3D Wed Gallery for Game

Title: 3D Web Gallery for Game

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Chapter 1 Introduction to Game

Learning Outcome

Objectives of this chapter are: -

What is the Game?

Where the game idea come from?

WHAT IS A GAME?

There are many definitions of the word "game," none of which has been universally accepted for the purposes of defining the limits of game design. One of the following tentative definition: "An activity with rules. It is a form of play often but not always involving conflict, either with other players, with the game system itself, or with randomness/fate/luck. Most games have goals, but not all (for example, The Sims and SimCity). Most games have defined start and end points, but not all (for example, World of Warcraft and Dungeons & Dragons). Most games involve decision making on the part of the players, but not all (for example, Candy Land and Chutes and Ladders). A video game is a game (as defined above) that uses a digital video screen of some kind, in some way."

Figure 1 Example 3D Game

Figure 2 3D Game

WHAT IS THE GAME DESIGN?

Game design is the process of creating the content and rules of a game. Good game design is the process of creating goals that a player feels motivated to reach and rules that a player must follow as he makes and making meaningful decisions in pursuit of those goals.

In the broadest sense, game design refers to the idea behind a game. But it has come to mean a whole lot more than that. In large immersive games, game design refers to the central theme or point, as well as the story and plot and the characters' back-stories. In smaller games and in games in which there are no significant characters or plot.

For example, in a racing game, game design refers to: -

A. How one plays the game.

B. What are the rules?

C. How is the game scored?

D. How does the level of difficulty change with play?

E. What makes the game fun or challenging?

Game design is the art of applying design and aesthetics to create a game to facilitate interaction between players for entertainment or for educational, exercise, or

experimental purposes. Game design can be applied both to games and, increasingly, to other interactions, particularly virtual ones.

Game design creates goals, rules, and challenges to define a sport, tabletop game, casino game, video game, role-playing game, or simulation that produces desirable interactions among its participants and, possibly, spectators.

WHAT ARE GAME ASSETS?

Game assets are 2D sprites, 3D models, missions, levels, areas, voice, key framing and motion capture, sound effects, music, and special effects. In the other words the **Game assets** are the "things" that go into a game. Some examples of assets are artwork (including textures and 3D models), sound effects and music, text, dialogue, and anything else that is presented to the user.

Here is a list of examples of game assets:

2D/3D Design: -

- Characters
- Objects
- Environments
- Vehicles

GUI: -

- Heads-Up Display (HUD)
- Icons

Scripting:

- Artificial Intelligence (AI)
- Special effects
- Networking
- Physics

Audio: -

- Background music
- Sound effects

Characters

The game characters are the game hero’s and enemies within the game.

Figure 3 Game Characters

Figure 4 Game Characters Enemies

Game Objects

The game objects are the things exits inside the game like stone, trees, mountain, grass, flowers, waterfall, rivers, and etc.

Figure 5 Game Objects

Figure 6 Game Objects

Game environments

The game environments are the place where the game played. Like open land, inside house, inside water, in the space and etc.

Figure 7 Land

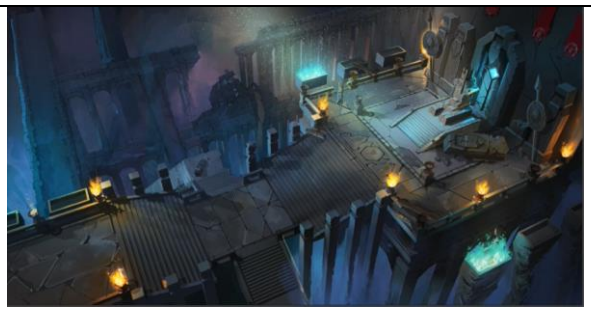

Figure 8 in the building

Figure 9 Space

Figure 10 Water

Heads-Up Display (HUD)

Heads-Up Display, also known as a HUD, is any transparent display that presents data without requiring users to look away from their usual viewpoints.

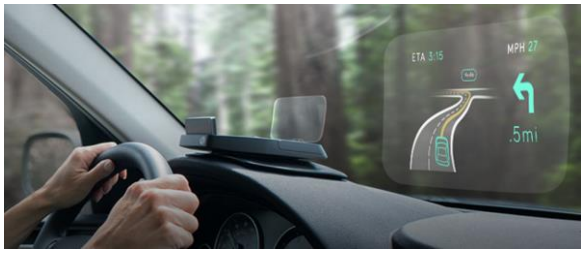

Figure 11 HUD Example

Figure 12 HUD Example

Icons

Game icons, in their simplest form, are square images that make it easier for users to identify games (and apps) quickly. It is also a way for developers to give a sneak peek of what their game is all about.

Figure 13 The Game Icons

Figure 14 The Game Icons

3D Game component Design process

Game development and design is a complex process. Building a game involves creating worlds and populating them with characters, objects, weapons, vehicles, flora, fauna, landscapes, and a myriad combination of real-life elements. It requires scheduling, planning and creating a system of production.

So, what is the game design process?

The game design process can be divided into 3 stages (similar to filmmaking) :-

1. pre-production
2. Production
3. post production

Pre-production

Pre-production will take up around 20% of the game design process. It involves planning, mapping, scheduling, research and gathering of resources for the production process ahead.

Concept Development

The core concept of the game is refined and expanded to articulate key elements such as the scope of the world, the mechanics of gameplay, the mapping of levels, character bios, complete storyline, etc.

Brainstorming sessions are an important part of fleshing out the main idea of the game. This is a time for all heads of departments to input their vision of what the game can be, and to bounce ideas off each other based on their own unique concerns for the process.

A library of characters, textures, and objects will be established and added to during the course of production. This is a resource vital to animators, 3D modelers and designers on the project.

The game's objectives will be clearly defined, concept art will be signed off, and it will be firmly established within its genre.

The storyline is fleshed out, with plot points, characters, story arcs, action sequences, climactic scenes, etc.

Storyboarding

The script is pre-visualized via a storyboard. Each scene is sketched out showing character action, shot selection, the sequence of action and cinematic direction.

Research and Development

Research and development (R&D) are conducted into many are as: -

Demographics - who is the target audience, how to design to their playing style, how to market to the intended audience

Production resources are explored - software/engine to be used, staffing requirements are established, budgets are fixed

Execution - what real-life resources will assist in creating the product, will motion capture be required to assist in animation, etc.

Game Development Document

The Game Development Document (GDD) is the blueprint for the production process. This is the plan from which all departments will work, outlining the key elements - what is the game and what is the point of it, what are the programming building blocks, what are the stages of the design process, etc.

The GDD will have sections dedicated to each individual department detailing their own specific needs, deadlines and resources. Concept art and aesthetics will be set out for the designers to work from.

Mapping

The levels are mapped out across the course of the game. This is macro mapping, defining where the game is going, how it is played, how the player is led through it, etc.

Prototyping

One or more rudimentary prototypes will be produced to see what works and what doesn't, if there are any bugs and if the concept has legs. The testers give feedback on the gameplay to improve the final product.

Figure 15 Horizon Zero Dawn Video Game

Production

Production will take up about 60% of the design process. It is when the bulk of the work is done. It's all systems go! Animation, 3D modeling, programming teams all begin working in tandem.

3D Modeling

All the elements of the game are mapped onto a grid and rendered to 3D objects. This is a complex and time-consuming process, as all of the visual parts are often built from scratch.

Level Action

The level action is blocked out, i.e. how the action on each level plays out, micro detailing of the action sequences and objectives of each level, how the player is guided towards the next level.

Animation

All 3D elements are then animated through a sequence of movements or through a scene, and the storyboard is brought to life.

Texturing

Texturing is added to all the static meshes on the 3D models. Animators refer to the library of artifacts where textures have been designed and stored.

Lighting

Lighting is an important element of design, it adds depth to the feel of the game, creating the 3D effect. It is used to create atmosphere, to build tension and replicate the real world.

Interactivity

Elements of function and interactivity are added. These are the intricate functions that the player must perform to progress in the game to keep them engaged and interested.

Artificial Intelligence

AI is used to react to the actions or decisions the player makes. It is the 'brain' of the game, made up of complex algorithms that customize it for the player.

Cinematics

Cinematics are short how-to segments instructing the player how to play. They can include hints, character info, maps, etc. They are usually an interlude from the game where the player is given extra information to assist them in their progress.

HUDs and Menus

Heads up displays (HUDs) update the player on their progress. They can provide information such as points/rewards status, timings, position on the map, etc. The menus instruct the player on the objectives, available elements, in-game purchase info, etc.

Post Production

Sound Design and Visual Effects

Sound design brings together all the dialogue, score, foley and sound effects required for the game's soundscape. Visual effects, or special effects, are added to the sequences to enhance the visuals.

Packaging and Marketing

Artwork from the game is used for creating packaging as well as marketing materials such as posters, online advertising, trailers, etc.

The game design process is a complex one requiring many iterations of the overall aesthetic of the game. The design team will produce 3D animation, print art, 2D renderings, storyboards, trailers, etc.