Executive Summary

ONLINE GAMING CREATION FOR BEGINNERS

(Technical Report)

THE INFLUENCE OF VIDEO GAMES ON HUMAN CIVILIZATION AND CONTROVERSIAL VIEWPOINTS BEHIND GAME DEVELOPMENT

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree Bachelor of Science, School of Engineering

Wenhui Lin

Spring, 2023

Department of Computer Science

On my honor as a University Student, I have neither given nor received unauthorized aid on this

assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

Joshua Earle, Department of Engineering and Society

Nada Basit, Department of Computer Science

Executive summary

For Capstone Technical Report:

The Capstone Technical report provides an overview of the game development beginner's experience in learning Unity. It starts with an introduction that introduces the development of video games and then brings to the specific development tool: Unity. The report is a reflection on the experience of learning game design using the Unity engine. In the introduction, the paper first discusses the interest in game design, which began with a simple stick-man basketball game they learned to create in high school. With the first interest, then comes the choice to pursue computer science as a primary major and started learning Unity on their own.

The paper describes the foundation of Unity, which includes essential topics such as game engines, real-time creation, and game design. The author emphasizes the benefits of learning Unity's tools by actually using them. The essay highlights that Unity is used in game design and fields such as mathematics, biology, architecture, and software engineering. The author notes that Unity is a powerful tool for self-learning, problem-solving, collaboration, selfesteem, and patience. The report then delves into the theoretical knowledge of Unity, with various short videos describing the importance of Unity in different fields, including mathematics, biology, architecture, software engineering, and game design. Describes the Dos and Don'ts of Unity and the benefits of using Unity, such as creating interactive content and seeing the final product at all times.

The report includes two hands-on activities that start from a small project which requires the learner to modify a first-person shooter game in Unity. Then the main project describes in the paper is to build a "City Builder" game that starts by creating an empty 2-D game and naming it "City Build". The paper notes that this experience provides practical knowledge that enables future use and seeing the final product.

The paper concludes by discussing the basics of creating games using Unity, such as controlling the main camera and directional lighting and using primitives to build objects. The main emphasis is that creating games requires extensive knowledge and teamwork, and dreams only come true when we do them step by step.

The report ends with addressing the use of Unity in the future by noting that Unity is a powerful tool for creating interactive content, iterating on design concepts faster, and reusing content across many projects. Overall, this Technical report provides a comprehensive overview of the journey of learning game design using Unity. It highlights the importance of learning Unity's tools by using them practically, the benefits of Unity in various fields, the complexity of the game design, the importance of teamwork and perseverance in achieving one's goals.

For STS Report:

The STS report explores modern video games and their impact on society from various perspectives. The article begins with a background of the video game industry, tracing its evolution from the early days of arcade games to the current era of virtual reality and mobile gaming. The article also introduces the actor-network theory as the framework for the research. To better understand this research topic, the actor-network theory is introduced and used to examine the relationship between online gaming and various social groups.

While video games are a popular form of entertainment for people of all ages, they are also controversial. Negative viewpoints associated with gaming include addiction, physical and mental health problems, social isolation, and violent behavior. Cyberbullying and doxxing are two examples of negative consequences that can arise from online gaming. In addition, race, gender, and class can also be problematic in video games. Some companies add diverse characters to games without considering the game's era, history, setting, and other backgrounds. The article concludes that it is essential to understand these negative impacts and take steps to mitigate them to ensure a healthy and balanced lifestyle.

Then the article discusses the positive aspects of video games and their potential benefits beyond mere entertainment. Video games can offer a range of opportunities to develop problemsolving, decision-making, critical thinking, and social skills, as well as the ability to explore new worlds and challenge oneself in a safe and controllable environment. The STS report presents two case studies that highlight the positive impact of video games on learning and cognitive development. The game "Minecraft" is used as an example of how video games can improve cognitive abilities and help children develop social skills. The second case study focuses on the role of mathematics in gaming and how games can enhance players' mathematical thinking and improve number sense.

The article also discusses the role of politics in gaming and how games can be used to introduce players to past events, future planning, and the rise and fall of the world as the responsibility of everyone. The article argues that incorporating political connotations into games can effectively introduce players to political developments in an unambiguous and detailed manner. Lastly, in the conclusion section, the article argues that understanding the positive impact of video games is crucial to appreciate their value beyond entertainment and recognize them as a tool for personal development and growth.

Table of Contents

ONLINE GAMING CREATION FOR BEGINNERS

(Temporary, I have not finished my Technical Report)

- 1. Introduction
- 2. Foundation of Unity
 - a. First Touch on Unity
 - b. The Actual Theory of Unity
 - c. Section Summary
- 3. Hands-On Activity and Learning Summary
 - a. Creation One: First-Person Shooter Game
 - b. Creation Two: "City Builder" Game
- 4. Using Unity in the Future
 - a. Unity in Different Fields
 - b. Coding Using Unity
 - c. Unity Under Education Mode
- 5. Conclusion
- 6. Works Cited

THE INFLUENCE OF VIDEO GAMES ON HUMAN CIVILIZATION AND

CONTROVERSIAL VIEWPOINTS BEHIND GAME DEVELOPMENT

- 1. Introduction
- 2. Modern Video Games and Viewpoints
 - a. Background

- b. Framework Actor-Network Theory
- c. Negative Viewpoints
 - i. Case I Cyberbullying and Doxxing
 - ii. Case II Race
 - iii. Case III Gender
 - iv. Case IV Violence
 - v. Case V-Disability
 - vi. Section Summary
- d. Positive Viewpoints
 - i. Case I Learning through entertainment
 - ii. Case II Math within Gaming
 - iii. Section Summary
- e. Politics in Gaming
- 3. Future of Video Gaming
- 4. Conclusion
- 5. Works Cited