Lecture Two – Game Analysis

Read the Chapter One Summary for the textbook
http://staffwww.fullcoll.edu/dcraig/gamedesign/Chapter%20One%20Summary.pdf

As a Game Designer you need to understand all aspects of a computer game. This includes the game technology (programming), game mechanics, game narrative, and game art elements. One of the important features of computer games is the Game Loop.

A Game Loop describes what a game does when it runs. Basically, a computer game is a set of software that, when the game is started, runs in a loop. The basic elements of a game loop is:

A. Get User Input – read the keyboard/mouse/controller and other inputs
B. Update game state – based on changes from the last game loop and user inputs, update the information in the game (the game state).
C. Draw the graphics to the screen
D. Go back to A

The Game Loop is often called the FPS loop, which commonly refers to Frames Per Second. This describes how fast the screen updates, but in terms of a game loop it also describes how fast the game reads player input. This is why games running at 60 FPS seem more responsible than games running at 30 FPS.

Game Design is a process. This is what chapter one of the textbook presents and is the essence of the playcentric approach to game design. What this means is that you will go through a series of steps as you design and create your game. As part of this game design process you need to evaluate your progress at every step of the way. You should be prepared to go back and start a step over if it doesn’t work at a later step. Understanding this looping process is an important concept in game design.

From a general perspective the steps in the game design process are:

1. Brainstorming – coming up with the initial idea and some basic core mechanics and player experience goals.
2. Create a Physical Prototype – this can be a document outlining the core game mechanics, core game loop, and a summary of the game narrative and structure. You may also create a simple physical test system using paper and pencil, cards, and dice.
3. Presentation (optional) to get funds or to convince other people to participate in the game development.
4. Software prototype – this is where elements of the game are implemented in a simple game prototyping system such as GameMaker. These elements could include core game mechanics.
5. Create the game design documentation. This would include details of the game structure, storyboarding the various game elements, creating details about the game narrative, documenting the graphic elements, etc.
6. Production. – Start creating the real game.

Before we get into details you should be familiar with some gaming terms. A good list of gaming terms is at:

Some of the important terms are:

- Checkpoints – these are points in the game where the character will return if they are killed or fail
- Cutscenes – these are video segments that play inside the game at specified points. They are typically used to extend the game narrative.
- DLC – Downloadable Content – this refers to extra game elements that can be downloaded (usually at a cost)
- Farming – this refers to the action of repeating some game activity over and over in order to get some game resource such as money or Experience Points
• FPS – This refers to games that use First Person Perspective. The term Shooter is normally used to refer to these kinds of games, but many modern games use the First Person Perspective in non-combat games.
• Hit Points (HP) – this refers to the amount of health a character have that will be reduced during combat
• Level (character) – this refers to the stage a character is at as they level up during a game. This is typically found in Role Playing Games or games that use this mechanic.
• Level (map) – this refers to an area or section of the game within which the character plays. This term is normally used for platformer games
• Level Design - this refers to the design and layout of areas of the game within which the player acts
• NPC – This is Non-Player Character and refers to game character controlled by the game and not the player
• Open World – this refers to the design of a game whereby the player is given complete freedom within a defined area. This means that the player can choose where to go and what game quests to take. Another term is Sandbox Game
• Permadeath – this refers to games that don’t have checkpoints and thus the player must start the game again if they die. Games that implement this kind of death mechanic are often called Rogue games
• Platformer – this refers to games where the player is jumping over obstacles, running, etc. These kinds of games are typically 2D games.
• PvP – Player vs Player. This refers to online games where players engage in combat or competition directly with other players.
• PvE – Player vs Environment – This refers to games where the player must content with the game environment and game NPCs and not directly with other players.
• QTE – Quick Time Event – this refers to in-game simulations where the player does not control the character and must watch a simulation or scripted action of the character.
• Role Playing Games (RPG) – this is a type of game that includes game character leveling up (getting new abilities) by completing quests, killing monsters, etc. The player gains Experience Points (XP) in order to level up.
• Skill Tree – this is the list of upgradable abilities that stack from lower to higher. As the player get XP in the game they can spend their XP or level points to upgrade abilities. The Skill Tree has a series of stackable skills (you must get the lower in order to get the higher skill).
• Sprite – this refers to a graphical element in the game representing the game character or other elements in the game.
• XP – short for Experience Points. This refers to points the player get as a result of playing the game or completing quests, etc. These are typically used to level up the player in the game and make the player more powerful and acquire new abilities.

Game Analysis and Game Genres

Game Designers should play and be familiar with a variety of games. This is important because many players have general expectations about types of games. If you wish to create a game in the Adventure genre they you should be familiar with what most adventure games have in common.

Before evaluating game genres you should have a method for performing game analysis. Analyzing a game is much different than playing a game. When playing a game you will engage with the game at a more emotional level and succumb to what the game designer wanted you to experience. Analyzing a game requires the player to look at the game structure, game mechanics, player choices, and other game elements. This is done by systematically playing through the game and evaluating the elements of the game before moving on.

You can do game analysis a number of different ways. However, a suggested sequence for game analysis is:

Initial playthrough - Play through the game (or at least part of the game) as a normal player up to the point you understand the basic game mechanics and structure.

Start the game again and describe the following elements:
A. Starting Game Element – when starting a new game the designer should be concerned with the following start elements:
   a. Game Tutorial – the game tutorial should teach the player to play the game. This would involve presenting most of central game mechanics and teaching the player what they are and how to use the game mechanics. There are a variety of ways to teach game mechanics. These include dedicated tutorial sections, written tutorials, and playable tutorials. The latter would be part of the regular game but simple enough so the player could complete it.
   b. Establishing Game Narrative – when starting a game that includes a strong game narrative, the game designer should try to establish the game narrative early in the game. This could be a cutscene, a playable section with dialog, or a written narrative introduction.

B. Core Game Mechanic – Most games have a core game mechanic. This references the player activity that the player will primarily use to progress through the game. For example, in Bioshock the player uses projectile weapons and plasmids to engage in combat.

C. Core Game Player Loop – a Player Loop are the things the player must do to progress through the game. For example, in the Witcher 3 the player takes jobs to perform tasks and kill monsters, which levels up the player so they can take more difficult tasks. In Borderlands and Borderlands 2 the player upgrades weapons in order to kill opponents and upgrade weapons. There are likely multiple player loops that are part of the game.

D. Game Structure – This is how the game is structured so the player can progress in the game. A game structure could be an open-world game, a linear narrative game, a platform game, etc. When doing game analysis you should identify how the game is structured. Most games are either open world, linear progress, or a combination. What you will be looking for in analyzing the game structure is how the player knows they are at the start of a new structure, how the player knows they are at the end of the structure, and how progression happens inside the structure.

E. Player Choices – When analyzing a game you should note what choices the game gives the player and how these choices play out in the game. What kinds of choices does the game give the player? What are the results of taking each option of a choice? How do these choices affect game progression and game narrative?

F. Game Narrative Structure and Progression – Along with the core game systems you should analyze the game narrative. The game narrative should have the following structure:
   a. Introduction section – how is the game narrative introduced in the game. How are the game characters introduced.
   b. Narrative progression – how is the narrative presented in the game. Is it presented through dialogs? Is it presented through written material? Information presented in the environment? This would include character progression (if any).
   c. Links between narrative and gameplay – how is the narrative related to the gameplay? Do completing quests or adventures progress the narrative?

Performing this kind of analysis on a game is a lot of work. You will likely play the game in a very systematic fashion and try out a lot of options. For example, what happens when you die in the tutorial section? What are the results of choosing different options during the gameplay? What happens if you pursue different narrative arcs as you play?