Video Game Data Synchronization using Blockchain

UNDERGRADUATE THESIS

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ABSTRACT

In this final project, a system is proposed to store a player's progress within a video game in a blockchain system. Specifically, this project aims to propose an alternative way of hosting player data for a live service type video game where one player's progress is shared and impacts other's overall experience. In this case, it is important that the player progress can be securely stored and accessed, while removing the need for hosting a server while simultaneously adding redundancy by making it so that every participant has a copy of everyone's progress, allowing a full peer-to-peer online structure.

The benefit of the proposed work is to alleviate the problems with existing live-service type games that deploy servers to store player's progress. As deploying and maintaining these servers will cost the game publisher, there will be a point where the game will no longer be profitable enough to support the ongoing service and eventually support for the game will be suspended. By moving the storage to blockchain, progress can be maintained by the player base and removes the need for standalone servers to provide saving services to the players.

The proposed method is by moving player's progress data from a centralized, single-party owned server that is common with today's live service game to a novel blockchain-based database where the data is saved and maintained throughout the game's active players.

By using the proposed method, the results are that publisher will no longer need to maintain dedicated servers and therefore the player base can continue to play and enjoy game while maintaining progress.

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TABLE OF CONTENTS

ABSTRACT i

DEDICATION ii

ACKNOWLEDGEMENTS iii

TABLE OF CONTENTS iv

LIST OF TABLES vii

LIST OF FIGURES viii

1 CHAPTER I INTRODUCTION 1

1.1 Background 1

1.2 Problem Statement 2

1.3 Objectives 2

1.4 Scope and Limitations 2

1.4.1 Scope 2

1.4.2 Limitations 3

1.5 Project Methodology 3

1.6 Final Project Outline 5

2 CHAPTER II LITERATURE REVIEW 7

2.1 The Blockchain Concept 7

2.2 Implementations of Blockchain 8

2.3 Video Games and Interactive Media 8

2.4 Crossover between Blockchain and Video Games 11

3 CHAPTER III SYSTEM ANALYSIS 15

3.1 System Overview 15

3.2 Function Analysis 16

3.3 Use Case Diagram 17
3.4 Use Case Narrative 17
3.5 Flowchart Diagram 19
3.6 Hardware and Software Requirement 20
3.6.1 Hardware Requirement 20
3.6.2 Software Requirement 20
4 CHAPTER IV SYSTEM DESIGN 21
4.1 User Interface Design 21
4.1.1 Main Interface 21
4.1.2 Application Dropdown 22
4.1.3 Game Settings 23
4.1.4 Contract Settings 24
4.1.5 Debug Settings 25
4.2 Physical Design 25
4.3 Class Diagram 27
5 CHAPTER V SYSTEM IMPLEMENTATION 28
5.1 User Interface 28
5.1.1 Main Interface 28
5.1.2 Application Dropdown 29
5.1.3 Game Dropdown 30
5.1.4 Contract Dropdown 31
5.1.5 Debug Dropdown 32
5.1.6 Debug Window 33
6 CHAPTER VII CONCLUSION AND FUTURE WORKS 38
6.1 Conclusion 39
6.2 Future Works 39

REFERENCES 41

LIST OF TABLES

Table 2.1 Remakes Table …….. 12

Table 3.1: Use case narrative for new user registration …… 13

Table 3.2: Use case narrative for an existing user …… 13

Table 3.3: Use case narrative for a user ending his session and saving progress…….. 14

Table 4.1 Label Description from Figure 4.1 …… 23

Table 4.2 Label Description from Figure 4.2 …… 25

Table 4.3 Label Description from Figure 4.3 …… 26

Table 4.4 Label Description from Figure 4.4 …… 27

Table 4.5 Label Description from Figure 4.5 …… 28

Table 4.6 Development Software …….. 29

Table 4.7 Hardware Requirements …… 29

Table 6.1 Main Interface Testing Scenario Table ……. 33

Table 6.2 Gameplay Testing Scenario Table …… 34

Table 6.3 Data Saving and Retrieval Scenario Table ……... 35

LIST OF FIGURES

Figure 1.1 Development Process …… 13

Figure 3.1: Client Main Menu Screen …… 17

Figure 3.2: Client Pause and Data Management Menu …….. 18

Figure 3.3 Use Case Diagram ……..… 19

Figure 3.4: Client Startup and Main Menu Flowchart …… 22

Figure 4.1 Main Menu Design …… 24

Figure 4.2 Application Dropdown Menu Design …… 25

Figure 4.3 Game Dropdown Menu Design ……. 26

Figure 4.4 Contract Dropdown Menu Design …….…… 27

Figure 4.5 Debug Dropdown Menu Design ……...… 28

Figure 4.6 Class Diagram of The Application ……..... 30

Figure 5.1 User Interface Development– Main Interface …… 31

Figure 5.2 User Interface Development – Application Dropdown …….. 32

Figure 5.3 User Interface Development – Game Dropdown ……...… 33

Figure 5.4 User Interface Development – Contract Dropdown ……... 34

Figure 5.5 User Interface Development – Debug Dropdown …….. 35

Figure 5.6 User Interface Development – Debug Window ……. 36

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled **Video Game Data Synchronization using Blockchain** that was submitted by **KRISTOFORUS ADI AGUNG** majoring in **IT** from the Faculty of Computer Science was assessed and approved to have passed the Oral Examination on Tuesday September 5, 2023.

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