

The following content is provided under a Creative Commons license. Your support will help MIT OpenCourseWare continue to offer high quality educational resources for free. To make a donation or view additional materials from hundreds of MIT courses, visit MIT OpenCourseWare at [ocw.mit.edu](https://ocw.mit.edu).

**PROFESSOR:** Otherwise class announcements. Sprint task lists due today, hopefully you all turned them in. Paulina's going to check that out and make sure that each team has a new sprint task list turned in. We're asking for one of those once a week because we want to know the state of your game as it is right now. A lot of it is for our use to track where your game is going and how your game is going.

The actual format you're using isn't as important to us for this last project. Again, if you're using a non-standard format, once we get to the next product backlog presentation-- which I believe is next week, I could be wrong about that, it's in Stellar-- we'll be asking about your project management process, what you've been using, how it's been working, what changes you've made, stuff like that to know how you're tracking what you're doing and when you're doing it.

Yeah, so today. I've got another minute. Today we're going to talk about story in video games, then you have time to work on your class, and then at 3:00 PM Ed Barrett's class is coming in. We've got 18 folks coming in to play test your games. Remember, we did require you to have a playable digital build today. Please test that build. If that build does not get you the test data you need, also test another one. So if you have a paper prototype and you want to test that, you can test that concurrently.

Again, just like before, having three workstations open at each team would be awesome. It means everybody gets to play the games quickly and get out quickly so that you can then finish up working. You don't need to test each other's games. So actually allow our guests to test games first before you start testing each other's games today.

Any questions about procedures and whatnot? All right, so we're going to talk about stories in games. This is a lecture that I've adapted from a previous colleague of ours, Claire Fernandez Vera. She studies adventure games. She studies games through the lens of theater, so she's got a really interesting view on play as performance. This is much more of a talk about what is usable for you right now in the games you're making in this class. I'll start out with talking a

little bit about bigger games, but then I'm going to move quickly into talking about things are more useful for you all right now.

Just a question for you. Do games tell stories? Yes? I see you nodded. Why? How?

**AUDIENCE:** Obviously there are games that are more narrative-heavy like with cutscenes and words and happening. But I feel like you can also easily convey stories just with the images and the way the player interacts with the game itself. You kind of create a narrative then.

**PROFESSOR:** Great, you did my lecture. I'm done.

**AUDIENCE:** Yeah.

**PROFESSOR:** Thank you. Any other ways games tell stories? We heard cutscenes, we heard narrative, we heard words, we heard pictures. Yeah? One more hand? Where?

**AUDIENCE:** Game books also tell stories.

**PROFESSOR:** Yes. Game books, the physical things around games.

**AUDIENCE:** It's also really rare and hard to do, but it's really great when games can tell the story through the mechanics.

**PROFESSOR:** Yes, absolutely, telling the story through the mechanics. Which game did you mention? Papers, Please?

**AUDIENCE:** I think so.

**PROFESSOR:** Excellent. So when we talk about games and stories, sometimes we think about these. Actually, you're good, you mentioned some other types of games. Final Fantasy 13, Metal Gear Solid 4, both games kind of derided for, in certain circles, the linearity of their games. You start the game, you watch the movie, you hit some buttons, you watch the next movie, you hit some buttons. Some people like that, that's one way to play games. That's one kind of game that is out there. Not exactly the kind of games that we're making in this class. But also not exactly the kind of games-- not the only way to tell stories in games, as you just mentioned.

To make those kind of games, we're calling them AAA games if anybody's heard that phrase before. AAA just meaning expensive. Blockbuster. The Marvel blockbuster movies are

basically what's happened to film, Call of Duty is the game version of that. So they require many expensive resources, artists, sound designers. We heard an artist talk earlier this week about how art's important and why art is important, and how difficult it is for one person to do all those different kinds of tasks that are required for a complicated game.

Just to note that those two games that I mentioned previously usually borrow techniques from cinema. So things like camera placement, lighting, visual effects and sound effects, a lot of those things are their borrowing concepts from cinema that have been proven to work in cinema, and then just throwing them in the game because they know they work.

One way a AAA studio might think about making a game with story is, all right, so it's this balance between interactivity and narrative, right? And there's this cost, so think of that triangle as the cost. It costs money to make these games, and that money is generally either spent on people or it's spent on time, so people times time, basically.

And the idea is that, all right, so we've got this interactive stuff going on right here, the player presses buttons, great. We've got this narrative stuff here and I'm borrowing comedy and tragedy. When I say narrative, think back to your Aristotle. So plot, comedy, tragedy, melodrama. A lot of the AAA games tend to just basically be big melodrama pieces. But it could be folk tales. That narrative could be-- sometimes it has conflict, sometimes there's not conflict. Sometimes there's a dramatic arc or not.

So they say, all right, so we've got to balance the two. And how do we do that? State of the art AAA 2011, this is Arkham City, that's Batman, his parents are dead. Press X to pay your respects. You press the X button, he places down the rose, you get a nice little cutscene reward with it so you can see a little bit of a movie going on with him being grim and putting down the rose. But you also get a little achievement, so it's a reward, it's an Easter egg. But it's a crucial back story to the character, they put it in the game. They spend a lot of money making that animation. Not all players are going to see it, and when they do see it, it only lasts for a very short period of time.

That was 2011. It's 2014, we've got really cool computers, we've got Xbox One, PS4. Your state of the art, AAA, 2014 Call of Duty: Advanced Warfare. We've got an upgrade. Hold X to pay respects. Basically, it's a quick time event. We've seen quick time events with other games before, if anybody's played Heavy Rain, if anybody's played the Shenmue games, Resident Evil games, things like that. Basically, you've got a video footage going on, and you can press

a button and it'll give you a new set of video footage.

There's a lot of animation going on, there's a lot of cost going into this. I think the hope for this kind of thing, why it's hold X instead of press X, is by holding X, you're embodying that action. Maybe you're grieving, maybe it's praying, maybe it's holding the button. Maybe the longer you hold it, the more you grieve. So maybe there should have been a score that's counting down how much grief you got. But if you've read the internet about the game, you notice that, yeah, it hasn't quite worked out the way that they might have thought it worked.

You don't have AAA resources, so why did I talk about all that? And you should probably just give up on stories, right? I'm going to say no, of course, that's why I'm talking about this for about another 45 minutes. But some games don't need stories to be fun or have a meaning. Anybody recognize the pieces on the screen? Tetris. The tetrominos of Tetris. Is there a story to Tetris? Some people say there is. And I'm talking about this Tetris too, there's not even color in that. You can't even tell what the tetrominos are once they hit the pile, they're just there.

And actually, that might be that-- I don't know, I think the bottom of that bottom row is the bottom of the bucket that's holding it. So our own MIT's Media Lab Janet Murray would say that Tetris is the monotony of the work day, of putting things in their places. Another professor, Jim G. over at University of Wisconsin Madison, he says Tetris is an escape into the very desire for order, control, and workable solutions that we have all the time. Some other less notable but equally valid people on the internet say it's the story of life, it's never won, it always has an ending, and that ending is your death or everything just piling up to the top.

Because it was made in Russia, some people might say that it's a critique of communism, maybe, or of sameness, or of bureaucracy. Although the creator, the Russian creator Alexey Pajitnov would say-- he does say-- that for him, it's about playing on the edge of your abilities and about playing to a life well lived. So the point of all this stuff is people read patterns in the most abstract things.

So maybe you don't need story, maybe you just give them some abstractness and then move on. Tetris was made in 1981 or thereabouts, on that one, 1983? I should have put that in the slide. So that was 30 something odd years ago. What if they made Tetris today? Here's Tetris today, or one version of Tetris today. Why would somebody make a Tetris game with story? This is the Japanese only Puyo Puyo Tetris. It's taking two different game mechanics and

splicing them together. Why would they put characters in the Tetris game? What's up?

**AUDIENCE:** [INAUDIBLE].

**PROFESSOR:** It might, yeah. And people are used to seeing characters.

**AUDIENCE:** [INAUDIBLE].

**PROFESSOR:** Possibly, yeah. Any others? Any other ideas? Yeah?

**AUDIENCE:** Tetris already exists, so they need to make it at least slightly different.

**PROFESSOR:** Absolutely, yeah. Actually, we were just talking about this before class. Would you be able to sell this today? Do you think this could sell today? You've never seen Tetris before, it's a brand new thing, you'd look it up. Maybe it would, maybe it wouldn't. Has anybody played the game Hexagon or Super Hexagon?

**AUDIENCE:** Yes.

**PROFESSOR:** Does Hexagon or Super Hexagon have a story?

**AUDIENCE:** No.

**PROFESSOR:** OK. Then why is there a narrator and a voice? Why is she telling you--

**AUDIENCE:** It sounds like-- I feel like it's partially to let the player know where they are, maybe?

**PROFESSOR:** How does she talk? Kind of robotic?

**AUDIENCE:** It's robotic, but also like a woman's voice.

**PROFESSOR:** There's a little bit of story. Why is the character a triangle?

**AUDIENCE:** Why is the character a triangle?

**PROFESSOR:** The thing that you're moving on a screen. Why a triangle and not a square? Or circle?

**AUDIENCE:** [INAUDIBLE].

**PROFESSOR:** Maybe.

**AUDIENCE:** It shows you--

**PROFESSOR:** I'm going to argue that there's a little bit of--

**AUDIENCE:** Triangles are non-deformable.

**PROFESSOR:** What's that?

**AUDIENCE:** They're more sturdy than squares. If you squish a square it turns into like a weird slanty square.

**PROFESSOR:** There you go.

**AUDIENCE:** Rhombus.

**PROFESSOR:** There's little hints of story there.

**AUDIENCE:** The character is the triangle. I think.

**PROFESSOR:** Yeah?

**AUDIENCE:** One other reason for characters is merch.

**PROFESSOR:** Merchandise. Actually, yeah, especially with this one. What do they call the characters when they make-- like, Internet Explorer as a character. Is it [INAUDIBLE], or is it a tomo?

**AUDIENCE:** It's like something tan, so like Internet Explorer-tan.

**PROFESSOR:** Something tan, yeah. So L-tan and other L-tan, maybe. So that's story. That's reason is the story that historians of a game play purpose I would argue that Pac-Man has a story. A noticeable story, right? There's cutscenes in this Pac-Man. But what's the story of Pac-Man? Where are the hints of story there?

**AUDIENCE:** I guess it could be in how the enemies have names?

**PROFESSOR:** Absolutely. And why did they give the characters names? Why is Blinky Blinky, and his character, his personality is shadow?

**AUDIENCE:** I think as far as I remember, that's really-- the English translation is a really poor translation of it. In the original, it's very clear as to their names gives a hint as to how they will act.

**PROFESSOR:** Absolutely. They have deterministic actions. So I've given them a little bit of character, but that's going to help you to identify one before the other. If anybody's played the Atari 2600

version of Pac-Man, my first experience with it, all the ghosts had the same image. You couldn't tell which one had which type of action. They probably actually didn't have different AI. It was a really difficult game for them to make. They had to make it in two or three weeks, I believe.

What do we gain from story? This is where I come in and say, this is what I think story is going to give to your games. Even if you're making a strategy game, it doesn't matter what kind of game you make, you're going to get something out of a story. We understand our lived experiences as stories, so providing a story is going to help a player understand what's going on in the game.

If you think about what you've ever done in the past, you're always telling it to another person as a story. The way you are able to memorize things, often, is you're constructing stories in your head of things that you've done. It's events with causes. You're placing together, you're finding patterns, and you're putting the story in there. It helps you understand what's going on around you.

A story can help you explain the world to the player, it can also encourage the player to explore it. So if you've got something in the game that's hidden later on, you want them to find it, you can use story to give them hints towards, there's this cool thing coming up that you might want to check out.

On a parallel level to explanation, stories provide consistency to the world. So if you've got various things going on within your game, the way you can kind of massage the differences between things going on, between the mechanics, is by covering that up with story, or rather, embellishing and supporting it with story rather than covering it up. So a couple quick videos. When I'm talking about story games, especially in this lecture, I'm mainly talking about games with story, not story-driven games. The games we talked about earlier, those were story-driven games. This is a game with a story.

[VIDEO PLAYBACK]

-The heroes finally meet under the star of destiny.

**PROFESSOR:** That's Sophitia, in the white we've got Cassandra.

-I'm sorry, but I can't back down.

-What do you want?

-Battle one, fight.

**PROFESSOR:** Have you heard of this game? Soul Calibur, yeah. I think it's 3. 2008 or 2010, I think it's from. Did anyone catch what she said?

**AUDIENCE:** Don't try to confuse me.

**PROFESSOR:** Don't try to confuse me. So KO, you basically have--

-You win.

-God, please forgive me.

**PROFESSOR:** God, please forgive me, what is she talking about?

[END PLAYBACK]

**PROFESSOR:** Does anybody know what what she was saying there and why she was saying it? You might only know this if you've played the game before and you're really, really into the game. So Matt? Yeah. So Cassandra is Sophitia's sister, and they're fighting for the Soul Edge, for this demonic sword that's going to destroy the world. And she has to fight her sister and kill her sister to get to the sword. I think that for Sophitia's version it's to save the world.

Why didn't she work with her sister? It's a fighting game, who knows? I meant to update the slides to something a more modern audience might understand. In particular, League of Legends does this kind of thing a lot, right. There's story moments going on in games. You had mentioned a moment in the game.

**AUDIENCE:** Certain characters on the same team, I believe, they have different voice prompts or different vocal lines that they would say to acknowledge that they have a history.

**PROFESSOR:** Does that help you play the game Better

**AUDIENCE:** No, no gameplay mechanics.

**PROFESSOR:** No. It's a valid use of story, but it's not an efficient use of story, especially for your kind of games, right? It doesn't directly connect. The story doesn't directly connect to the player's experience of the game, but it is something players like. Like we talked about with characters,

like we talked with merchandise. And in particular, in particular for this game, for Soul Calibur, why is Soul Calibur doing this but Street Fighter isn't doing this?

Soul Calibur stands apart from the other fighting games by having these complex story lines that are actually visible to the player within the games. Street Fighter does have complex storylines, but they're largely fan service or outside of the game, merchandise, books, things like that. You maybe see a little cutscene or two at the end of the game, but not while you're playing it. And also, to really enhance the single player experience of the game.

That's actually how I know of the Soul Calibur series, I played it single player. Because they added an RPG to it that was really basic and stupid, but it made the story a little bit more concrete. They took the RPG out, that's when I stopped playing the game. Because that story didn't have any-- there's no reason for that story in the gameplay anymore.

So I was asking you about games telling stories and how do games tell stories. What I'm going to say now is that technically, games don't exactly tell stories, if you think about it. Like, who is the storyteller in a game? You. So it's not storytelling, it's story building. The game, the designer, the developer is giving you the tools to build a story of your own.

Why we say they're different, so just to compare and contrast, storytelling is continuous. There's a one way communication, it is from auteur and author to the player. The order and, more in particular, the order of events and disclosure of information is determined by the author of the game. I'm going to show you this, and I'm going to show you this, and I'm going to show you that.

Story building is more fragmented. It could be as simple as I'm going to show you this, now you can go see all these other things, but I'm going to pull you back and I'm going to show you this next thing, and you have to see those two things in order. In a more open oriented game, you can see everything at any point of time depending on when you like it.

Rather than a one way communication, there's collaboration between narrative design and the players. Anybody heard the term narrative design before? Or the job title narrative designer? What do you think that is in a company? And let's say Rational. Rational has narrative designers, she was actually a CMS student for Infinite. What would a narrative designer do in Bioshock Infinite?

**AUDIENCE:**

Probably write all the [INAUDIBLE] and stuff, and all the little pops that you hear? And what's

going on?

**PROFESSOR:** A little bit. I think Ken wrote a lot of that, Ken the director wrote a lot of that. They touch that, though. Yeah?

**AUDIENCE:** Think of how the story motivates the player and ties into the actual gameplay. So like, Bioshock, you're told to do this and the reason is the story. I guess figuring out how that fits in and how the mechanics will be fit into--

**PROFESSOR:** Yep, they touch that, too. The other thing they do is, you've got a level designer, and you've got a writer. And right in between, you've got the narrative designer. In some companies, this isn't for all companies. This is just for some. In particular, this is how I understand how Rational works, right, is the level designer creates a level based on how a person's going to play it, how they're going to get through it, how they're going to get from point A to point B.

Writer says, here's the story I need everybody to see, here's all the elements I need them to see. Narrative designer figures out where within the level those things are going to exist. And we'll talk about that when we're talking about environmental design. I'll point out a couple places where a narrative designer had an active role in that game.

All right, so I'm going to say that we don't need expensive cut scenes to tell stories. We've come up with a few, we've kind of touched on this a little bit. And instead, what I want to say is, let's reduce the cost of the game, but let's keep interactivity and narrative. So things a player does and the story that the player experiences are about similar. So what tools are we going to give the player to build their story? And where we give them the tools depends on the type of story we're giving them.

So there's two stories to games that the player builds. There's the story of the world, which largely is seen and heard, and it's interpreted by the player. And there's the story of the player, the actions that the player does, and why I say told, I kind of mean built as well. Told is in that the player is telling it, not the-- so the world might be something that the game is telling the player, but the story of the player is something that the player is telling back to the game, or back to their friends, or in their own head.

So story of the world, it's the world's history, right. It's the events that happen in the fictional world before the game starts. You've got a lot of control over all of this. As a developer, you're writing all of this. For the player, they're discovering it. They're discovering it piecemeal,

they're discovering it through the game play. So that story, with a great world, that story becomes a puzzle for the player to want to explore.

It can be as literal as in Myst, where it literally is a puzzle that you were going around and solving a puzzle here and solving a puzzle there, getting little snippets of background and putting them together in your head to come up with a whole view of what the world is. Or it could be things like I'm going to show you with environmental. Yeah?

**AUDIENCE:** Ideally, too, if your story is becoming a puzzle, it would be really, really cool if it was useful to have solved it, right? So maybe as a player, if you can figure out something cool about the world that can be useful to you back in your game again, that would be really great.

**PROFESSOR:** So the tools are giving the player to do that, to do exactly that. And these are three tools that you have at your disposal in your games right now. They're really simple and easy to use. At least the top two are. Title, character design, and your environmental design. So we're going to go through about four tiles. I'm going to give you the name of the game. I'm cheating a little bit because I'm actually giving you the cover art for the game. I'd like to know what the story is for the game. So, Zombies Ate My Neighbors. What is the story of Zombies Ate My Neighbors? It's about zombies. What are the zombies doing?

**AUDIENCE:** Eating neighbors.

**PROFESSOR:** They're eating neighbors. Where does it take place?

**AUDIENCE:** In a neighborhood.

**PROFESSOR:** In a neighborhood, all right. Anything else?

**AUDIENCE:** They're coming for you.

**PROFESSOR:** They're coming for you. Damn right. Yeah? In the back?

**AUDIENCE:** It appears that it's in a kind of campy style.

**PROFESSOR:** Absolutely.

**AUDIENCE:** Maybe like '60s-ish?

**PROFESSOR:** Mhm. You get the kind of distressed woman in the front. She's being chased by very slow, they're slow zombies, right? These days we have to kind of specify. Back in the day they were

always slow. All right, next one. The Earth Dies Screaming. What's it about?

**AUDIENCE:** Earth dying?

**AUDIENCE:** Space.

**PROFESSOR:** What's that? Space. Anything else? What's that?

**AUDIENCE:** Aliens.

**PROFESSOR:** War. Did I hear aliens? Something? Yeah. Anyone recognize the title?

**AUDIENCE:** Was it a movie?

**PROFESSOR:** Yeah. Do you think the game is based on the movie?

**AUDIENCE:** Yeah.

**PROFESSOR:** It actually isn't. So the movie's from '55, '57? I don't even remember if it's an alien invasion movie. It's just one of those things where in the '50s, you made a movie and then somebody came and put a title on it based on what titles were working that day. But they licensed it from 20th Century Fox. But there's these spaceships, these very '80s looking spaceships. This is actually a cartridge for the 2600. Looks awful. But yeah, The Earth Dies Screaming. What happens at the end of the game?

**AUDIENCE:** The earth dies screaming.

**PROFESSOR:** Yeah. Arcade games, back in the day. How did they end? They always ended with you dying. It was always about throwing another quarter, playing it some more, getting more time. That actually came back over to the consoles, especially in the 2600 days. We've moved beyond that, for the most part. In some cases, it's actually brought back in iOS. But yeah, Earth Dies Screaming. All right, next one, this is harder. A Mind Forever Voyaging. Ooh. What's going on there?

**AUDIENCE:** Discovery.

**PROFESSOR:** Discovery, yeah.

**AUDIENCE:** So we're allowed to look at the images and make something up.

**PROFESSOR:** Absolutely.

**AUDIENCE:** So you're a guy, you imagine all these things, and your brain interfaces with some kind [INAUDIBLE], so you can see that sort of imaging. So maybe you're exploring all of these virtual worlds in your head. And maybe--

**PROFESSOR:** Have you played this?

**AUDIENCE:** I just looked at the image. The title image, and that really helps me--

**PROFESSOR:** It does help a lot. But yeah, that's exactly right. Except you're wrong, you're not a guy. Right? You're not a guy. You're an AI. Right, yeah. I probably spoiled it for you, it's OK. It's an Infocom game, it's a text adventure from 1988. So you're exploring, text adventures were open door, go right, open mailbox, die from grue. And in this case, you're going to all these different worlds, and it's the mind.

So it had to do with the AI attaining sentience and figuring out what was going on, and what was around it, and what the world was like at the time. Really good game, cool, little bit of tidbit of info for these kind of games. They came with these things called feelies, so elements, like physical elements, that were shipped with the game box that kind of added a little bit to the game. Because they didn't have graphics to show you everything. So in this case it was a file folder, a pen, I think it was related to a company that you thought you worked for.

Here's a more recent game. 868-HACK. What's it about? What is 868-HACK?

**AUDIENCE:** A phone number.

**PROFESSOR:** Yes, it's a phone number. There's no area code, right? Normally we'd have an area code there. So it's kind of referencing back to maybe the '80s? Are you a hacker? Maybe. Probably. Anything else we can get from the title? We're going to come back, I'm going to use this example again, because I love this game. So titles provide clues towards setting, character, action. Even better, while you're thinking of your title, think about what it's like on Google. Think about marketing right now if you're making a game that's going to be marketed to somewhere. Can you Google the title and come up with your game? If you can, you win. It's very hard for some of the games, unless you add a ton of money into it.

Next up is character design. Who's that?

**AUDIENCE:** Sonic.

**PROFESSOR:** Sonic. What does Sonic do?

**AUDIENCE:** Runs.

**PROFESSOR:** He runs fast. What's he doing here?

**AUDIENCE:** Stopping.

**AUDIENCE:** Waiting.

**PROFESSOR:** Yeah, why?

**AUDIENCE:** Because you're not running.

**PROFESSOR:** Exactly right. Wow, I could have written this out. Yeah, he's pissed. He's like, what the hell? Make me move. You're not moving him on the controller, this is his idle animation. So a ton of expressiveness in this idle animation. It's maybe three or four frames of animation of just him tapping his feet, looking at you, breaking the fourth wall.

Some really great stuff you can do with character design in that way. Yeah, like why do we know he runs? If this were like the first time we saw this and this was Christmas Day, back in the time when we didn't find out about games three years before they came out. You get this spiky-haired dude with big feet, right? He's fast, he runs. So yeah.

Back to 868-HACK. As I said, I love this game. Where is the player on the screen? What element of the screen is the player?

**AUDIENCE:** The tile.

**PROFESSOR:** Yes, which one?

**AUDIENCE:** Left.

**PROFESSOR:** Yeah, the top one, right? What are you? What is it doing there? How do you think it interacts within the system? Yeah?

**AUDIENCE:** Walk down and [INAUDIBLE].

**PROFESSOR:** Basically, yeah. Do you see, you see, I kind of said. There's other smiley faces there, right?

What do they do?

**AUDIENCE:** Chase the [INAUDIBLE].

**PROFESSOR:** OK, so--

**AUDIENCE:** [INAUDIBLE].

**PROFESSOR:** Yeah, so there's the purple one, the magenta one, the purple one, the red one. Those are bad guys coming to get you. There's these little ones in the bottom left and right. There's a couple on the top row that say data siphon. That's something that you leave behind. So you're leaving behind a piece of yourself in order to claim space. It's a territory control game where you drop a piece of yourself to consume the things around it. You can consume the programs there and you can use the programs there. But I really like it for this. Why do you think I like it for this? When I'm talking about hackers, when I'm talking with a smiley face, what does that connote to you? What did I hear?

**AUDIENCE:** It's fun.

**PROFESSOR:** It's fun, yeah. Yeah, Matt?

**AUDIENCE:** You're identity-less.

**PROFESSOR:** Your identity-less, right? You're anonymous. I just kind of like that. All right, so moving on. Character design provides clues towards your actions and your verbs, although in that last example, it was actually not very good at that part. But it does give clues towards your background, who you are, what you are, why you are, and then the feel. What's the feel of that game supposed to be. What's the feel you're supposed to have when you're playing the game? Question? OK, cool.

Environmental design is that third thing I talked about. This is Portal, this is when you first start Portal. It's very clean, it's very spacious, except for that little box that you're stuck in. You eventually get out. But something happens and you see something later in the game. Does anybody remember where this is? Oh, not played it?

**AUDIENCE:** I'm like in the middle of playing it.

**PROFESSOR:** Which level? Like three or four, or five or six? Have you seen a turret yet?

**AUDIENCE:** Have I seen a turret? Oh, no.

**PROFESSOR:** OK, all right. Close your eyes, shut your ears. It's 2014, come on. Yeah, so this is the cake is a lie. It's later in the game. It's actually in a part of the game where everything still looks really clean, that's as far as I'm going to go. Somebody left stuff back there. This is actually something that not a lot of players saw when it first came out and then a lot of other players told each other about it later on. So it's also a game event, which I'm going to talk about later when we're talking about the story of the player.

But this is where level design and narrative design meet. So level is created, there's a story moment that had to be placed somewhere, the narrative designer placed it in a spot that was hidden, that was hard to get to, but still reachable. And when we talk about environmental storytelling, we often talk about-- there's been some articles about bad graffiti in games, and just how trite this has been used. We're trying to find new ways of doing the same thing. But it's basically, there was someone in there before you, is what happened there. That's as far as I'm going to go.

Environment provides clues towards what happened in the past, but also what's going to happen in the future. And it provides clues towards the feel, so again, what's this game supposed to feel like? All right, so moving on. We've got the story of the player. So there's the embedded story of the player. And what I mean by that is that's the story of the player that's pre-established by the game.

Has everybody played Ocarina of Time, or heard of it, or seen it? OK. So you're Link, you start out not knowing a lot about the world, and slowly the game lets you know more about what happened in the world behind you. You don't get to choose to have this friend, I don't think, right? What's her name, Saria? The game gave you this friend. And actually, later on, the other friends you get, the game's going to give you those, too. You don't get to choose to have them or not. She gives you this ocarina. The ocarina is a very important aspect of the game.

So in this case, it's this embedded story of here's this object that you're going to use. It's going to be incredibly useful for you later in the game, to the point where you're going to get really annoyed about having to bring it up all the time and play the same song all the time. But it's also part of the character design. It's giving you what your capabilities, like what are you capable of doing?

In this case, you're capable of playing songs on the ocarina that do magical effects within the

game. There's also emergent, and this is the cooler thing that I want to spend more time on. This is the result of the player interacting with the system. In this case, it's Sims 3. And much of the systems of, at least, Sims 1, and I think still in Sims 3, the entire game is basically based on Maslow's hierarchy of needs. So I'll bring up the slide, I think I bring that up in a later version.

Basically, it's a sandbox game. There are things you can do in the game, and the story that's being told is the events and things that happen to the characters based on changes you make in the environment. You're not to get the same story over and over again. You're going to get new stories. Some big. Like in this case, the entire game is that kind of thing. In other games it's more of a smaller aspect of the game, it's an added bonus to the game.

The story of the player in either of those cases is usually told through three things, and these are three things that you can use in your games right now. Game premise, or the goal of the game, is your story, right. Why are you going, where are you going. Game events are things that happen within the game, either predetermined or emergent. And then micronarratives, which I'll explain what that is on at the end.

Here is a premise. Again, we're at MIT so we talk about hacking, right.

[VIDEO PLAYBACK]

-A stroke of genius. A true original. From Introversion Software, the award-winning makers of Darwinia, a futuristic, high-tech computer crime game for the hacker elite. Uplink. You're an Uplink agent, a freelance hacker. Your clients, global multinationals. You hack into rival computer systems, steal research data, sabotage other companies, launder money, erase the evidence, even frame innocent people.

And all from the comfort of your own home. In Uplink, you are the hacker elite. Find more dangerous and profitable missions, change peoples' academic, and even criminal, records, and then siphon money from their bank account into yours. And why not construct the most deadly computer virus ever designed. But watch out. When you're online, you're being traced. Uplink. The game for the corrupted heart, where trust is a weakness. PC Gamer--

[END PLAYBACK]

**PROFESSOR:** Yeah, so. Threw a lot of words at you, but basically every single thing inside of that game is

something you can do in the game. You can hack another person, you can create a virus, you can download their personal records, you can change their personal records. Every single one of those things mentioned in the premise, in the trailer, is a mechanic that is usable within the game in some form.

A lot of it is a user interface. It kind of looks like a futuristic computer terminal or an interface terminal. Made by the same people, if you remember, we showed DEFCON earlier in the semester, same folks. They're really good at that kind of atmosphere, building atmosphere.

**AUDIENCE:** Futuristic for the '90s.

**PROFESSOR:** Yeah, it's still futuristic. So game premise, that's an easy one to get across. Basically, it's just, think about all the things that you do in the game. All those things, when you put them together one by one, that is the story that the player is going to be telling when they play your game. Think of it, in that case, what they're doing is they're using a genre convention and they're using some tropes that you might already know.

Tropes can be useful, tropes can be baggage. Tropes are usually baggage. But genre conventions are great, especially when it's just, I want to get this theme across to you, I want to get this hard punch of you know exactly what you need to do. I don't need to explain the game to you because you know what a hacker is supposed to do. That's where those things are incredibly useful. Give me my slides.

Game events. Has anybody played Final Fantasy 4? Or 2, if you played the original, or the US version, I mean? So there's a character called Rydia the Summoner, that is not what she looked like in the game. That was the illustration that she looked like. She looked like a very small green haired person. She is a summoner, she has magic powers. What kind of magic powers are common in the Final Fantasy series? What's the three basics?

**AUDIENCE:** Fire, ice and thunder.

**PROFESSOR:** Yeah. Or blue or, yeah, fire, ice, and thunder. Exactly right. So she's a summoner but she has other black mage powers. Pretty common, most characters would have those three powers. Except for her. She hates fire. You don't have fire for a good part of the game. There's a moment in the game, you're at Mount Hobs, there's an ice mountain, you need to get through. You can kind of see ice in the background there. You need to get through the cave, and there's a story moment.

One of the characters, Cecil, on the left there says she's afraid of fire, because her village was destroyed in a fire. And you see a snippet of this early in the game. You get moments that she's got this backstory where traumatic past, it's preventing her from doing a thing. Again, this is a trope that's pretty common. After this point, they're all like yeah, you can do it, you're awesome, you're great. And then she gets fire, now all of a sudden you've got the fire skill for this character for the rest of the game.

Any time you play the game after that and you're using fire, there's some part of you that might be remembering this story moment and how important the story moment was. It's being linked back into the game mechanics really, really well. But it always happens. Every time you play the game, that's embedded. That's always going to happen. One more video. Here is an emergent event. Has anybody seen this video? Everyone recognizes the game though, yeah?

[VIDEO PLAYBACK]

-All right, guys. And just for video here, I'm getting some mushrooms on hand to make indefinite fire.

**PROFESSOR:** So indefinite fire, that's cool.

-[INAUDIBLE] or a castle. [INAUDIBLE]

**PROFESSOR:** Here comes the room.

-The bedroom. [INAUDIBLE]. So let's go ahead and just make a fireplace. They're already made it, as you see, is intact here. That's the swimming pool. So yeah. Now all you need is some flint and a log, and just to chop down a tree to get a log. Oh yeah, [INAUDIBLE] and to the fire. And I always, or mostly-- uh oh.

**AUDIENCE:** I knew that was going to happen.

-Crap.

**PROFESSOR:** He gets some water to try it.

-Uh oh. Sorry. Sorry guys. This was not supposed to happen. And--

-Yeah. What the hell just happened.

**AUDIENCE:** Fire.

-You have got to be kidding me.

[END PLAYBACK]

**PROFESSOR:** There is a system within the game that fire burns pretty much anything it touches, that's wood, and it just travels, right. You set this little system up, you use it the way you use it, and in this case, he tried to tell a story of building a fire, and it turned out he burned his house down. You also see this Minecraft, the Creepers. Everybody hears that hiss of a Creeper, especially after you've built something. You've got this tension, this moment of panic. That's all a memorable game event that you're going to tell another person after you've played the game. And especially these days, you're going to record it onto YouTube and put it online. This was, I think, from 2010, because it's an alpha build of Minecraft.

Continuing on the theme, here's the Sims. Has anybody had this happen to them in The Sims? They're just trying to have a party, they're trying to meet their Maslow's hierarchy of needs, right? They're trying to love and belong to each other, and build some esteem, and self-actualize themselves, but they forgot about the safety part of it. So the oven blew up and their fire happened, and they all burned and died. Common trope with The Sims.

Another example I love. Anybody played Far Cry 2? Yeah? So fire exists in Far Cry 2. I love fire. Far Cry 2 takes place in Africa. You're a mercenary, you're going to find a warlord and kill him at the end of the game. That's basically what you're trying to do. You have different ways of doing that, different means of doing that. You are in the savannah, it's very dry, you can burn the savannah, it's great. And you can use that to get past machine gun emplacement, or set a trap for somebody. In game character, not another PC, but in game.

In an early version of this, an early test, playtesters set fire to the savannah, and then 10, 15, 20 minutes later it said OK, you won the game. What happened? Fire spread. The boss was set in the fire, in dry grass. The fire spread all the way through the game, the many, many miles, square miles of gameplay, and it killed the boss and ended the game. I really wish they had kept that in, or a version of that.

They ended up reducing the spread of fire because of that, they moved the character from it. But that's a game event they could have capitalized on. That's a piece of emergent storytelling that's going on that people tell the story to each other. In the developer circles I heard about

this in GDC the year after this came out. That's a great one. So that's game events.

Next up micronarratives. These are similar, but different. A micronarrative is basically a little bit of storytelling inside of the game that, again, really, really small. So maybe it's an animation. In this case, this is Jet Set Willy. In Jet Set Willy, you are a rich guy. You made all your money in the previous game by mining, and you came home, and you've invited a bunch of friends to your house and you had this awesome raucous party. And you trashed the place.

Unfortunately, you rent. You rent a mansion instead of buying a mansion. And you're trying to go to bed, and your landlady is just like no, you don't get to go to bed, you don't get to sleep. You've got to clean all this stuff up. She doesn't say any of that, though. This is all she does. Just, she's standing in front of the bed, she's going that. This is for the ZX Spectrum. I think it had 64k of RAM, maybe. You can look that up. Maybe it's 8k, it's really small. Really bad keys, really bad keyboard. Not a lot of graphics. That version is actually a later version, I couldn't find-- this is the closest thing we found for what it originally looked like. You can really see, there's character design there, but it's also just saying no, you can't come back here.

**AUDIENCE:** 16k at launch, it did go up to 128.

**PROFESSOR:** Now that I've spewed all this out, what can you do with all this? So I'm actually going to show an example of a game created last semester by a team in this class for the final project. They made a game called Sugar Rush. What's the game about? First, what's the title? Well, I told the title. Sugar Rush. What's the game about?

**AUDIENCE:** [INAUDIBLE].

**PROFESSOR:** Yeah, candy, candy, candy, candy, candy. Look at him and all that candy. And it's a kid. So title, character design, all working really well right there. Here's the game premise. One day, strange leafy beasts spawn from four mysterious portals, and they plundered the villages, terrorizing Candyland. What do you think you're going to have to do? Kill the vegetables. And they're mean, because look at them. So mean.

Now, when we say, we said don't use cutscenes, that doesn't mean we say don't use exposition. A simple screen with a little bit instructions. Basically, we told them, have an instruction screen. This was part of their instruction screen. They had the screen that says these are the keys, but also, this is what you do. Really, really useful. We want something that fulfills that for a game the way it's necessary for your game.

The difference between a game that has something like this and doesn't have something like this, is basically it's a level of polish. A game that has a little bit of exposition like this feels a little bit more concrete. It just feels like it's more complete, there's more thought put into it. It just feels a little bit richer. It's still playable without it, it doesn't need this screen, but this screen's really, really helpful. And the game play itself. It has mechanics that are consistent with the design.

You are a kid, you are fighting a tomato. What do you fight with? You have weapons, what are your weapons made out of? Candy. How do you heal yourself? You eat candy. How do you make new weapons? You combine and craft candy. Everything's revolving around that premise of candy is the world. You are the lone human being in this world that we see. And so it's not like Adventure Time, you're not harvesting candy from candy people.

The weird thing about it, I think you when you kill vegetables, you take the candy from them. Maybe they're stealing your candy? Yeah, you are stealing the candy, it says plundering. A ha, they thought ahead. And yeah, the health points. What are the health points called, if you can read it?

**AUDIENCE:** Blood sugar.

**PROFESSOR:** Yeah. Really simple stuff. Really, really simple. Just theming it, thinking about what you call things, how you call things, where you place things, what verbs you're using. All that ties into the game. Here's another student made game, it was actually made by a larger team over the course of the summer. So they actually had nine weeks to make the game. And they had dedicated artists on this game.

But this is a game called Gumbeat which we have our website there. You are a little girl going around chewing bubblegum in this idyllic land that, I don't think, there's an information sign up there that says keep the place clean. Basically, gum's not allowed. It's not clean. But you go around, you recruit people. You blow bubble gum in front of them, they say pop the bubble, you pop it, they're like sweet, I'm joining you. And then they trail behind you. And you see on the right there, a little guard. Metal Gear Solid style, he's got his own line of sight, if he sees you, he's going to chase you down and hit you.

Early in the development, someone-- so if you pop the bubble on somebody, like on your friend, they'll get stuck with gum. You pop the bubble on the guard, they'll get stuck with gum

and they'll not be able to move. But we found if you put the bubble gum on the guard, and you have a guard, basically a second guard looking for people, all the AI was was if gum, attack. Guard with gum found the guard, attacked. They didn't even think about this, this wasn't a feature they were planning, it just happened. And it happened in the space of gameplay, play testing, just like that fire in Far Cry 2.

Except in this case, they're like, that's really freaking awesome. We are going to polish the crap out of that and make that a really interesting feature in the game. We're not going to tell the player how to do that, but we are going to create a level design that encourages the player to experiment with that. So that's where you get that kind of game play. So play testing is a way to discover emergent game events.

So that's why we're asking to play test your game, especially people who are not you, is to see what-- you've created this amazing possibility space, you can't explore the entire thing on your own. They might see something and not knowing what the game is possible to do and what you should be doing in the game, they might come up with some cool things to do in the game. So play testing is key.

Lastly, not a student game, but another favorite of mine, FTL. There is a story to FTL that's really complicated, and I'm not asking you to try to emulate that sort of thing. It's really hard. It's a lot of detail and it's a lot of writing. A lot of thought being put into this randomized event thing. But there's a feature in the game that I'm showing here right now that is only used on this screen. It's probably kind of-- it was probably a high price for them to put the feature in. Can you-- maybe you can't read it. Actually, you can't read it that well.

Basically, you can change the name of the characters. This is something that strategy games have had for a long period of time. I think we remember through XCOM back in '93, '94. Earlier? No, '94. So you name your characters. If you name your characters, you might be more inclined to make stories of their game play. So I've got my ship as the good ship GameLab with my buddies Andrew, Philip, and Sarah, and we're going to be awesome and take down-- are you taking down the empire? I can never remember. Empire or rebel? Are you a rebel or are you the empire?

**AUDIENCE:** You are a rebel.

**PROFESSOR:** We're the rebel, OK.

**AUDIENCE:** No, actually, I think you're--

**PROFESSOR:** Yeah, you're the empire. You're trying to take down the rebels.

**AUDIENCE:** You have to run from rebels.

**PROFESSOR:** Yeah. OK, cool. So one thing that sometimes happens with this game, though, some players are going to optimize it. What did they name their characters? Pilot, Shields, Engines. Who's dying? Looks like the pilot's dying. How do you know? It's named Pilot. I forget if you can-- I don't think you can rename characters when you bring them back on your ship. I should have looked that up. If anybody plays, take a look at that. But you can get new characters later on. Whether or not you can name them or not, you might name them, you might not name them.

But either way, they've spent a lot of time and money putting this feature in, some players aren't going to use it. So what do you do? You blow shit up. The game is basically about traveling the ship, things catch on fire, and hopefully, maybe they're not concerned about Pilot, but they are concerned about their ship. So give them these cool little game events to keep them going.

**GUEST SPEAKER:** So one of the interesting things about this kind of story is that it's actually-- for all that you're talking about, it does take time and money to create it, but it's actually pretty cheap to be able to let players name their characters. But it's even cheaper to do it, FTL did at the beginning, where they automatically name all their characters. When you get a random human, the character isn't named human number 38, the character is named Fred or something.

And that was actually originally from the Kickstarter. Backers got to have their names in, which is kind of cool. But it's actually worth doing, because there are certain kinds of players who will really get into those names in a way that you don't expect. I've got two friends who really get into their games. One, Marc LeBlanc, was playing XCOM. Some of you have seen the more recent XCOM, I assume? But maybe not the old one? So you can name your characters or whatnot. And it gives you some names that you can use. He had went through the entire game, and this is back when games were hard, so 40 to 60 hours of gameplay, and he had a squad of super uber soldiers. They all had names. He didn't quite have personalities for them, but they were kind of like personalities.

And the second to final battle, one of his top A squad people got a broken leg or something. And he was like, oh, that's really annoying, because I'm going to Mars tomorrow. Well, all my

guys that are high level are gone, but I've got these guy's really cool equipment. Like he'd got the laser rifle of doom and the super uber armor, and so he went to his second string squad, the guys who were second level. He was like you, suit up, son, you're going to Mars. Which for him was a story, and it was all inside his head. The game didn't make that. The game did not make that story. The designers could not have anticipated that story. But in his head, because he's the kind of player who really tried to personify his characters a little bit, it was actually a really big thing for him.

Similarly, another one of my friends, who will probably come in for a lecture later, Laura Baldwin, was playing XCOM as well. Basically the same game. She, in her head, kept all the default names. The default name is a randomized first name and a randomized last name. And in her head, when she saw the same last name, she assumed that meant the characters were related. Now of course this meant nothing in the game, the game didn't care. But here are the two brothers, here are the two sisters, here's the married couple. And so apparently in the final, final battle, you're going in to destroy the big bad thing, and the big bad thing does horrible psychic damage to all of your soldiers on the map every turn. And she was losing horribly. And the husband and wife team made it into the final room with the big brain alien, and the wife runs in and discovers the final boss.

And in XCOM, you had movement points. So she went in and revealed the fog of war, here's the bad guy. She has not enough movement points to run away. And the husband, meanwhile, is at the doorway with a rocket launcher. And so apparently, Laura, the way she tells it, she spent about 15 minutes having a conversation between these two characters. As the husband's like, I've got a rocket launcher, get out of the way, honey. And she's like, I don't have enough movement points, fire the rockets. I can't. I'll kill you. I'm going to die anyway, fire the rocket. And this goes back and forth until finally she decides all right, boom, fires the rocket, kills the person next to the big bad guy, and wins the game.

But again, this is because you had a player who's very cooperative, something as simple as the names actually helped. Now, you can't guarantee you're going to get players like that. But those players do exist. And if it's easy to give them the opportunity to have that awesome experience that she tells 20 years later, do it. It's relatively cheap.

All right. That's it for lecture. Any questions about any of this stuff and how it applies to your games? Anyone have an idea what they can do in their game right now just thinking about any of this? Has anybody thought about their title, at least? Yes, now. OK. All right. So take a

couple minutes. It's 2:03 right now, break. Work in your teams, whatever that might be. We've got a test coming in at 3:00, so be ready for the test at 3:00. I'll remind you maybe five minutes beforehand.

**AUDIENCE:** [INAUDIBLE].

**PROFESSOR:** So everyone, raise your hand if you are ready to test at a workstation, if you are ready to test. So I can count off. Two, three, four. One, two, one, two, kind of. All right. You get two more minutes. Philip, you want to talk to?

**PHILLIP TAN:** May I speak to Ed's students, I don't know if you're scattered around, but it would help if you could meet up here. You one of them? Yeah, you can come here. So the first thing I want to say is thank you so much for coming and you may have overheard what Rick was saying earlier, this is going to be our first digital playtest for the games. There are five games, some of the teams have multiple stations, and there's probably not going to be enough computers for every single one of you who are here.

So some of you may be waiting in line, but please be patient with us, and we'll hopefully get your feedback on at least one or two games, if not more. It's good for you to give us feedback while you are playing the game. So if you are-- and the students will get more specific about the kind of feedback that they need. But if something's frustrating, if something's confusing, if something's intriguing, or you really think something looks cool or is an interesting decision, try to verbalize it so that we can actually realize that something's working or something's not working.

Don't worry about our egos at this point. We absolutely need the harshest criticism that you can possibly give us at this point, because it's easy for us to change things at this point of our project. If we learned about the same things that bother you two weeks from now, reversing all of those changes is going to be harder. So please be harsh now. Other than that, if anything is confusing, do of course vocalize it.

But the people who are making the game may not tell you what to do next, because they want to see if you can figure it out. If you can't figure it out, that's not a problem with you, that's a problem with the game. But they need to be able to see you sort of muddle through what's already there in order to figure out how to fix it later. So if you do start getting frustrated, of course, you can always say, I'm done with this game and move on to another game.

**PROFESSOR:** That's a very valid datum. That's a very valid datum.

**PHILLIP TAN:** Yeah, that's very valid data. It's like, I'm done, no more. That's absolutely fine. It would be great to be able to then tell the students why you're done. Maybe it's because you feel like you've seen everything there is to see into a game, and that's very different from, I have no idea what's going on. That's two different reasons to leave a game, and they need to know what that reason is. Otherwise this, by the way, it is Creating Video Games. It's 6-- what's the course number?

**PROFESSOR:** 6073.

**PHILLIP TAN:** 6073 or CMS 611. As a course it is joined humanities and computer science. And it runs the full semester, students actually work on four projects for the entire semester. But the first three are really, really short two week projects, and this is kind of like the mega big project.

**PROFESSOR:** If you have questions about the class, feel free to grab us. We're the instructors, we can answer those questions for you.

**PHILLIP TAN:** This is Rick, I'm Phillip, you all know Ed, and Sarah and Paulina are over there. Just look for any one of us and we'll be happy to help.

**PROFESSOR:** So playtest workstations, stand up if you are a computer that someone can come to to play your game, and testers in the back, stand up if you are a test station. And testers please go find a standing person and play their game.

**AUDIENCE:** See what's currently active on the sign.

**AUDIENCE:** OK. And it's going to come up.

**AUDIENCE:** So for improvements, I figured out what to do. I think the instructions are clear this time.