

Game Design

Introduction

Ever wondered how your favorite videogame was created? Ever wondered how to create your own videogame? In its simplest form, a videogame starts with an idea that seems like it would be fun to play. It doesn't matter if you are designing a complicated game or a simple game - all require you to focus on what would be fun to play, and then figure out how to make this idea turn into a reality.

Workshop Goal

I will attempt in this Game Design Workshop to provide you with some insight into how I design videogames. I will also include links to articles and interviews from other peoples' perspectives. By spending some time reading and thinking about the information you encounter, you should either become more interested or less interested in becoming a videogame designer. My hope is that you will want to learn more about the wonderful world of videogame design. Ready? Here we go...

Your Development

There are many ways to design a videogame, and you will ultimately need to decide on what ways work best for you. Part of the reason the process of making a game is called "game development" involves not only what you are developing as your "game", but also the "process" by which you make it. You will need to adapt your style of developing to the team or company you work with, too. Sometimes there are formats or methods you'll need to follow in order to get your job as a game designer done properly. Think of it all as a learning experience for you to improve your skills and knowledge as a videogame designer.

A Career

You can make a very good living as a Game Designer. If you're interested in learning more about how you can enter the industry, what skills you might need, or just an overview of the whole process, the following forum post includes some links to additional information:

<http://www.senntient.com/forums/viewtopic.php?id=191>

Questions or comments about this document? Visit the forum and share your thoughts:

<http://www.senntient.com/forums/viewtopic.php?id=268>

My Process

STEP 1: BRAINSTORM

Every game needs to be based on at least one good idea. To figure out what this idea is for your game, you should first start by doing what's called "brainstorming" - a process of sharing many ideas; some good, some bad, some that would never work, some that might, and so on... You should think of new ideas without judging them. Avoid the "oh that idea stinks" or "I (or we) could never make THAT idea work!" syndrome. This process can be quick or take awhile, but your goal is to exhaust your imagination so you simply can't think of any more fun ideas.

You can brainstorm about anything: A character's ability, an action the player would take, a way of being rewarded for doing something, a puzzle to solve, the sound an enemy makes when it is crushed by your warhammer...

It is important to find a way that works for you to record your brainstorming. You can write notes on paper (or a napkin), type on a computer, draw on a dry erase board, tape record yourself talking or acting something out, etc. You'll need to experiment to find the ways that allow you to feel the most comfortable and to be your most creative.

If you find yourself running out of ideas, it can help to get someone else involved. Know anyone creative? Brainstorm with them – over the phone, through instant messaging, or in person. Whichever way you do it, make sure you have a record of it.

It's important to be playful and energetic with your ideas. There should be no limits on what you think of. Don't worry if someone has already done it before. Don't worry what other people will think of the idea. Don't worry about how much effort it might take to actually create the idea.

Once you have exhausted yourself with brainstorming, and if you want to take a break, do so. Some time away from your ideas (and not thinking about them) can be a very good thing. It's called "perspective". Perspective can allow yourself a rest and to take a subconscious step back from the details to see whether the overall ideas are really fun or not.

STEP 2: REVIEW

Brainstorming is about an explosion of ideas. So once you've had your "explosion of ideas", get some perspective, and approach your ideas again. Now you'll review them all. Which ideas seem like the most interesting and fun? Set these ideas aside from the rest. Summarize them so they are expressed in as simple a way as possible. For example, if your reviewed idea was originally something like this: "the player controls a giant, multi-turreted tank that crashes through cities and upgrades its weapons to be massive, destructive guns leveling buildings"... you could trim this to something like, "giant, multi-turreted tank destroys city

buildings with massive, upgraded weapons”. You can create a simple list of ideas that your eyes can quickly scan. You’ll want this so you can proceed to the next step more easily.

STEP 3: EXPAND

Of your most interesting ideas, which of them seem like you can expand on them? For example, if you had an idea for a character ability that would allow your character to read minds... how could this ability turn into fun and interesting gameplay? What are some situations you could use this ability in that would be memorable for the player? Take the first of your best ideas from Step 2 and brainstorm it. What are more ideas that relate to this idea? Maybe some of your ideas will expand on this idea. Maybe your ideas will take your imagination someplace else. Keep track of which of your original ideas yield the most brainstorm ideas, because those will probably be ideas that could prove to be better. If you take an idea from Step 2 and find it doesn’t take you anywhere, don’t worry and move on to the next idea in your line-up.

One way to expand on your older ideas is to share them with a friend. If your friend finds it interesting, this might turn into a brainstorm session. Again, make sure you find a way of either recording this – or documenting shortly thereafter. You’d be amazed how many ideas you can quickly forget! ...even if they’re cool!

STEP 4: REGROUP

By now you should have a bunch of ideas. Some of them may relate to each other, others may be completely unrelated. Which of these ideas seem like the best? Which work together the most? Pick your top three ideas and put them together on a single page. Now, remove all parts of the idea that other games already provide for players... what is left? Anything? If there's something... is it fun by itself? If you believe it will be, focus on that "nugget" of fun... take that nugget and polish it... think about it some more. Do a focused brainstorm using that idea as your topic (so all ideas you come up with relate to it, support it, expand on it, etc.). Make this nugget the top of the pyramid so that the rest of the pyramid falls from and relates to this simple idea or concept.

For one of my independent videogames, I established a nugget I thought was very compelling: Transforming robots combine to create new gameplay. Why did this idea excite me? Transforming robots. Cool, but done before... Combining? Cool! But done before... Transforming robots that combined together combined two cools that I hadn’t played in the same game. Put that into a team competition environment and BAM! I was hooked on this idea. http://www.senntient.com/hire/s_sk.html

STEP 5: VISION

If you went far enough with the previous step, you should be ready to define the “vision” for your game. The vision can be shared in a one sentence description explaining why your game is special. You will use this one sentence to answer many design questions you will

have throughout the course of your game development. In the television and film industries this “one sentence” is called a Logline. Here are some examples of loglines for shows (try to guess which shows these apply to):

- "Ordinary people face their fears by competing against each other in outrageously devised stunts"
- "A likeable husband's tolerance and marriage is tested by the constant intrusion of his overbearing parents and dim-witted brother"
- "Twenty women will court and compete to win the affections of one man who will narrow the selection until he must decide on his one true love."
- "Contestants' general knowledge will be tested when given the answers to questions they must then form."
- "Aspiring singers will compete in a nationwide talent search on live television where they will face the often unfair scrutiny and sarcasm of a panel of judges before one is finally branded the "American Idol", receiving a recording contract."

If you couldn't guess which shows the above loglines could apply to, they are: *Fear Factor*, *Everybody Loves Raymond*, *The Bachelor*, *Jeopardy*, and *American Idol*. (NOTE: These logline descriptions were googled)

By defining a logline for your game, you are setting up a simple structure within which you and your team can be creative, stay focused and continue in the right direction, and ultimately market your game idea to get people excited about it (imagine having to speak for 10 minutes just to get your idea across... you will lose the person's interest after 30 seconds!).

LOGLINE TIPS

- http://zakka.dk/euroscreenwriters/articles/writing_a_logline_544.htm
- <http://www.scriptologist.com/Magazine/Tips/Logline/logline.html>
- http://www.writersstore.com/article.php?articles_id=231
- http://library.creativecow.net/articles/gregory_browne_rob/logline.php
- <http://www.breakingin.net/logline.htm>
- <http://twoadverbs.web.aplus.net/loglinearticle.htm>

STEP 6: PITCH

Share your idea with friends you can trust. What do they think? Are they excited about it? Do they offer their help? If so, you might have something! On the other hand, if a person or people you share your idea with don't "get it" or like it - this DOES NOT mean that your idea stinks. If you really believe in your idea, do not give up!

One of the best results of pitching your ideas to others is your own critique. As you speak your idea (and you should definitely say it out loud as opposed to simply handing a document to someone), you will hear yourself speaking the idea. Weaknesses in your idea, problems, inconsistencies, etc. will become much more apparent simply by sharing the idea verbally. This self critique is invaluable. In addition, you get the benefit of your friend's reaction and any additional ideas therein.

Pitching your ideas to your friends and family can help you, but one of the best audiences to pitch your ideas to are people who either make games for a living or play many different kinds a lot. Either way, you will get feedback from a developer or from a consumer that can help you shape your idea into something more realistic and appealing.

PITCHING TIPS

- <http://www.scottberkun.com/essays/38-how-to-pitch-an-idea/>
- http://www.businessweek.com/smallbiz/content/mar2008/sb20080314_235844.htm

STEP 7: DOCUMENT

Now that you've had a chance to develop a vision for the concept of your game and share it with others, now you need to sit down and start detailing a plan that will help turn your idea into an actual game. This single step requires a tremendous amount of work, and sometimes is necessary to do in order to generate your game's "vision" (or logline). The information you plan here is essential before any game can become a reality. Here are some of the components you will need to incorporate into your Game Design Document:

- **GAME MECHANICS** – The Game Mechanics define what a player does in your game, regardless of whether it is a puzzle game or a massive multi-player online dungeon crawler. Actions your player can take, either all the time or in specific situations are defined here. Can you play as different characters? If so, under what circumstances? Can your character upgrade? If so, how and under what circumstances? Your Game Mechanics section must clearly define anything and everything your player can accomplish. Think of your mechanics as Lego pieces. The next section called "Level Design" is reserved for the arrangement of those Lego pieces in your game.
- **LEVEL DESIGN** – Now that you have game mechanics listed and defined, you know what the player will be able to do and need to map out your game mechanics in sequences for the player to encounter. Level design will determine the flow and tempo of the game, so you'll want to provide some variety for your player so they don't get bored. See the [Level Design](#) section for more information.
- **USER INTERFACE** – The User Interface defines how your player sees the world. Score, objectives, health, inventory, etc. all are elements you'll need some form of indication on-screen so that the player can keep track of them. You don't need an

old-fashioned graphic to indicate your character's health, though. You can be more clever and show this through your character that the player sees. To indicate health, perhaps your character hunches over more, bleeds more, limps more, coughs more, etc. to show that he or she is "losing health" – rather than a classic "health meter" displayed on top of the action. You will need to think about your ideas and decide on which of them require any sort of interface indication in your game.

- **STORY** – I list this last because unless your game is based heavily on storyline, your game design document shouldn't focus on the story. However, you will need to define some sort of story for your game. Even if you thought of a simple puzzle game you'd have some loose story to establish an overall goal for your player.
- **CHARACTERS** – Who are the characters (if any) in your game? Who is the hero? Who is the villain? Who are the additional characters your players will encounter throughout your game? Friend or foe, you'll need to list and define these characters.

Writing a Game Design Document is a time-consuming process, so I would recommend learning more about what to write and how to write it. The following section provides some links to additional information you can learn about concerning Game Design.

Game Design Links

GAME DEVELOPMENT INTERVIEWS

- <http://www.autoassault.com/us/devcorner/>

GAME DESIGN ARTICLES

- <http://www.gamedev.net/reference/list.asp?categoryid=23#122>
- <http://www.animationarena.com/video-game-design-articles.html>
- http://www.gamasutra.com/features/20030815/kennerly_01.shtml
- <http://www.fabjob.com/videosample.html>
- <http://www.canada.com/topics/technology/games/story.html?id=33d94b5f-fd68-4be7-9cbb-c5954055f36b&k=94703>
- <http://makeitbigingames.com/>

GAME DESIGN DOCUMENTS

- <http://www.gamedev.net/reference/list.asp?categoryid=23#121>
- <http://www.gamedev.net/reference/articles/article1965.asp>
- <http://www.sloperama.com/advice/specs.htm>
- <http://www.runawaystudios.com/articles/ctaylordesigntemplate.doc>
- http://videogames.lovetoknow.com/wiki/Basics_of_Video_Game_Design

SAMPLES OF MY GAME DESIGNS

- <http://www.senntient.com/hire/samples/index.html>

Level Design

INTRODUCTION

"Level design" means laying out a level from a concept down to the tiny, necessary details that will theoretically make the level fun and engaging. Whatever is necessary to convey this will work... a top-down map, a 3/4 isometric map, a 3D mock-up with renders to see it at different points in the level... whatever you need to do so the team knows what needs to be done. Knowing what is fun or not is a process of trying, failing, trying again, succeeding a little, trying again, learning some more... ultimately leading you closer to a level that is more fun so you can then polish it and make it all pretty looking.

Here are some elements you will want to make sure you define with the level design:

1. OVERALL GAMEPLAY

Is this a level devoted to promoting one main gameplay? Or a few? What are they and when do they occur? Try to estimate how long the player would do each so a map can be created accordingly. The times will change, the map should be updated, once it is imported into the engine and played - rarely, if ever, is a map directly translated into a final level design. You'll want to try and keep things fresh for the player by not using the same gameplay over and over again... mix some speed with exploration... then some combat... then some speed... and so on. This is the general planning stage of level design.

2. MECHANICS

You'll want to detail out each type of gameplay, or mechanic. Sometimes it's helpful to do this without any map - but thinking about each mechanic on its own, then piecing the different mechanics together into a sequence - then creating a map that incorporates them. For example - let's say you want to have an insanely fast start section of tubes and loops, followed by an aerial section of springboards and launch pads, followed by a dive into the water trying to collect rings, followed by a slower puzzle section to open the underwater gate, leading to the flush out of water from the well that launches Sonic into the air to land with his feet blazing to spiral up a corkscrew... and so on. That's a lot of stuff, first of all, but I wrote it to illustrate the idea. You can switch the order of those... start out falling from the sky into the water then launch up into loops and so on... You can do this EASILY before you ever make a map. The map should support these mechanics by executing them at specific spots on the map. You don't want a map that is too big or too small... too densely populated with gameplay, but also not too sparsely...

3. DETAILED MECHANICS

Now that you have a plan of mechanics, you want to string them together and give them a visual map so a level can actually be created. You'll want to provide even more detail to your mechanics here - which might include a separate document listing the mechanics, what

is fun about them, what is needed to make them happen, etc. To help answer these questions, more detail for each mechanic is probably necessary. That opening speed section I mentioned above... what is involved to make it a "speed section"? Is Sonic just rocketing past a blur of a background? Or is he jetting through things? Maybe things the player wants to aim to get through for rings or points? This is gameplay... this is providing the player with a reason to do something. Does the player want to hit this spring... then that particular one to get to the higher section which has a platform full of rings as a bonus? Or does Sonic want to rocket into the cannon that the player can aim and then launch to (like Mario) hard-to-get-to places? Where are the rings supposed to be? What about enemies? What does the enemy do? Does it move? If so, where and under what conditions? See how these are supplying more details than just "speed section"? You can still plan these without even making a map! (making a map then coming back to these and changing them will most-likely need you to redo the map... so why waste time making the map until you are ready???)

4. MAP IT!

Now take all of the mechanics and their details... and draw a 2D map (or build a 3D one) that has them all in it. Will the player follow the path(s) you've defined? Or will this map design allow the player to break the progression you had planned? Can they cut across a section you hadn't considered they would? Answer is: They will. So don't worry too much about it - put a map together that at least incorporates the mechanics. Consult with whoever is responsible for making the 3D terrain and objects based on the map. Once you make a map that incorporates your mechanics - you TEST IT... immediately!

5. TEST IT!

Play the 3D map. Play it some more. Talk about it. What was fun? Which mechanics need work? Were there boring spots with nothing to do? Was there too much to do? Discuss all of this - because if you feel it, someone else playing your game is bound to feel the same way.

6. TWEAK

Take all gameplay suggestions, directed by design, consulting with programming, art, animation and sound - and tweak the 3D map. Get it back into the engine... and play it some more... everyone play it... how does it feel now? Repeat steps 5 & 6 until the deadline.

7. POLISH

Only polish graphics and animations once it is fun. Next, take the sections or areas of your level that you believe will not change too much, and allow art, animation, and sound to polish their work. If you polish too early, it will be wasted time. Wait until it is fun before worrying about making it look and sound cool... get the fun factor first... the function... then worry about the form and polishing it.

Level Design Links

MISCELLANEOUS

- http://en.wikipedia.org/wiki/Level_design
- <http://www.adigitaldreamer.com/articles/video-game-level-design.htm>
- <http://www.telefragged.com/search.php?searchProcess=1&search=level+design&searchType=Any+Type&x=0&y=0>

SAMPLES OF MY LEVEL DESIGNS

<http://www.senntient.com/hire/samples/index.html>

SHREK 2 - http://www.senntient.com/hire/s_shrek2.html

Take a look at my Shrek 2 level designs. They're a bit old, but this will give you an idea of what I did four years ago for a level design document. If you've played the game (the design is catered to the PS2 version - not the XBox or Gamecube), even better - because you can remember how it played and see the documentation that went into it first. Specifically, check out Level 02 (Spooky Forest)... this was created with a few points in mind, including:

- Spooky forest setting not based on the upcoming Shrek 2 movie (well, upcoming at the time tongue1), but on the Universal Studios Shrek 4D Ride which had a spooky forest setting.
- Wanted to have the Gingerbread House on top of a hill that the player could see at many points in the level - from level start to finish.
- Needed a special Hero Time to highlight one character so they could be the "hero of the hour"... chose Donkey riding Dragon as your "character" to fly through tunnels chasing Fiona in the runaway carriage.

Now, the important thing about that level? I designed all sections with separate "mechanics" first... on post-it notes... then put them down on the floor in a sequence to think about their order and general position - then I laid out the actual map... which I created later in 3D before giving it to art to create the pretty version.

COD: FINEST HOUR - http://www.senntient.com/hire/s_cod.html

This level design is very general, but shows more use of individual mechanics strung together for a mile-long jeep ride level. (Note: This design was done super quick - a team of 6 of us were shipped to a remote company for 4 months where we had to learn their complicated tools, design a level, and finish it to help them finish the game...)