most relevant dialogue to play.



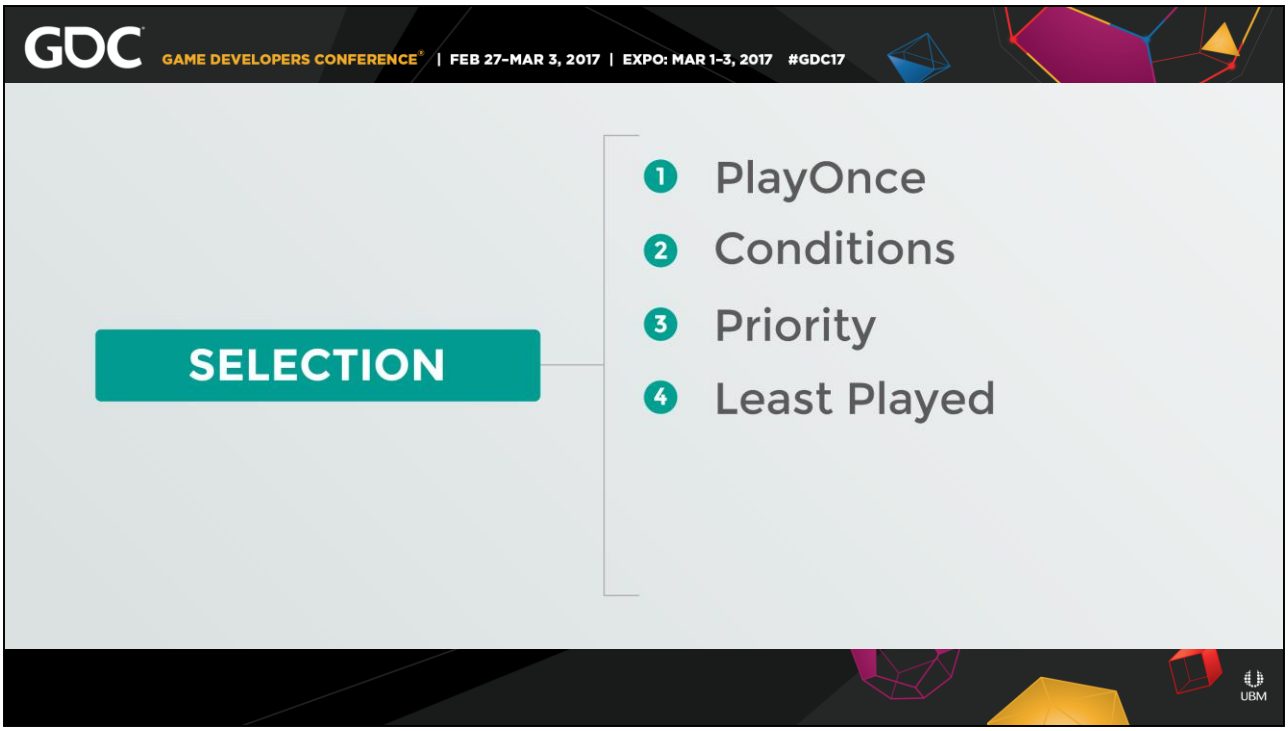
First, we look at the PlayOnce status: if the PlayOnce option was ticked and the dialogue has been previously played, the dialogue is discarded.



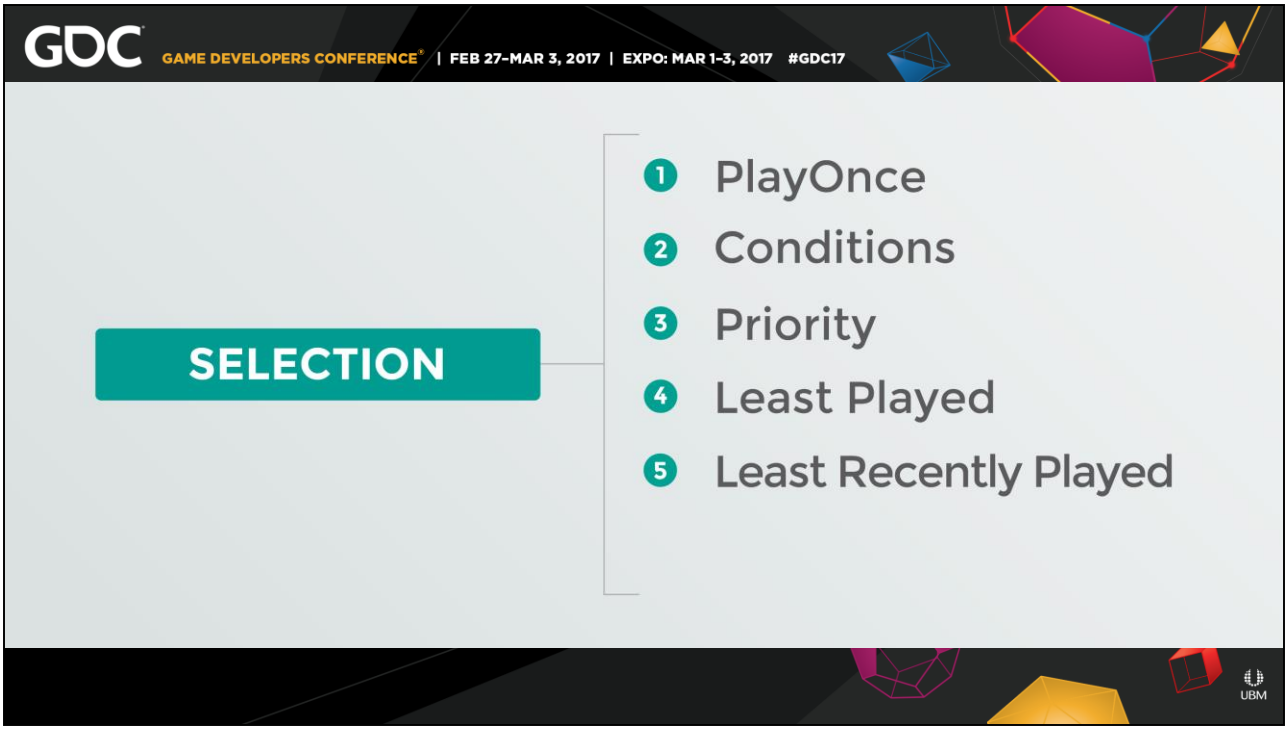
Then, we look at the game state conditions linked with the dialogue. All conditions have to be met.



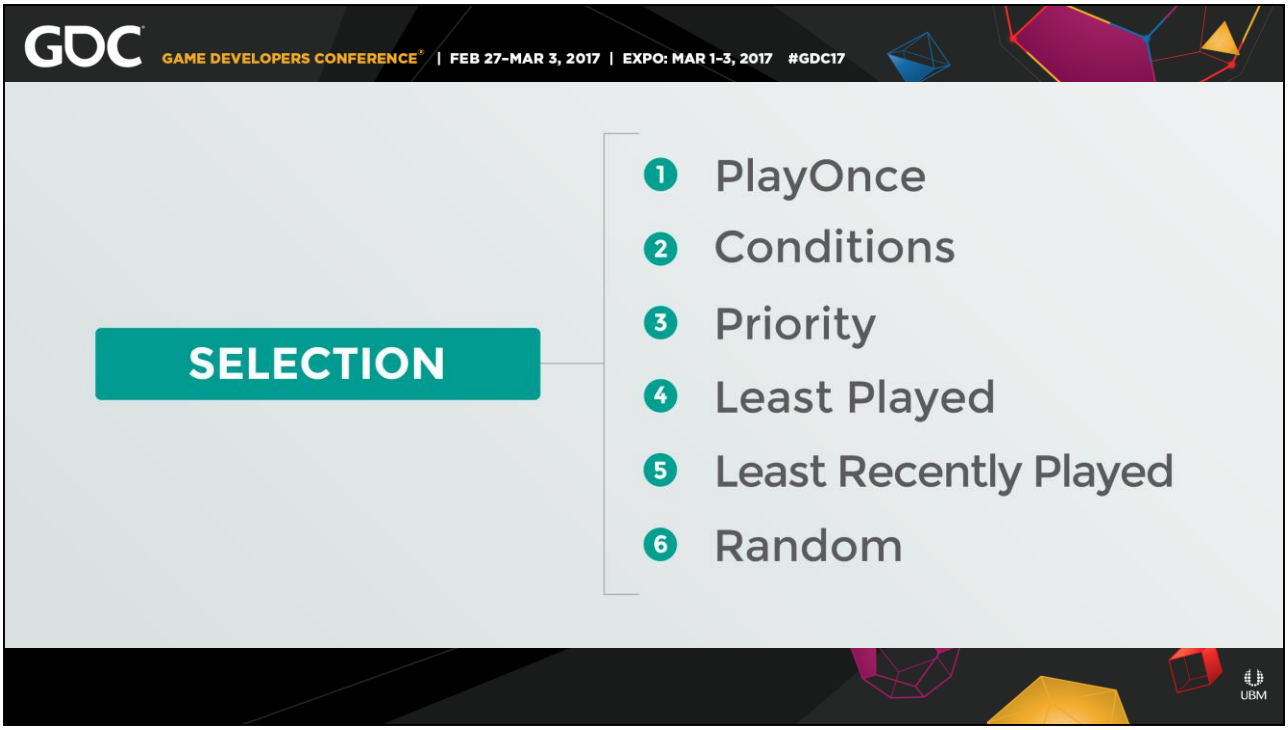
If more than one dialogue returns true conditions, we compare priority levels of the dialogues: if a priority 1 dialogue and a generic dialogue return true conditions, the priority 1 is selected.



If dialogues are in the same priority level, we compare the number of times the dialogues have been played. We pick the one which has been played the least amount of times.



If there is still a tie, then we pick the least recently played dialogue.



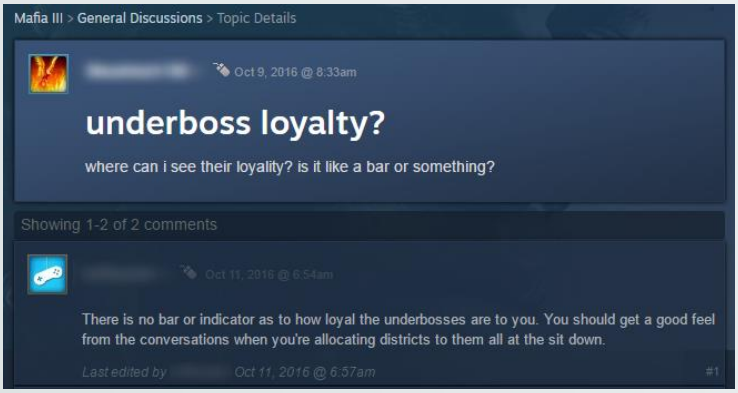
And finally, if there is still a tie, we pick a random dialogue from the group.

The random part is interesting for me: in Sit Downs, because of the enormous dialogue scope, most of the dialogues have never been played; so the algorithm very often has to pick randomly within a dialogue group.

It means that actually, as the designer I know what characters can potentially say, on which game state variable they could react -- but in some situations I can't anticipate exactly what they're going to say. It makes the Sit Down sequences very unique.

The public reception was really interesting to see on the Loyalty system and on Sit Downs.

Reception

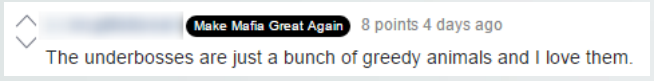


One of my favourite comment is this person asking on Steam forums "Where can I see the Underbosses Loyalty? Is it like a bar or something?":

The other user responds: "There is no bar or indicator as to how loyal the underbosses are to you. You should get a good feel from the conversations when you're allocating district to them all at the sit down."

This kind of comment validates all the design, writing and animation work on the 'Characters as feedback' direction and it makes me really, really happy.

Reception



Another favourite comment: “The underbosses are just a bunch of greedy animals and I love them.”

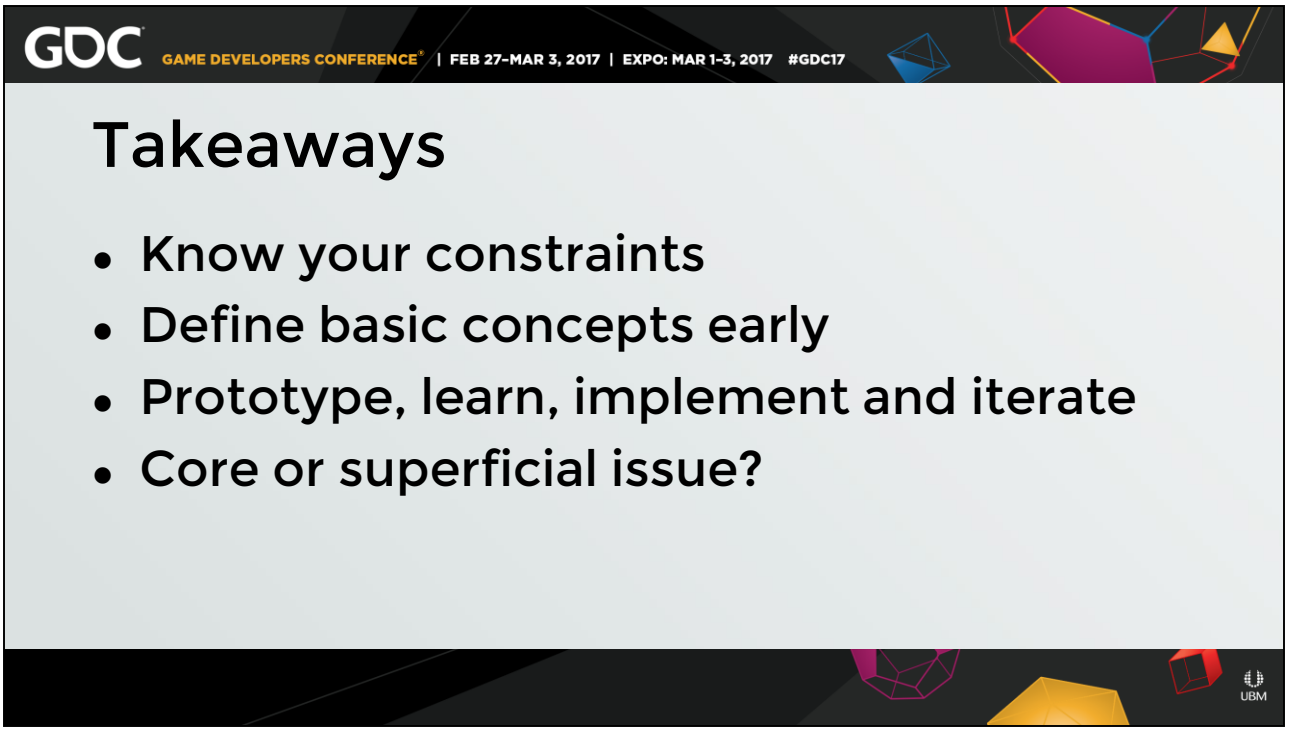
I don’t know how I feel towards the “Make Mafia Great Again” though ☺

Lessons

- Dialogue work is universally engaging
- No system overexposure = projection
- Voiceover = strict deadlines

Some lessons learned throughout development:

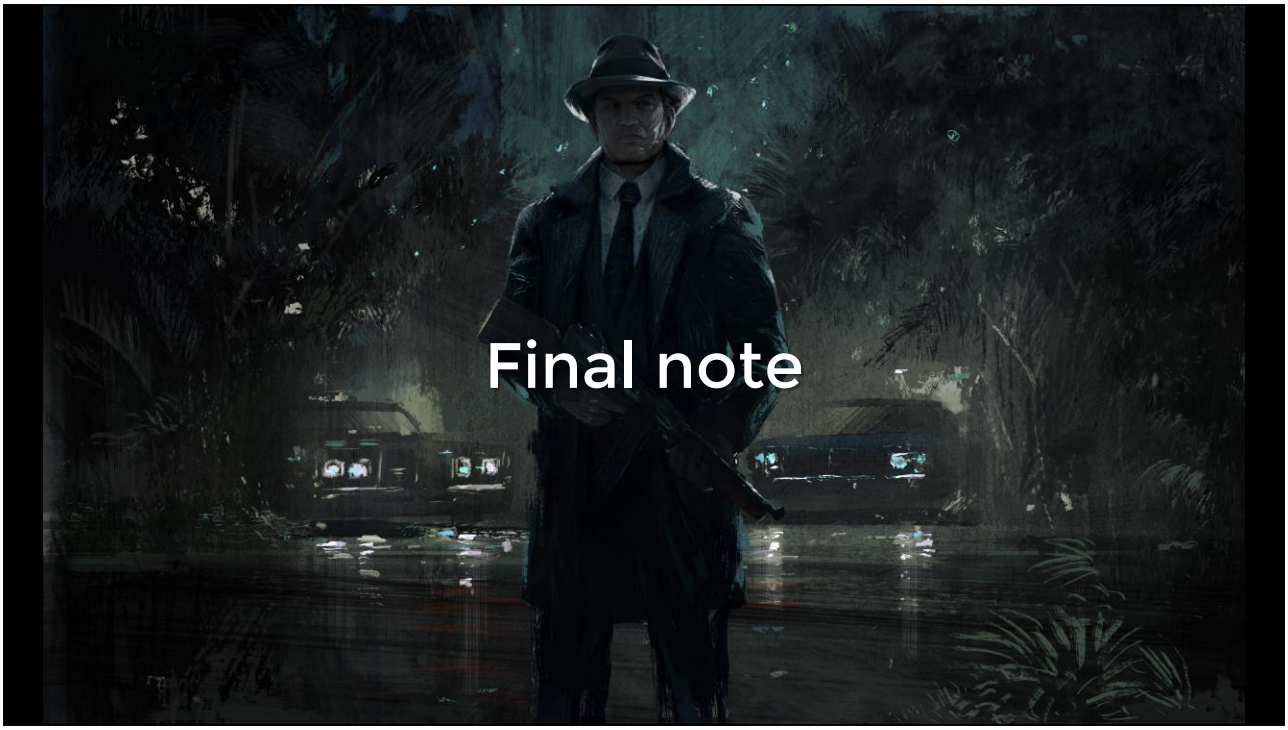
- Since communication is so much a part of our every day life, players seem to enjoy interesting systems around dialogue and choices, especially when they are integrated in the gameplay experience. Sit-Downs proved to be a popular feature.
- Not overexposing your system helps create interesting play patterns. Players had a really cool tendency to project lots of different and personal reasons to choose an Underboss. Through projection, they created a play pattern deeper than how the actual system works.
- I didn't mention it in the presentation, but late in the development we introduced a new state – Loyal – better than the Content state (so the best state possible). But as we were past the voiceover deadline, we had no way to reflect it through dialogue. So that's definitely a big caveat when you're working with voiceover, deadlines are crucial; it's a real blocker for any major late system design work. So plan ahead!



In short, the takeaways from this presentation:

- Define and know your constraints well – here I needed to find interesting rules around racket and district assignments
- Define the basic concepts you want to explore – when you need an update, revisit them to see how you can improve the execution
- Prototype, learn, implement and iterate – it takes a while to get comfortable with a design; to know it, to mature it. We validated a lot of decisions through the Twine prototype.
- When there are player issues with the system, ask yourself this: is this a core system issue or can it be solved by working on the perception of the player?

You can see that these are pretty classic game design lessons here, but they can be applied well on narrative heavy features like the Loyalty system and Sit Downs.

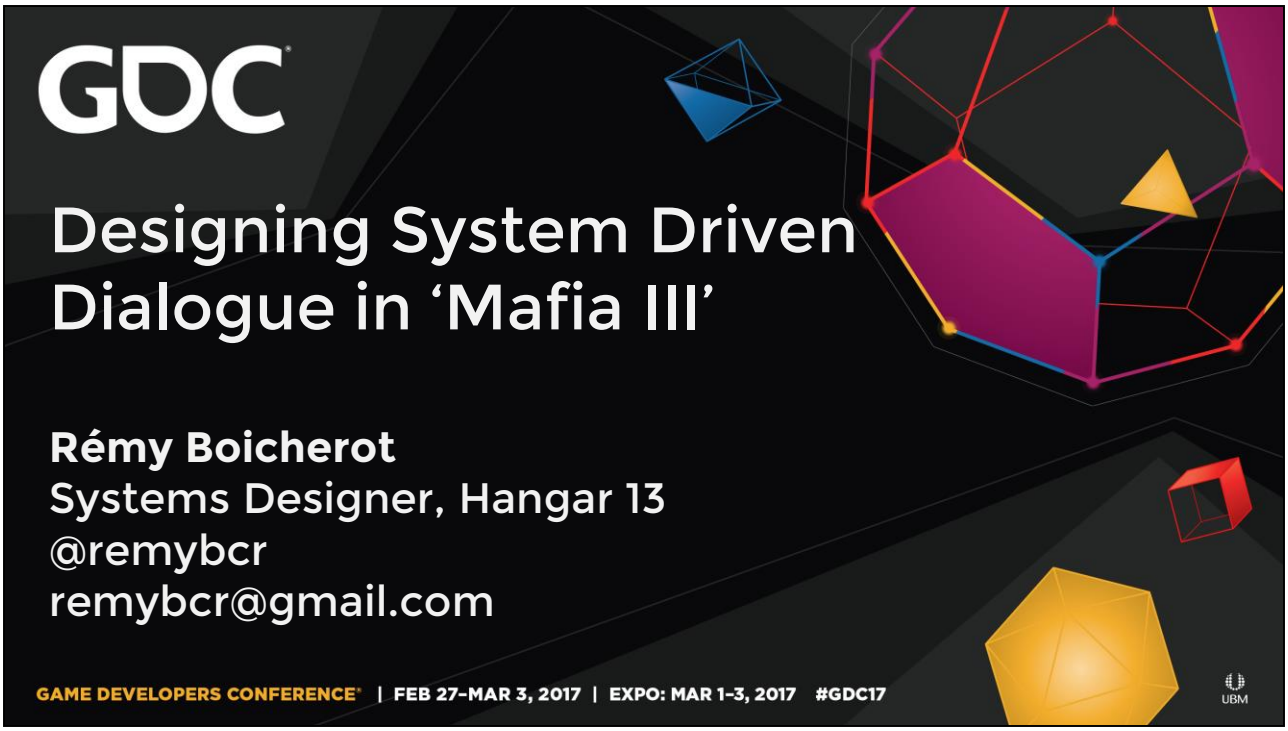


So there’s no question we can tell engaging stories through game systems. The biggest question is how?

When we have the possibility to bring designers, animators, writers and actors together, we can’t let traditional storytelling practices take more importance than the actual game design, or simply rely on proven concepts. We’re not making films, we’re not writing books; we create games.

There’s definitely room for improvement about how we can best use performance to serve a game design – the work we’ve done on Mafia III is just a small piece in the incredible potential of emergent stories through interactivity.

I really can’t wait to create and play some more.


GDC
Designing System Driven Dialogue in 'Mafia III'
Rémy Boicherot
Systems Designer, Hangar 13
@remybcr
remybcr@gmail.com
GAME DEVELOPERS CONFERENCE | FEB 27-MAR 3, 2017 | EXPO: MAR 1-3, 2017 #GDC17
UBM

Thank you.

Defining dialogue flow rules

- Ultimatum: biggest priority
- Greeting: angry chars, then previous pick
- Pitch: nb of rackets, then lowest
- Reaction: angry chars, new pick, lowest
- If tie, random!

Other uses

- Racket Call
- Persistent Characters
- Radio system

Extended scope & writing issues

- Bad transitions
- Vagueness
- Loyalty state not conveyed
- Dialogue create false rules