

What is a Video Game?

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1 Introduction

A Video Game is based on: 1. Curiosity 2. entertainment 3. escape from reality

Game engine is:

“The things that games are built on”

Games have a ton of functionality in common

Even beyond superficial things typically defined by genre or gameplay

Why re-write those same sets of functionality every time we want to make a new game?

Generalizable system providing a set of useful, flexible components

Generalizable - “Could other games use this functionality?”

Useful - “Would other games benefit from using this functionality?”

Flexible - “Can a game tweak how the system behaves to get a desired effect?”

Implemented as a framework or a library

Frameworks dictate control flow

Libraries do not dictate control flow

Your engine will use both design patterns

2 Who's involved in making a game/engine?

Team Roles:

Art director

Game publisher

Game designer

Sound maker

Lead programmer

3 Overview

A Video game design :

Demand analysis -- Outline Design -- Detail Design -- encoding -- unit test --
integration test -- system test -- maintenance

4 Methods/Techniques

(1) Graphics: Renders

DirectX

OpenGL

HTML canvas/WebGL

Platform specific rendering

Everything is triangles

Textures

Lightning

Shaders

(2) Render - viewport(3D)

- (3) lightning
 - ambient
 - point
 - spot
 - directional
 - self-illuminated
- (4) animation - mesh/morph
 - high accuracy
 - very expensive
 - data storing
- (5) animation - motion capture

5 Conclusion

The video game is design for people's entertainment life. The video game engine, using the calculation model character sound, image synthesis, 3D images and game player to feel. Game player itself into the role of the game experience, story, exquisite ornamental CG. In the development of the video game, the game is the game engine framework is the most important part. All the sounds, images, model, through the calculation of the game engine to operate. So we need a game engine to develop the video game.