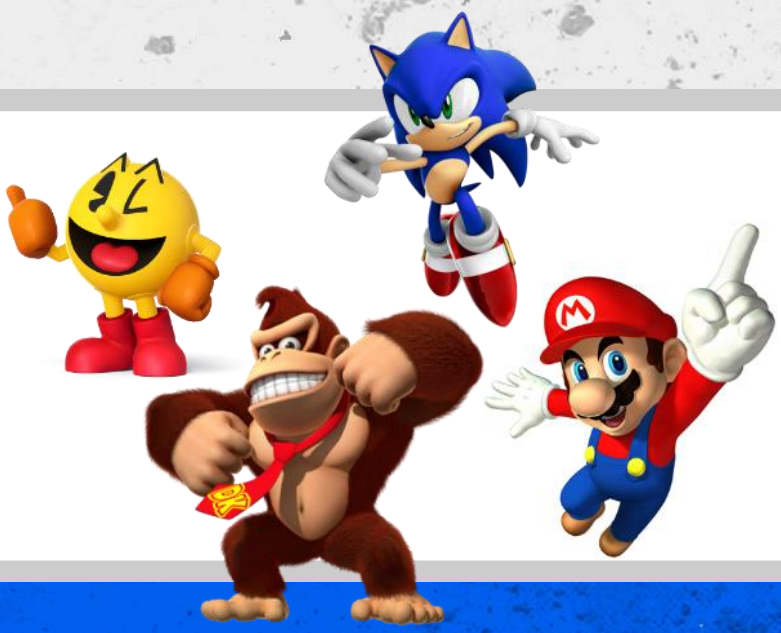
Mr. Giansante



Game Design

February 2016

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Assignments

PRINTING

Please consider the environment before printing anything from this document.

Pages that need to be printed are marked with a printer icon.

Fun Facts about Video Games

> "A lot about games isn't how perfect your code is, it's about how it it feels and how much fun it is."
>
> **— John Vechey**
> PopCap Games co-founder

#HourOfCode

Elements of Game Design

Game Development is the software development process by which a video game is developed. Development is undertaken by a game developer, which may range from a single person to a large business. Mainstream games are normally funded by a publisher and take several years to develop. Indie games can take less time and can be produced cheaply by individuals and small developers. The indie game industry has seen a rise in recent years with the growth of new online distribution systems and the mobile game market.

Mainstream games are generally developed in phases. First, in pre-production, pitches, prototypes, and game design documents are written. If the idea is approved and the developer receives funding, a full-scale development begins. This usually involves a 20 - 100 man team of various responsibilities, such as designers, artists, programmers, testers, etc.

Source: Wikipedia.org - Video game development

Game Design, a subset of game development, is the process of designing the content and rules of a game in the pre-production stage and design of gameplay, environment, storyline, and characters during production stage. Game design requires artistic and technical competence as well as writing skills.

Source: Wikipedia.org - Game design

Components of a Game

A game is made up of elements that work closely together.

Space	The look and feel of a game come from the design of its space.
Compontents	Compontents are the parts of your game like your avatar, blocks and enemies. These are known as "nouns".
Mechanics	Mechanics are the actions in the game like jumping or collecting. These are known as "verbs".
Goals	Players try to achieve goals to win the game. Victory Conditions - Actions that will result in a player(s) winning the game. Failure Conditions - Actions that will result in a player(s) losing the game.
Rules	Rules guide the player on how the game should be played.

Source: GameMaker documentation, FETC 2012 Presentation

What Makes a Good Game?

Challenge vs. Reward

The best games balance challenge and reward.

Bad video games have too much challenge and/or little reward.

Good video games also have "**replay value**". In other words, something about the game makes players want to play it many times.

Payoffs / Rewards

- Reach a New Level
- Complete a Quest / Mission
- Gather Resources or Points
- Extra Turn / Free Play
- Medal or Trophy
- New Vehicles / Weapons
- Upgrade Vehicles / Weapons
- Ability to Purchase New Items
- Unlocking Secret Levels
- Unlocking Playable Characters
- High Score Table

Rules

- Increase Player Satisfaction
- How to Play / How Not to Play
- Prevent Cheating
- Increase Fairness
- Provide the Right Information to all Players
- Player's Strategies will be based on using the Rules

Consequences

- Penalties
- Lose Life Points
- Start Level Over

Much of the text above is taken from this image.
Image Source: http://projects.cbe.ab.ca/glendale/showcase/normal09/doneboardgames.html

Designing Video Games

By Andre LaMothe
From Windows Game Programming For Dummies, 2nd Edition

A video game is more than the sum of its pieces; a game has a synergy that, after the game is complete, makes it something unique. Creating this synergy takes a lot of technical know-how, as well as a sense of design and art. Basically, you need to be a Leonardo da Vinci and an Albert Einstein all in one.

The basic sequence of game design is as follows:

- Come up with an idea for a game.
- Create storyboards and rough sketches of your game world, the main characters, and the action.
- List the details of your game and take into consideration everything about the game "universe."
- Finally, put these concepts all together into a design document, something like a movie script that contains everything about your game.

Developing an idea

Before you write a game, you need an idea - a story, something to start with. Brainstorm and come up with an idea for a game; the idea should be loosely based on something that has at least a fleeting resemblance to a story. Then you need to come up with the goals of the game. Ask yourself questions such as "What will the player do?" and "How will the player do it?"

Maybe you're wondering, "Where do I get ideas for games?" Well, you can't tap into any magical formulas, but you can look in a few places:

- Other games: Don't copy another game, of course, but improving and taking a new perspective within the game is fine.

- Movies and videos: Watch as many sci-fi movies as possible and see if you can come up with a game based on some of their ideas and content. Of course, you need to get permission from the filmmaker if you use any characters or story lines from those movies.

- Real-life games: You can take a game such as hockey and make a computer version of it, or make a futuristic version of it.

- Dreams and nightmares: This technique is a gold mine; in your mind, you can try anything out. Go to sleep thinking about games, demons, monsters, or whatever, and hopefully, you will have a killer dream that gives you an idea for a game.

After you have your game ideas, then you need to outline the story.

Storyboarding

Note: there is a more detailed section on storyboards elsewhere in the booklet.

One of the best ways to see a game is to storyboard it - to create a sequence of drawings that show the levels of the game or the different scenes and goals. Each storyboard should include a paragraph or two to describe what is going on. Figure 1 depicts a basic storyboard for an imaginary shoot-'em-up game.

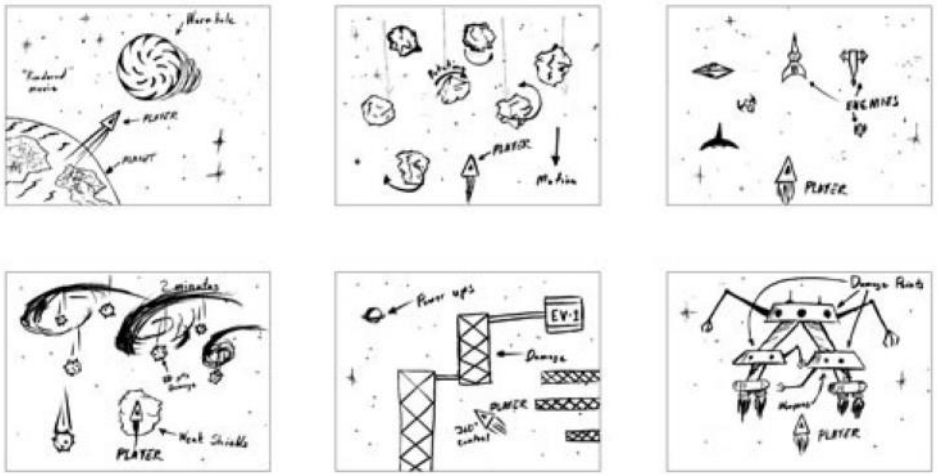


Figure 1: A typical game storyboard.

As you can see, the storyboard has six frames; each frame represents a different level of the game, and the final frame is the goal. Notice that the storyboards are sketched and messy. Storyboard sketches are used only for brainstorming and for getting down on paper the general flow of the game.

Considering the Details

After you create storyboards, you write the details of the game design. This stage is where the process gets complex. You have to think of every possible detail and write something about it — because when you make your game, you are a god - well, at least a demigod. If you don't program a specific detail, it's not going to happen.

You need to figure out all the rules and the structure of the game. For example, here's a list of questions to consider:

- What can the game character do? Can he or she fly, swim, and teleport?
- How many different enemies will the hero fight?
- What kind(s) of weapons are available?
- How does the player get rejuvenated?
- Can more than one player play at once? If so, what are the ramifications of this?
- Will the game's perspective be a side view, top view, or first-person and full 3-D view?
- What kind of sound track? Rock, rap, techno?
- What is the personality of the main character?

These examples are just some of the details you need to think about. The key here is to create the characters, rules, laws, and goals of your game universe in as much detail as possible. That's necessary because you're going to generate the artificial universe they all exist in. The more detail you include, the better the game will be.

Constructing a Design Document

After you have all the storyboards and details of the game written down, create a design document. The goal of the document is to record all your ideas in a format that resembles a movie script. Creating the document is a housekeeping step, but it gives you another chance to change your mind, see if some rule or event is totally stupid, or add another game element.

The result of developing the design document is that your imaginary world becomes more vivid in your mind. When you start talking to yourself about the stuff that is happening in your game, when your imaginary world is so thick with texture and so alive with detail that you can see it, then writing a game around it is much easier, because you aren't making things up as you go. Having a clear picture of a game's world is one of the most important issues in game design.

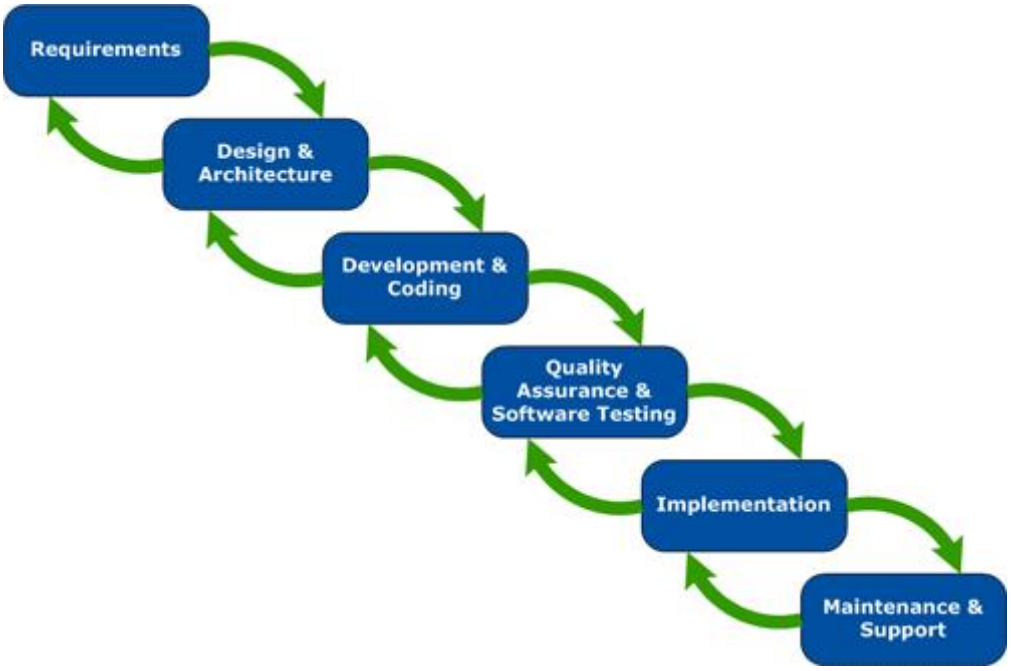
The universe you create must be coherent; it must be well thought out enough to hang together about as well as the universe we live in (or better). If your game universe is coherent, the players will lose themselves in it; they will experience a suspension of disbelief and really have fun. On the other hand, if you come up with a half-baked idea and then wing it as you go, your game ends up looking thrown together, which doesn't invite belief. Without thought or planning, you won't pull the players into your world, and they won't play your game!

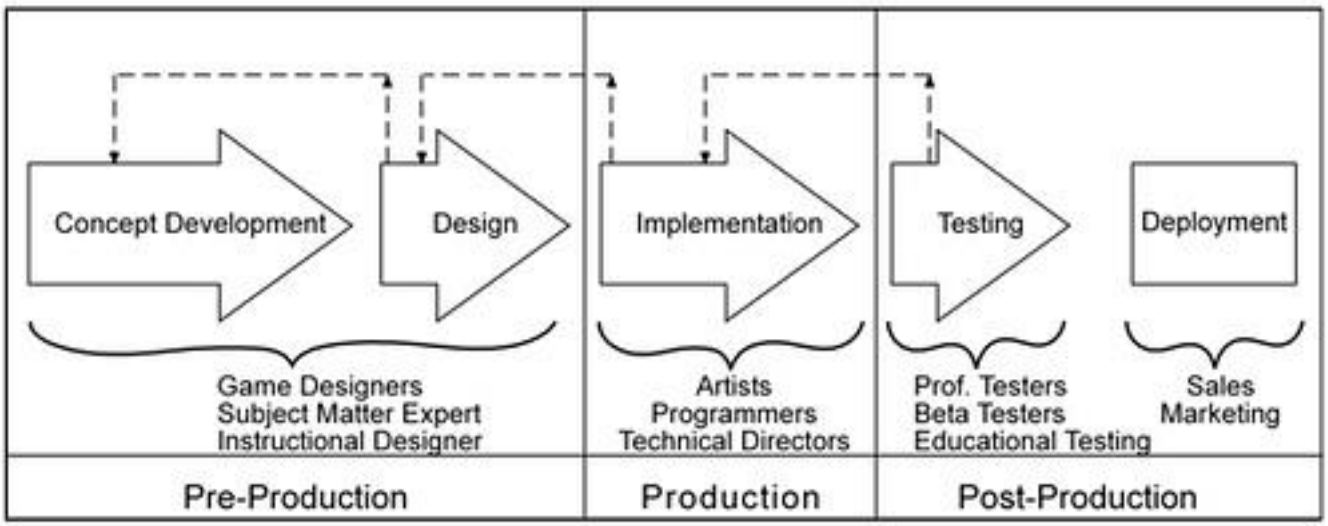
After you have a design document in hand, you're in a far better position to create a solid game. As you work on the game, you won't be tempted to impulsively add elements that are inappropriate or out of place in your game's world.

Don't misunderstand. Changing and adding to your design is acceptable, but make sure all the elements work well together. If players aren't distracted by inconsistencies in your game's universe, they can be fully involved with the characters and situations.

Game Design Process

The design of a Video Game follows more or less the process as the development of any software. Below is an illustration of software development cycle known as the Waterfall Model.





Game Design Jobs

When you design games you need to work with interdisciplinary teams formed with people with different skill sets.

Such people include: Artists, Programmers, Designers, Producers, Sound Guys, Marketers and Business People

Watch the end credits of any large console game and you will get an idea of the hundreds of people involved in the process.

Image Source: http://gd-bachelor.htw-berlin.de/en/get-informed/specializations/

Game Design Skills

What skills does Game Designer need to be good at?

- Animation
- Anthropology
- Architecture
- Art
- Brainstorming
- Business
- Cinematography
- Communication
- Creative Writing
- Economics
- Engineering
- History
- Interface Design
- Management
- Mathematics
- Music
- Psychology
- Public Speaking
- Sound Design
- Technical Writing
- Visual Arts
- …and much more!

Source: http://www.slideshare.net/jesseschell/what-does-a-game-designer-do
Jesse Schell, Game Designer

Types of Games

Action
Halo
Clash of Clans

Adventure
Minecraft

Arcade
Pong
PacMan

MMPRG
(Massively multiplayer online role playing games)

World of Warcraft
Elder Scrolls: Online

Platformers
Mario World
Donkey Kong

Racing
Mario Kart
Nascar '14

Role Playing Games
Final Fantasy
Diablo

Simulation
Sims
Train Simulator

Sports
EA Sports NHL
EA UFC

Strategy
Plants VS Zombies
Angry Birds

Image Source: http://pictures-and-images.net/single/69_video-game-sub-categories_2.html

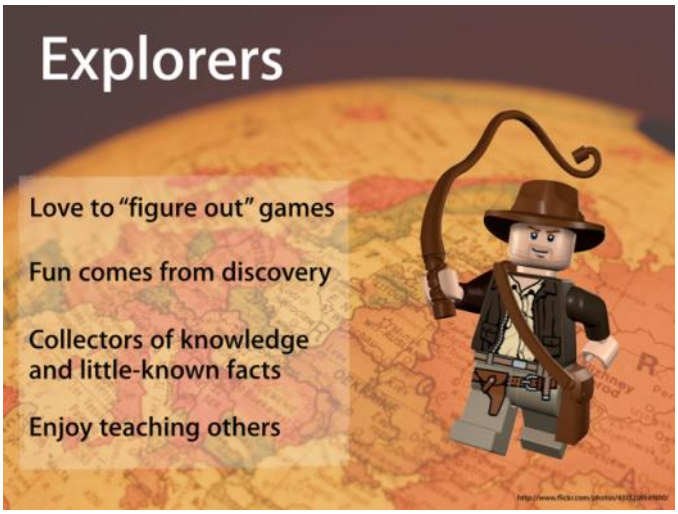
Types of Gamers

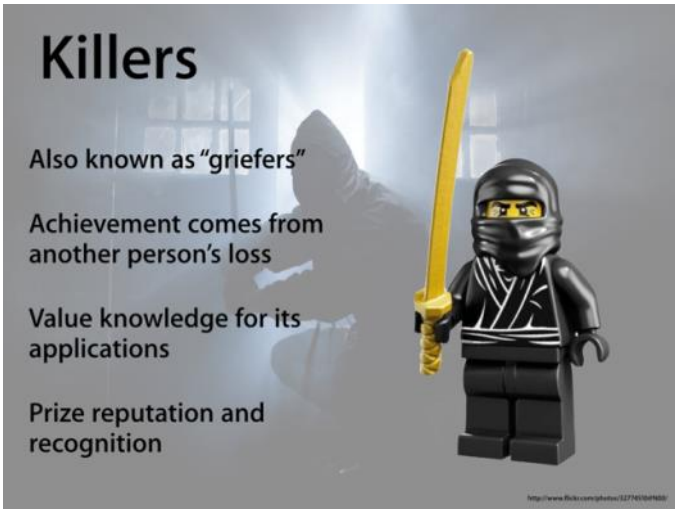
Richard Allan Bartle (born 10 January 1960 in Ripon, England) is a British writer, professor and game researcher, best known for being the co-creator of MUD1 (the first MUD - Multi-User Dungeon) and the author of the seminal Designing Virtual Worlds. He is one of the pioneers of the massively multiplayer online game industry.

Bartle did research on player personality types in virtual worlds. In Bartle's analysis, players of virtual worlds can be divided into four types: achievers, explorers, socializers and killers.

Source: https://en.wikipedia.org/wiki/Richard_Bartle

On the course website, you can find a link to the "Bartle Test of Gamer Psychology".





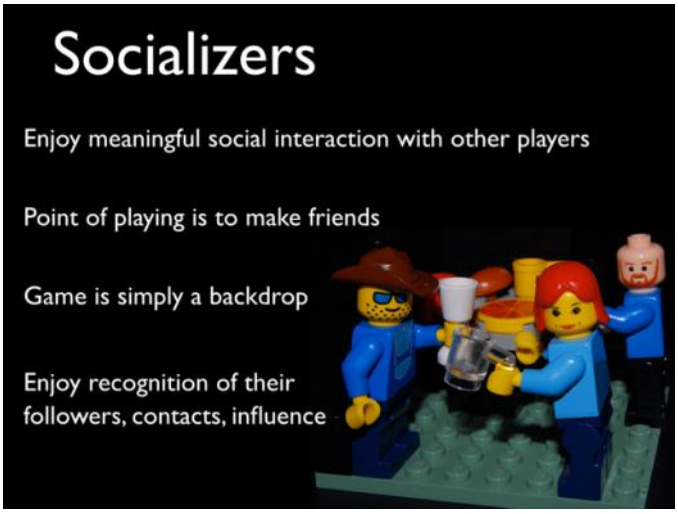


Image Source: http://www.kiang.net/blog/gaming-styles-and-the-class.html
Douglas Kiang

Reflective Questions

Record your answers to the following questions in a word processing document.

Watch the videos in the "Game Design" playlist on my YouTube Channel

Do you consider yourself a "gamer"?

How often to you play video games?

How do you play video games? Tablet, PC, Console, multiple platforms?

What type of games do you enjoy playing?

What are your favorite current video games?

What are your favorite classic video games?

What aspects of video games most appeal to you?

Take the "Bartle Test of Gamer Psychology". (link on unit website)

Did your results surprise you? Explain.

What are some of the currently popular video game consoles?

What are some of the currently successful video game companies?

What skills do you have which contribute to game design?

What video game design skills do you want to work on?