COMPLETED – Declaration of Authorship

COMPLETED – Abstract

TODO – Acknowledgements

TODO – List of Figures

TODO – List of Tables

COMPLETED – 1 Introduction

Motivation

Contribution

Reference unity labs

Structure of This Document

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

TODO – 2 Background

Thematic Area within Computer Science

Serious Games

Examples

Gamesforchange.org

Persuasive Games

Games for social change

Game Design

Where do ideas come from?

The MDA Framework

Mechanics

Dynamics

Aesthetics

1. Sensation - game as sense-pleasure  
2. Fantasy - game as make believe  
3. Narrative - game as drama  
4. Challenge - game as obstacle course  
5. Fellowship -game as social framework  
6. Discovery - game as uncharted territory  
7. Expression - game as self-discovery  
8. Submission - game as pastime

Prototyping

Paper-prototypeing

Wireframing

High-fidelity

Conceptual Game Characteristics

Genre

Rules

Balance

Perspective

Space

Focus and flow

Difficulty

Storytelling

Practical Game Characteristics

Game Loop

Dimensions

Physics

Controls

Graphics

Art

Level Design

Character Desisng

Music

A review of Unity and Blender

Literature on these areas

Rollable

Other lab

TODO – 3 Problem – rename to project title

Problem Definition

Creating a 3D video game using the Unity development platform with C#. The game will hope to include a movement system, items, inventory, equipable items, item containers (chests), player stats (health + stamina), enemy objects, combat system, unique 3d art using blender.

Objectives

What is the overall objective of the project. What do I produce as a final deliverable.

What the player experiences/does

SHOULD I REPLACE WHAT I HAVE FOR NON-FUNCTIONAL REQUIREMENTS HERE???

Functional Requirements

Character Objects

Player

Enemy

Friend

Character Statistics

Health

Stamina

Magic

Maximum carry capacity

Movement

Walking

Running

Sprinting

Rolling

Falling (raycasting)

Camera

Player movement

Environment collision

Items

Weapons

Armour

Consumables

Quest items

Combat

Inventory

Equipment

Item Containers

Compass

Set Markers

Animations

Animation blending

Animation masking

Sneaking

Unique 3d art

Quests

Ai -> Finite State Machines

https://www.youtube.com/watch?v=Vt8aZDPzRjI&t=770s

GAME STATE PERSISTENCE

Non-functional Requirements

Nonfunctional Requirements (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system across the different backlogs.

User friendly UI

Story via quest tutorial

Fun and interactive combat

TODO – 4 Implementation Approach

Architecture

Games Engine

Pre/post processing

Risk Assessment

Methodology

Agile

Monday.com board

Implementation Plan Schedule

Evaluation

Play testing

Quantitive

Qualitive

Prototype

Wireframes

Paper prototype

TODO – 5 Conclusions and Future Work

Discussion

Discussion on my research

Conclusion

Future Work

TODO - Bibliography

TODO – Code Snippets

TODO – Wireframe Models

2.2 The Game Design Process

Dieter RamsIndustrial Designe

Good design is making something intelligible and memorable, great design is making something memorable and meaningful.

2.2 The Game Design Process

<https://www.aaai.org/Papers/Workshops/2004/WS-04-04/WS04-04-001.pdf>

MDA: A Formal Approach to Game Design and Game Research

Robin Hunicke, Marc LeBlanc, Robert Zubek

one must first understand the idea that games are more like artifacts than media. By this we mean that the content of a game is its behavior ñ not the media that streams out of it towards the player. Thinking about games as designed artifacts helps frame them as systems that build behavior via interaction. It supports clearer design choices and analysis at all levels of study and development.

2.2 The Game Design Process

2.2.3 Paper-Prototyping

https://ieeexplore.ieee.org/abstract/document/5467312

The Blank-Page Technique: Reinvigorating Paper Prototyping in Usability Testing

[Brian Still](https://ieeexplore.ieee.org/author/37396840800); [John Morris](https://ieeexplore.ieee.org/author/37399308500)

Arguably, usability testing is most effective when integrated into the user-centered design process.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

<https://www.aaai.org/Papers/Workshops/2004/WS-04-04/WS04-04-001.pdf>

MDA: A Formal Approach to Game Design and Game Research

Robin Hunicke, Marc LeBlanc, Robert Zubek

Systematic coherence comes when conflicting constraints are satisfied, and each of the gameís parts can relate to each other as a whole. Decomposing, understanding and creating this coherence requires travel between all levels of abstraction ñ fluent motion from systems and code, to content and play experience, and back.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

https://www.sciencedirect.com/science/article/pii/S1877050918314765

Analysis of Gamification Models in Education Using MDA Framework

Gede PutraKusumaaEvan KristiaWigatibYesunUtomobLouis KhrisnaPutera Suryapranatac

Designers tend to see from Mechanics to Dynamics to Aesthetics, while players tend to see from Aesthetics to Dynamics to Mechanics.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

<https://www.aaai.org/Papers/Workshops/2004/WS-04-04/WS04-04-001.pdf>

MDA: A Formal Approach to Game Design and Game Research

Robin Hunicke, Marc LeBlanc, Robert Zubek

From the designerís perspective, the mechanics give rise to dynamic system behavior, which in turn leads to particular aesthetic experiences. From the playerís perspective, aesthetics set the tone, which is born out in observable dynamics and eventually, operable mechanics.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

<https://www.aaai.org/Papers/Workshops/2004/WS-04-04/WS04-04-001.pdf>

MDA: A Formal Approach to Game Design and Game Research

Robin Hunicke, Marc LeBlanc, Robert Zubek

Mechanics describes the particular components of the game, at the level of data rep-  
resentation and algorithms.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

https://www.sciencedirect.com/science/article/pii/S1877050918314765

Analysis of Gamification Models in Education Using MDA Framework

Gede PutraKusumaaEvan KristiaWigatibYesunUtomobLouis KhrisnaPutera Suryapranatac

Mechanics describe rules or components implemented in games, such as basic action, algorithm, game engine, game elements, etc.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

<https://www.aaai.org/Papers/Workshops/2004/WS-04-04/WS04-04-001.pdf>

MDA: A Formal Approach to Game Design and Game Research

Robin Hunicke, Marc LeBlanc, Robert Zubek

Dynamics describes the run-time behavior of the mechanics acting on player inputs and each othersí outputs over time.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

https://www.researchgate.net/publication/326311784\_Level\_Up\_Your\_Strategy\_Towards\_a\_Descriptive\_Framework\_for\_Meaningful\_Enterprise\_Gamification

Level Up Your Strategy: Towards a Descriptive Framework forMeaningful Enterprise Gamification

Umar Ruhi

The context of the system establishes a cognitive anchoring point for players to recognize what types of activities they can undertake.

Ruhi U. Level Up Your Strategy: Towards a Descriptive Framework for Meaningful Enterprise Gamification. Technology Innovation

Management Review vol 5 issue 8. 2015;: p. 5-16

Dynamics are related to the game’s context, constraints, choices, chance,consequences, completion, continuation, competition, and cooperation

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

https://www.researchgate.net/publication/326311784\_Level\_Up\_Your\_Strategy\_Towards\_a\_Descriptive\_Framework\_for\_Meaningful\_Enterprise\_Gamification

Level Up Your Strategy: Towards a Descriptive Framework forMeaningful Enterprise Gamification

Umar Ruhi

Together, the dynamics of consequences, completion, and continuation establish the basis for a feedback sys-tem in gamification to help drive changes in end user behaviour.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

<https://www.aaai.org/Papers/Workshops/2004/WS-04-04/WS04-04-001.pdf>

MDA: A Formal Approach to Game Design and Game Research

Robin Hunicke, Marc LeBlanc, Robert Zubek

Aesthetics Aesthetics describes the desirable emotional responses evoked in the player,  
when she interacts with the game system.

2.2.2 Mechanics, Dynamics and Aesthetics (MDA) framework

https://www.researchgate.net/publication/326311784\_Level\_Up\_Your\_Strategy\_Towards\_a\_Descriptive\_Framework\_for\_Meaningful\_Enterprise\_Gamification

Level Up Your Strategy: Towards a Descriptive Framework forMeaningful Enterprise Gamification

Umar Ruhi

End users formulate their experiences based on the aesthetics and they engage in specific activities towards satisfying their favoured gratifications.

<https://www.researchgate.net/figure/The-MDA-Framework-Perspectives-of-the-game-designer-and-the-player_fig8_265598960>



<https://www.youtube.com/watch?v=dt1bQsZ68iw>



<http://www.cbcapone.com/wireframes.html>

Diagram

Description automatically generated

<https://www.youtube.com/watch?v=T1RvF_gY28k>



TODO

Cite all images

Cite all references