Exploration of Design Patterns in Game Development

Technical Work Term Report (Work Term 3)

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Preface & Foreword

Purpose

The purpose of this report is to explore and observer different kinds of theoretical methods nad patterns and how they're used ot develop components that make up a game.

As well to consolidate my knowledge as a whole in the industry as design patterns are software development concepts and potentially applicable elsewhere in the tech industry.

Background

(Working at EA-Bioware) (Associate Developer (Programmer) for game Anthem) (Using modern game engine Frostbite)

Scope of Coverage

(The scope of this report)(Covers many design patterns outlined in "Gang of Four")(Will not cover detailed breakdown, explaination, and specification of existing proprietary tech; i.e. extended code from the game or Frostbite engine)

Contributors

(Tim Gibson - senior software lead, manager: contribution by supervising the report and giving advice)

Summary

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0 Introduction

0.1 Design Pattern

What is design pattern?
No it's not tartans or pokka dots.

1 Background ? (Better section title)

1.1 Game Development Components

There are many parts to a video game. It can be grouped into: rendering, physics / simulation, AI, UI, sound / music. online, controls (input handling), online / networking. All tied together by the game engine.

Having all the systems working together monolithically is bad, becuase it's difficult to maintain, prone to errors and bugs, and hard to collaborate as sub-systems are too tightly coupled.

1.2 Gang of Four

In software development, the phrase "Gang of Four" refers to the four authors of the Design Patterns book. The book features the most common design patterns widely in use today.

2 Creational Design Patterns

3 Behaviour Design Patterns

4 Structural Design Patterns

5 Architectural Patterns

5.1 Entity-Component-System

5.2 Model-View-Controller

Mostly used in UI development.

6 Conclusions

References

A Sample Code