Game Introduction

What is a game?

- In academia we sometimes speak of game theory, in which multiple agents select strategies and tactics in order to maximize their gains within the framework of a well-defined set of game rules.

- In the context of console or computer-based entertainment, the word "game". usually conjures images of a three-dimensional virtual world featuring a humanoid, animal or vehicle as the main character under player control.

- A game can be defined to be an interactive experience that provides the player with an increasingly challenging sequence of patterns which he or she learns and eventually masters.

Game components

Story	Gameplay	Levels	Music
Combat	Enemies	Multiplayer	Monetization
	HUD	World	

Game Genres

- **Action**
  - Action games rely on eye/hand coordination and skill to play.
  - There are lots of stylistic variations available, making it one of the most diverse genres. Many of the earliest arcade games were action games.
- **Adventure**
  - Adventure games focus on characters (like in a role playing game), inventory management, story, and sometimes puzzle solving.
- **Augmented Reality**
  - Augmented Reality (or AR games) incorporate peripheral devices like cameras and global positioning (GPS) into gameplay.
- **Educational**
  - An educational game's primary intention is to educate while entertaining. These games are often aimed at a younger audience.
- **Party**
  - A party game is specifically designed for several players to compete in a variety of different styles of gameplay from quizzes to games of skill.

Game Genres

- **Puzzle**
  - Puzzle games are based on logic, observation, and pattern completion. Sometimes they are slow and methodical. Other times they require quick eye/hand coordination like an action game.
- **Rhythm**
  - In a rhythm game, a player tries to match a rhythm or beat to score points.
- **Serious**
  - Similar to educational games but with a focus on social issues. But the genre is more diverse than that. Serious games are used to provide training, for advertising, or just exist as art.
- **Shooter**
  - focus on players firing projectiles at each other. It's one of the most popular genres (at least here in the West) and there are many variations.
- **Simulation**
  - Simulations focus on creating and managing a world. Or a theme park. Or a farm. Or the life of an adorable monster.

Game Genres

- **Sports**
  - These games are based on athletic competitions from traditional sports to extreme ones.
- **Strategy**
  - Thinking and planning are the hallmarks of strategy games. This is one of the oldest genres of games.
- **Traditional**
  - Speaking of board games, traditional games are usually (but not always) based on games that existed in other, often physical, formats. Card games, board games, and casino games fall into this genre.
- **Vehicle simulation**
  - Players simulate piloting or driving a vehicle, from a race car to a star fighter. There are a variety of stylistic and control options for the player making the experience arcade-like or like a realistic simulation.

Game engines survey

- **Unreal Engine**
  - Unreal Engine 4 (UE4) is the latest evolutionary step, boasting some of the best tools and richest engine feature sets in the industry, including a convenient and powerful graphical user interface for creating shaders and a graphical user interface for game logic programming called Blueprints (previously known as Kismet).
- **DICE's Frostbite**
  - The Frostbite engine grew out of DICE's efforts to create a game engine for Battlefield Bad Company in 2006. Since then, the Frostbite engine has become the most widely adopted engine within Electronic Arts (EA);
  - Frostbite boasts a powerful unified asset creation tool called FrostEd, a powerful tools pipeline known as Backend Services, and a powerful runtime game engine. It is a proprietary engine, so it's unfortunately unavailable for use by developers outside EA.

Game engines survey

- **Rockstar Advanced Game Engine (RAGE)**
  - RAGE is the engine that drives the insanely popular Grand Theft Auto V. Developed by RAGE Technology Group, a division of Rockstar Games' Rockstar San Diego studio, RAGE has been used by Rockstar Games' internal studios to develop games for PlayStation 4, Xbox One, PlayStation 3, Xbox 360, Wii, Windows, and MacOS.
- **CRYENGINE**
  - Crytek originally developed their powerful game engine known as CRYENGINE as a tech demo for NVIDIA. When the potential of the technology was recognized, Crytek turned the demo into a complete game and Far Cry was born.

Game engines survey

- **Unity**
  - Unity is a powerful cross-platform game development environment and runtime engine supporting a wide range of platforms. Using Unity, developers can deploy their games on mobile platforms (e.g., Apple iOS, Google Android), consoles (Microsoft Xbox 360 and Xbox One, Sony PlayStation 3 and PlayStation 4, and Nintendo Wii, Wii U).

- **Microsoft's XNA Game Studio**
  - Microsoft's XNA Game Studio is an easy-to-use and highly accessible game development platform based on the C# language and the Common Language Runtime (CLR), and aimed at encouraging players to create their own games and share them with the online gaming community.

Game design document

- Design document that lays out the spine of your game. The intent is for readers to quickly understand the basics of the final product without going into excruciating detail.
- **Title Page**
  - Title page should include the following items:
    - Game title
    - Intended game systems
    - Target age of players
    - Intended ESRB rating
    - Projected ship date

Game design document

- **Game logos**
  - When you are creating the game title for your ten-pager, I suggest creating a placeholder logo. Choosing the proper font for your title allows you to convey the genre of your game quickly without the need for pictures.
- **Game Outline**
  - Game outline page should include two elements: ■ Game story summary— Using your one-sheet's story outline as a starting point, flesh out your game's story. Keep in mind that your story outline still shouldn't be more than a few paragraphs long, but that limitation shouldn't stop you from telling the beginning, middle, and end.

Game design document

- **Game flow**
  - Briefly describe the flow of the game's action in the context of the locations the players will find themselves.

- **Page 3: Character**
  - Detail about the character the player is controlling (or the vehicle they are driving) in regards to the story.

- **Page 4: Gameplay**
  - How the sequence of play is presented. Are there multiple story chapters? Or is your game divided into levels or rounds? Does it have any cool scenarios such as driving while shooting or running away from a giant boulder?

Game design document

- **Page 5: Game World**
  - Present some images and descriptions of the game world. List all the environments mentioned in the story. Provide short descriptions that outline what the players will find there.
- **Page 6: Game Experience**
  - You need to account for the feel of the starting screens, your cinematics, your music, your sound design, the camera..
- **Page 7: Gameplay Mechanics**
  - A mechanic is an item or element that players interact with to create or aid with gameplay. Here are a few examples of mechanics to get you started: moving platforms, opening doors, rope swings, slippery ice.
  - Describe a few of the mechanics and hazards in your game

Game design document

- **Page 8: Enemies**
  - What enemies do we find in the game world? What makes them unique? How do players overcome them?
- **Page 9: Multiplayer**
  - Does your game offer multiplayer capability? For how many players? Will the multiplayer capability offer gameplay that the standard game doesn't support? How many maps will it support? Can players create and share their own content?
- **Page 10: Monetization**
  - What are players buying for their money? Time? Power? Customization? For example, Kingdom Rush Frontiers players can buy power-ups to give their character more health, upgradable hero characters, and the ability to freeze and explode enemies.