

**How Enactive Realism in A Game's Visual and Gameplay Design Can Affect  
Immersion And Player Engagement**

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### **Declaration Form**

I, Chong Shu Ning declare that this thesis report entitled “How Social Realism In A Game's Design Can Affect Immersion And Player Engagement” is my own original work except for the citation from the references. The report has not been accepted or submitted to any party and will only be submitted to Degree of Bachelor of Science (Honours) Game Design under the University Tunku Abdul Rahman.

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Any errors or omissions in this research are solely my own responsibility.

## Abstract

Many people believe that video game realism depends entirely on high-quality graphics. However, this study argues that realistic gameplay mechanics are more important for creating immersion than photorealistic visuals. Using *Crescent Bay*, a low-poly fishing simulation game, this research tests whether "enactive realism"—where players perform tasks that mimic real-world effort—can make a game feel immersive even with simple graphics.

The study is based on Self-Determination Theory, which suggests that players feel engaged when they feel competent and in control. A mixed-methods approach was used, involving three participants with different gaming habits (a student, a competitive gamer, and a casual gamer). Each participant played the game freely while their playtime was recorded, followed by a short interview about their experience.

The results show that realistic mechanics successfully created immersion for casual players, who enjoyed the challenge and the sense of accomplishment. However, competitive players found the realistic effort too slow and frustrating. Crucially, all participants agreed that the simple, low-poly art style did not ruin the experience; instead, the realistic gameplay made the world feel authentic.

These findings suggest that indie developers do not need expensive graphics to create engaging games. By focusing on mechanics that require real effort and skill, developers can create immersive experiences that satisfy players' psychological needs. This study recommends that future games include difficulty options to balance the appeal of realistic mechanics for both casual and competitive audiences.

**Keywords:** enactive realism, game immersion, simulation games, player engagement, low-poly graphics

## Table of Contents

### Contents

|                                                            |    |
|------------------------------------------------------------|----|
| CHAPTER 1: INTRODUCTION .....                              | 1  |
| 1.1 Background .....                                       | 1  |
| 1.2 Problem Statement and Research Gap .....               | 1  |
| 1.3 Objectives of the Study .....                          | 2  |
| 1.4 Research Questions .....                               | 2  |
| 1.5 Significance of the Study .....                        | 3  |
| 1.6 Limitations of the Study .....                         | 3  |
| CHAPTER 2: LITERATURE REVIEW .....                         | 5  |
| 2.1 Introduction .....                                     | 5  |
| 2.2 Major Issues and Schools of Thought .....              | 5  |
| 2.2.1 The Prominence of Visual Realism .....               | 5  |
| 2.2.2 Ludological Realism and Mechanical Consistency ..... | 5  |
| 2.2.3 Self Determination Theory (SDT) and Motivation ..... | 6  |
| 2.2.4 Embodied Cognition and Enactive Realism .....        | 6  |
| 2.3 Comparative Case Study: Vacation Cafe Simulator .....  | 6  |
| 2.4 Gaps in the Literature .....                           | 7  |
| 2.5 Research Questions and Hypotheses .....                | 8  |
| 2.6 Definition of Key Terms .....                          | 9  |
| 2.7 Methodological Issues and Data Collection .....        | 9  |
| 2.7.1 Data Collection: Playtime and Interviews .....       | 9  |
| 2.7.2 Addressing Limitations .....                         | 10 |
| 3.0 Design Specification .....                             | 11 |
| 3.1 Game Overview .....                                    | 11 |
| 3.2 Story and Narrative .....                              | 11 |
| 3.3 Gameplay Mechanics .....                               | 12 |
| 3.3.1 Core Gameplay Loop .....                             | 12 |
| 3.3.2 Fishing Mechanics .....                              | 13 |
| 3.3.3 Fish Selling System .....                            | 14 |
| 3.3.4 Exploration System .....                             | 15 |
| 3.3.5 Resource Collection System .....                     | 15 |
| 3.3.6 Combat Mechanics .....                               | 16 |

|                                                     |    |
|-----------------------------------------------------|----|
| 3.3.7 NPC Task System .....                         | 16 |
| 3.4 Art Design .....                                | 17 |
| 3.4.1 Visual Style.....                             | 17 |
| 3.4.2 Environment Design .....                      | 18 |
| 3.4.3 Characters' Design.....                       | 19 |
| 3.5 UI and UX Design .....                          | 20 |
| 3.5.1 User Interface Design .....                   | 20 |
| 3.5.2 Main Menu Design .....                        | 21 |
| 3.5.3 In-Game HUD Design .....                      | 21 |
| 3.5.4 Shop Interface Design.....                    | 22 |
| 3.5.5 Pause Menu Design .....                       | 24 |
| 3.5.6 User Experience Design.....                   | 24 |
| 3.6 Audio Design .....                              | 24 |
| 3.6.1 Background Music .....                        | 25 |
| 3.6.2 Environmental Audio .....                     | 25 |
| 3.6.3 Sound Effects.....                            | 26 |
| 3.7 3D Assets.....                                  | 28 |
| 3.7.1 Shop Buildings .....                          | 28 |
| 3.7.2 Fish Shop Interior .....                      | 30 |
| 3.7.3 Fish Shop Interior Objects .....              | 31 |
| 3.7.4 Restaurant.....                               | 32 |
| 3.7.5 Lighthouse.....                               | 33 |
| 3.7.6 Shark .....                                   | 34 |
| 3.7.7 Three Star Fishes .....                       | 34 |
| 3.7.8 Two Star Fishes .....                         | 35 |
| 3.7.9 One Star Fishes .....                         | 35 |
| 3.7.10 Fishing Rod .....                            | 36 |
| 3.7.11 Seagull.....                                 | 37 |
| 3.7.12 Other Shop Decorations .....                 | 37 |
| 3.8 Methodology .....                               | 39 |
| 3.8.1 Introduction .....                            | 39 |
| 3.9 Research Design: Mixed-Methods Case Study ..... | 39 |
| 3.10 Sampling Strategy.....                         | 39 |

|                                                                   |    |
|-------------------------------------------------------------------|----|
| 3.10.1 Sampling Frame and Technique .....                         | 39 |
| 3.10.2 Access to Data .....                                       | 40 |
| 3.11 Data Collection Procedures .....                             | 40 |
| 3.11.1 Phase 1: Willing Playtime Observation (Quantitative) ..... | 40 |
| 3.11.2 Phase 2: Semi-Structured Interviews (Qualitative) .....    | 41 |
| 3.12 Data Analysis Plan .....                                     | 41 |
| 3.12.1 Quantitative Analysis .....                                | 41 |
| 3.12.2 Qualitative Analysis .....                                 | 41 |
| 3.13 Ethical Considerations .....                                 | 42 |
| 3.14 Summary .....                                                | 42 |
| CHAPTER 4: RESULT & ANALYSIS.....                                 | 43 |
| 4.1 Introduction .....                                            | 43 |
| 4.2 Participant Profile and Quantitative Data .....               | 43 |
| 4.3 Qualitative Findings: Interview Results.....                  | 44 |
| 4.3.1 Theme 1: Perception of Effort.....                          | 44 |
| 4.3.2 Theme 2: Visuals and Mechanics Working Together .....       | 45 |
| 4.3.3 Theme 3: Sense of Achievement .....                         | 46 |
| 4.4 Discussion of Findings.....                                   | 46 |
| 4.4.1 Effort and How Long People Played .....                     | 46 |
| 4.4.2 Simple Graphics vs. Real Mechanics .....                    | 46 |
| 4.4.3 Meeting Player Needs.....                                   | 47 |
| 4.5 Limitations of the Pilot Data .....                           | 47 |
| 4.6 Conclusion.....                                               | 47 |
| CHAPTER 5: DISCUSSION AND RECOMMENDATIONS.....                    | 48 |
| 5.1 Introduction .....                                            | 48 |
| 5.2 Interpretation of Results.....                                | 48 |
| 5.2.1 Solving the Problem Statement .....                         | 48 |
| 5.2.2 The Appeal of Virtual Manual Labor.....                     | 48 |
| 5.2.3 Addressing the Hypotheses .....                             | 49 |
| 5.3 Significance and Implications .....                           | 50 |
| 5.4 Limitations of the Study.....                                 | 50 |
| 5.5 Future Directions .....                                       | 51 |
| 5.6 Recommendations for Crescent Bay.....                         | 51 |

|                             |    |
|-----------------------------|----|
| 5.7 Final Reflection .....  | 51 |
| 6.0 Conclusion .....        | 52 |
| Appendices .....            | 55 |
| Interview Transcript.....   | 55 |
| Participants Picture .....  | 58 |
| Namecard .....              | 59 |
| Promotional Materials ..... | 60 |
| Logbook.....                | 62 |

## **List of Tables & Figures**

### **Tables**

**Table 2.1.** Definition of Key Terms

**Table 4.1.** Participant Details and Play Statistics

### **Figures**

**Figure 1.** Crescent Bay Logo

**Figure 2.** Core Gameplay Loop Diagram

**Figure 3.** Crescent Bay Fishing Mechanics

**Figure 4.** Crescent Bay Fish Selling System

**Figure 5.** Crescent Bay Sea Zones Imagery

**Figure 6.** Image of Town of Crescent Bay

**Figure 7.** Establishing Shot of Crescent Bay

**Figure 8.** Pause Menu Design

**Figure 9.** Main Menu Design

**Figure 10.** Crescent Bay HUD Display

**Figure 11.** Fishing Rod Shop UI

**Figure 12.** Weapon Shop UI

**Figure 13.** Boat Shop UI

**Figure 14.** Fish Shop Exterior

**Figure 15.** House Exterior

**Figure 16.** Equipment Shop Exterior

**Figure 17.** Weapon Shop Exterior

**Figure 18.** Interior of Fish Shop from Outside

**Figure 19.** Top Down View of Fish Shop

**Figure 20.** Inventory Box

**Figure 21.** Fish Tanks

**Figure 22.** Counter, Chopping Board, Knife, Shelf, Cash Register

**Figure 23.** Restaurant

**Figure 24.** Potted Plant

**Figure 25.** Restaurant Chair and Table

**Figure 26.** Lighthouse

**Figure 27.** Shark Model

**Figure 28.** Bluefin Tuna (3-Star Fish)

**Figure 29.** Atlantic Salmon (3-Star Fish)

**Figure 30.** Catfish (3-Star Fish)

**Figure 31.** Twaite Shad (2-Star Fish)

**Figure 32.** Common Carp (2-Star Fish)

**Figure 33.** Freshwater Bream (2-Star Fish)

**Figure 34.** Pink Gourami (1-Star Fish)

**Figure 35.** Yellow Perch (1-Star Fish)

**Figure 36.** Roach Fish (1-Star Fish)

**Figure 37.** Fishing Rod (Level 3)

**Figure 38.** Seagull Model

**Figure 39.** Fishing Line and Barbers on Shelf

**Figure 40.** Fishing Rod Rack

**Figure 41.** Gun Rack

# CHAPTER 1: INTRODUCTION

## 1.1 Background

When the general public mentions the use of realism in games, that often comes with the common perception of graphical accuracy as the primary metric, as well as a misconception that realism is largely dependent on visuals to closely mimic reality. Realism is the theory or practice of fidelity in art and literature to nature or to real life and to accurate representation without idealization. (Merriam-Webster, 2019) Fidelity carries the meaning of the quality or state of being faithful, as well as an accuracy in details. (Merriam-Webster, 2019) More often than not, the industry has operated under an assumption that higher polygon counts, advanced lighting systems, and photorealistic textures are the most effective implementations to induce immersion. However, the industry is ever-changing, and the media has evolved and matured, a change has commenced where there's now an understanding that ludological realism, which is the idea that games feel real when their mechanics perform consistently with the player's expectations of the simulated world, is not linear and that there are many methods to obtaining a sense of immersion and realism in games. (Chen, Dowling and Goetz, 2023)

Within this broader context, the concept of enactive realism works as a more in-depth area of concern. Unlike passive observation, enaction suggests that the body's interaction with the environment is what builds cognition and perception. (Shapiro and Spaulding, 2021) In gaming, this leads to mechanics where the player must actively perform tasks that mimic the physical or cognitive effort of the real-world activity being simulated. Despite there being a large number of texts regarding visual realism and narrative immersion, a gap persists in the understanding of how mechanical enaction influences the psychological state of immersion in casual simulation games. Crescent Bay, a fishing simulation game developed by my team, WorkStation, serves as the practical case study for this inquiry. The game focuses on the daily cycle of preparation, execution, and reward, delivering a controlled environment to determine how enactive design choices can influence player engagement and immersion.

## 1.2 Problem Statement and Research Gap

It is difficult to achieve a balance between realism and idealistic fun when developing a simulation game. Some popular titles of the genre might rely on more "arcade-style" mechanics where there's a prioritization of speed and convenience, while some others input a huge amount

of details and authenticity to the gameplay. (Braxie, 2025) If there is a dissonance between the visual representation of an activity and its actual gameplay loop, then that disconnect will break immersion, as the player's mental expectations and intuitive model of the activity clash with the reality of what is shown in game.

Current literature covers visual accuracy and narrative depth extensively but offers limited empirical research on how enactive realism, which is the alignment of gameplay mechanics with the physical and temporal realities of the simulated profession, directly correlate with sustained player engagement. (Lin and Peng, 2015) There is a certain gap in comprehending whether a game can achieve high immersion through mechanical realism even when its visuals are stylized or abstract and vice versa. Crescent Bay addresses this gap by intentionally designing its core loop to enforce a sense of tangible effort and consequence, thereby testing the hypothesis that the visual presentation of an activity being performed matching the level of complexity of the action increases immersion and player engagement with the game.

### **1.3 Objectives of the Study**

The primary objective of this study is to evaluate the efficacy of enactive realism in enhancing player immersion and engagement within the context of a casual simulation game. Specifically, the research aims to:

1. Analyze how the specific mechanics of Crescent Bay contribute to a sense of authentic agency.
2. Analyze how game environment and appearance affect player motivation in game retention.
3. Determine the correlation between enactive gameplay loops and reported levels of player flow and immersion.
4. Determine the correlation between low poly, semi-realistic designs and reported levels of player flow and immersion.
5. Identify design patterns that successfully bridge the gap between abstract game mechanics and realistic player experiences.

### **1.4 Research Questions**

To achieve the stated objectives, this study seeks to answer the following research questions:

1. How necessary is the implementation of enactive realism in gameplay to influence player immersion?
2. What are the guidelines and limitations for implementing enactive realism in regards to game environment and mechanics?
3. Does the alignment of gameplay actions with the same real-world behaviors significantly increase the attractiveness of the game world among players?

### **1.5 Significance of the Study**

This research holds significant value for the independent game development sector, particularly for studios operating with limited access to resources and budget for a high production. By demonstrating that realistic gameplay mechanics can compensate for visual shortcomings, this study provides a theoretical and practical framework for creating immersive experiences without relying on the crippling costs of photorealistic asset creation.

For Crescent Bay especially, the findings validate a unique selling point which is our casual game that has a balanced rewarding progression that is realistic enough that it makes the player feel immersed and engaged despite its low-poly art style. This challenges the prevailing industry misconception that realism requires complexity in graphics render. Besides that, the study contributes to the academic discourse on embodied cognition in digital environments, offering empirical data on how game mechanics that enforce effort influence the psychological state of flow. The resulting design patterns can serve as a guideline for future simulation and casual games aiming to balance accessibility with deep, meaningful engagement.

### **1.6 Limitations of the Study**

While this study aims to provide in-depth insights into enactive realism, several limitations exist that define the scope of the findings:

#### **Sample Size and Demographics**

The primary limitation lies in the sample size of the playtest group. As Crescent Bay is a student project and was only accessible within school grounds via a booth on display, the participant pool was restricted to a specific demographic, primarily peers and local gaming communities), which

may introduce selection bias and limit the generalizability of the results to the broader global gaming population.

### **Data Collection Constraints**

The study largely depends on self-reported information regarding “flow” and “immersion”. Subjective perceptions are inherently prone to recall bias and individual interpretation differences. While behavioral data such as the amount of time consumed to play and the effectiveness of the gameplay loop on individual players, the qualitative depth of each player’s personal opinions and feedback were limited to post-play interviews.

### **Scope of Simulation**

The research is tied to a single genre and a single game title. The findings regarding enactive realism in fishing mechanics and low-poly art may not directly translate into other genres, such as higher intensity action games or other forms of simulations, where the definition of realism and the standards to reach it might differ significantly.

### **Development Constraints**

As a student project, the game’s scope was limited by time and technical resources. Certain advanced mechanics were not implemented and some parts of gameplay were incomplete, meaning the study tests the potential of the concept within a constrained environment rather than its absolute ceiling.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviews the theoretical frameworks and existing literature surrounding realism, immersion, and player engagement in video games. It examines the dichotomy between visual fidelity and interactive consistency, analyzes the concept of embodied cognition in digital environments, and explores the psychological drivers of motivation through Self-Determination Theory (SDT). By dissecting these areas, this review establishes the theoretical foundation for investigating enactive realism in Crescent Bay. The chapter concludes by defining key operational terms and outlining the methodological approach used to measure player engagement through playtime and qualitative interviews.

### **2.2 Major Issues and Schools of Thought**

#### **2.2.1 The Prominence of Visual Realism**

Historically, the gaming industry has often equated realism with visual realism, which is the degree to which a game's audiovisual presentation mimics the physical world. (Slater et al., 2009) This school of thought suggests that higher polygon counts, photorealistic textures, and advanced lighting are the primary factors behind immersion.

- **Scholarly Perspective:** Jenkins (2004) notes that early game criticism often focused on the "uncanny valley" effect and graphical fidelity as the benchmark for quality.
- **Critique:** However, recent scholarship suggests that visual realism alone is insufficient. A game can look photorealistic but feel superficial or disconnected if the physics and mechanics do not align with player expectations (Mäyrä, 2008).

#### **2.2.2 Ludological Realism and Mechanical Consistency**

Meanwhile, ludological realism focuses on the internal logic and consistency of game rules. This perspective debates that a game feels more real when its mechanics perform predictably and logically in-line with the simulated world, regardless of visual style.

- **Scholarly Perspective:** Juul (2005) distinguishes between "fiction" (the story/visuals) and "rules" (the mechanics), suggesting that players suspend disbelief more readily when the rules are consistent.

### 2.2.3 Self Determination Theory (SDT) and Motivation

To understand why enactive realism drives engagement, this study applies Self-Determination Theory (SDT), developed by Deci and Ryan (1985). SDT posits that human motivation is driven by the satisfaction of three innate psychological needs, which are autonomy, competence, and relatedness.

- **Autonomy:** The need to feel in control. In Crescent Bay, this is achieved through choices in equipment, location, and progression.
- **Competence:** The need to feel effective. This is the core of enactive realism. When a player must learn the specific controls to reel in a fish and manages a large inventory of them, the resulting success provides a profound sense of mastery. As Ryan and Rigby (2003) state, "If you're a game designer, you give players interesting things to do, you allow them to get better at them... and you make them feel like their performance matters."
- **Relatedness:** The need to feel connected. In Crescent Bay, this is fulfilled through the narrative of helping the community by defending the town against pirates and interacting with NPCs to sell fish and purchase equipment.

### 2.2.4 Embodied Cognition and Enactive Realism

The concept of enactive realism is rooted in embodied cognition (Varela, Thompson, & Rosch, 1991), which suggests that cognition is shaped by the body's interaction with the environment. In gaming, this means the controller becomes an extension of the player's body. When a player must physically mimic the tension of a fishing rod, the cognitive load creates a deeper sense of presence. This tangible effort is the mechanism through which the game satisfies the SDT need for competence.

## 2.3 Comparative Case Study: Vacation Cafe Simulator

To illustrate the successful integration of realism and fun, this study analyzes Vacation Cafe Simulator (2023) as a benchmark for Balanced Enaction.

- **Visual Fidelity:** Like Crescent Bay, Vacation Cafe Simulator utilizes a stylized, low-poly aesthetic with bright colors and simplified character models. Visually, both games are considered low visual realism.
- **Mechanical Fidelity (The Integration):** Contrary to the assumption that stylized games must simplify mechanics, Vacation Cafe Simulator integrates detailed, authentic mechanics with its fun presentation. The game requires players to follow real-world recipes and execute specific, multi-step cooking processes, such as chopping, frying, plating rather than relying on simple "press to cook" buttons.
- **The Sense of Achievement:** The motivation in Vacation Cafe Simulator stems from the sense of accomplishment derived from managing a shop independently and serving customers with authentic, detailed procedures. The game proves that visual abstraction does not necessitate mechanical abstraction. The "fun" comes from the satisfaction of mastering a realistic process, which are the recipes, within a charming, low-stress environment.
- **Relevance to *Crescent Bay*:** This case study validates the hypothesis that Crescent Bay can achieve high immersion and engagement by adopting a similar approach: retaining a stylized, low-poly visual style while enforcing high-fidelity mechanical loops, such as detailed fishing, boat navigation, resource management. The goal is to replicate the type of authenticity and sense of player agency found in Vacation Cafe Simulator but applied to the fishing simulation genre.

## 2.4 Gaps in the Literature

Despite the robust literature on SDT and visual realism, significant gaps remain:

1. **The Visual-Mechanical Dissonance Gap:** Most studies treat visuals and mechanics as separate variables. There is limited empirical research on how players react when a game has low visual fidelity but high mechanical fidelity (enactive realism). Does the lack of photorealism hinder the user interactive experience, or does gameplay complexity compensate for it?

2. **SDT in Casual Simulation:** While SDT is widely applied to RPGs, there is a scarcity of literature applying it to casual simulation games where the "body" interaction is mediated through standard inputs. How does a fishing mechanic that requires a lot of effort and cognitive load compare to abstract or simple mechanics in satisfying the need for competence?
3. **Methodological Gaps in Engagement Measurement:** Many studies rely solely on self-reported surveys. There is a need to correlate behavioural data with qualitative insights to understand the duration and depth of engagement in enactive simulations.

Crescent Bay is positioned to fill these gaps by providing a controlled case study where visual abstraction is intentional, allowing for the isolation of mechanical enaction as the primary variable for satisfying psychological needs.

## 2.5 Research Questions and Hypotheses

Based on the literature reviewed, this study proposes the following hypotheses to answer the research questions:

- **Hypothesis 1:** There is a positive correlation between the implementation of enactive mechanics and the satisfaction of the Competence need (SDT), leading to longer willing playtime.
  - *Connection to Lit:* Supported by SDT (Deci & Ryan, 1985) and Embodied Cognition (Varela et al., 1991).
- **Hypothesis 2:** Players will report higher levels of a sense of agency and game authenticity when gameplay loops require cognitive and physical effort mirroring real-world tasks, even in a stylized visual environment.
  - *Connection to Lit:* Addresses the gap in understanding "tangible effort" in casual sims (Chen et al., 2023).
- **Hypothesis 3:** Visual stylization, such as low-poly models, will not negatively impact immersion if the mechanical consistency is high, challenging the dominance of visual realism.

- *Connection to Lit:* Counters the industry assumption that graphics are the primary metric for realism (Jenkins, 2004).

## 2.6 Definition of Key Terms

| Term                                   | Operational Definition                                                                                                                                                                  |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Enactive Realism</b>                | A design approach where gameplay mechanics require the player to perform actions that mimic the physical effort, timing, and cognitive load of the real-world activity being simulated. |
| <b>Self-Determination Theory (SDT)</b> | A framework of human motivation positing that satisfaction of Autonomy, Competence, and Relatedness drives engagement.                                                                  |
| <b>Willing Playtime</b>                | The duration a player chooses to continue playing the game without external prompts, used as a quantitative metric for engagement and enjoyment.                                        |
| <b>Authentic Agency</b>                | The player's subjective feeling that their actions have meaningful, realistic consequences within the game world.                                                                       |
| <b>Balanced Enaction</b>               | A design state where detailed, realistic mechanics are integrated with stylized, accessible visuals to maximize both immersion and fun (as seen in Vacation Cafe Simulator).            |

## 2.7 Methodological Issues and Data Collection

The identified gaps and the nature of the research questions dictate a specific methodological approach for this study.

### 2.7.1 Data Collection: Playtime and Interviews

To address the gap in measuring the duration and depth of engagement, this study employs a two-pronged data collection strategy:

1. **Quantitative Metric (Willing Playtime):** Participants will be asked to play Crescent Bay freely. The participants are free to play for as long as they like until they wish to stop

by exiting the game, the total time they played for will be recorded. This serves as an objective indicator of engagement and retention, reflecting the player's intrinsic motivation.

2. **Qualitative Metric (Post-Play Interviews):** Following the play session, semi-structured interviews will be conducted. These interviews will probe the player's subjective experience, specifically asking about:

- The feeling of "effort" during mechanics (Enactive Realism).
- The sense of mastery or competence gained (SDT - Competence).
- Whether the stylized visuals affected their immersion.
- Comparisons to other simulation games (e.g., Vacation Cafe Simulator).

### 2.7.2 Addressing Limitations

- **Subjectivity of Interviews:** While interviews provide more complete data, they are still subject to individual opinions and personal knowledge. To mitigate this, the interview questions will be standardized across all participants to ensure comparability.
- **Sample Size:** As a student project, the sample size is limited. The study acknowledges that while the findings may not be statistically generalizable to the entire population, they provide valuable exploration into the relationship between enactive mechanics and player engagement in simulation games.
- **Contextual Bias:** Players may have preconceived notions about fishing games. The interview will include questions to first clarify whether their engagement was driven by the genre or the specific mechanics of Crescent Bay.

## 3.0 Design Specification

### 3.1 Game Overview



Figure 1. Crescent Bay Logo

Crescent Bay is a 3D first-person fishing simulation and casual adventure game developed using the Unity game engine. The game combines fishing, resource management, shop handling, exploration, and light combat mechanics within a stylized low-poly coastal environment inspired by European and Mediterranean culture and architecture.

Players take on the role of a protagonist who inherits a fishing business from his late uncle after being invited to Crescent Bay by his cousin, Lisa. Starting with basic equipment and a small raft, players must earn money and reputation by catching and selling fish while gradually improving their fishing skills and equipment.

### 3.2 Story and Narrative

Crescent Bay takes place in a coastal harbor town. The town was once peaceful and prosperous, but pirate activities around the nearby islands have recently become increasingly dangerous for fishermen and residents.

The protagonist is an unemployed young adult searching for work opportunities online. One day, he receives a message from his cousin, Lisa, informing him that her father has recently passed away. Lisa asks the protagonist whether he is willing to take over her father's fishing and fish-selling business located at Crescent Bay Harbor. Hoping to start a new life and career, the protagonist accepts the offer and travels to Crescent Bay.

Upon arriving at the harbor, the protagonist discovers a small fishing community containing various facilities such as fishing equipment shops, weapon shops, boat

shops, dormitories, and a fish market. Lisa then introduces the protagonist to the daily life of a fisherman and guides him through the basics of fishing and fish selling.

The protagonist also encounters a woman asking for help to rescue her kidnapped daughter from pirates operating on a remote island. This event introduces the side-story mission, where players must travel to dangerous areas, fight pirate enemies, and defeat the pirate leader to rescue the hostage.

### 3.3 Gameplay Mechanics

#### 3.3.1 Core Gameplay Loop



Figure 2. Core Gameplay Loop Diagram

The core gameplay loop in *Crescent Bay* revolves around fishing, selling fish, earning rewards, upgrading equipment, and exploring new areas. Players begin each day by preparing equipment and travelling to the sea to catch fish. After returning to the harbor, players can sell the fish they catches to earn money and fame points.

The rewards earned can then be used to purchase better fishing rods, weapons, and boats, allowing players to access more dangerous sea zones containing rarer fish and valuable materials. Players can also accept tasks from NPC clients to gain additional rewards and progress through side-story content.

The gameplay loop is designed to provide continuous progression while maintaining a relaxing and casual gameplay experience.

### 3.3.2 Fishing Mechanics



Figure 3. Crescent Bay Fishing Mechanics

Fishing is the primary gameplay mechanic in Crescent Bay. Players use fishing rods to catch different species of fish in various sea zones. At the beginning of the game, players receive a Level 1 Bamboo Fishing Rod.

To catch fish, players must cast the fishing rod into the water by clicking left mouse and wait for a fish to bite the bait. Once a fish is hooked, a Quick Time Event (QTE) mini game appears. During the QTE sequence, players must control an indicator within a target area on a rail bar using mouse input. When maintaining the indicator within the target area, it fills the catch progress bar until full to allow the player to catch the fish.

Different fishing zones contain different fish rarity levels:

- Zone 1 mainly contains 1-star fishes.
- Zone 2 mainly contains 2-star fishes.
- Zone 3 mainly contains 3-star fishes.

Fishes that are of higher rarity will be harder to catch, as in they appear less and the QTE will be harder to complete, but that also means the fishes will sell for higher in value.

### 3.3.3 Fish Selling System



Figure 4. Crescent Bay Fish Selling System

After fishing, players return to the fish shop located at Crescent Bay Harbor to sell their catches. Players interact with the cashier machine to begin the selling session.

During the selling process, customers place fish orders within a limited time period. Players must drag the correct fish from their inventory or fish tank inventory onto the cutting board before selling them. Successfully fulfilling orders rewards the player with money and fame points. The number of customer orders increases as the player gains more fame points.

Incorrect fish orders, dead fish, or rotten fish may result in penalties that reduce the player's earnings or reputation.

Fish freshness is also an important gameplay mechanic:

- Fish stored normally become dead fish on the next day
- Dead fish become rotten fish on the next day
- Fish placed inside the fish tank remain alive longer

### 3.3.4 Exploration System



Figure 5. Crescent Bay Sea Zones Imagery

Players can freely explore the sea and nearby islands using boats. The world of *Crescent Bay* contains three sea zones arranged sequentially from the harbor outward.

#### **Zone 1**

Zone 1 is the safest area and is located closest to the harbor. This zone mainly contains common fish species (1-star) and minimal danger. However, seagulls may steal fish stored in the boat inventory.

#### **Zone 2**

Zone 2 contains stronger fish species(2-star), a small island with collectible materials, and shark attacks. Sharks may damage the player's raft while exploring the area.

#### **Zone 3**

Zone 3 is the most dangerous area in the game. This zone contains rare fish species(3-star), shark attacks, pirate patrol boats, and a large island occupied by pirates. Players may encounter combat situations while exploring this zone.

Exploration encourages players to upgrade their equipment in order to survive increasingly dangerous environments and obtain better rewards.

### 3.3.5 Resource Collection System

Players can collect materials from islands during exploration. The collectible materials include:

- Iron Ore
- Bauxite Ore
- Coal Ore

Collected materials are used for purchasing and upgrading weapons. Players may also sell collected materials to the weapon shop in exchange for additional money. This mechanic provides alternative methods for earning income and encourages exploration activities.

### **3.3.6 Combat Mechanics**

Combat occurs during pirate encounters, harbor attack events, and side-story missions. Players can equip weapons to defend themselves against enemies. Available weapons include:

- Spear
- Pistol
- SMG

Pirate enemies patrol dangerous sea zones and attack the player when approached. The side-story boss battle contains multiple combat phases with increasing difficulty, requiring players to dodge attacks and find opportunities to counterattack.

### **3.3.7 NPC Task System**

Players can interact with NPC clients located around Crescent Bay Harbor to accept optional tasks.

Tasks usually require players to:

- Catch specific fish
- Collect certain materials

Completing tasks rewards players with additional:

- Money
- Fame points

### 3.4 Art Design

#### 3.4.1 Visual Style



Figure 6. Image of Town of Crescent Bay

Crescent Bay uses a low-poly 3D art style as the main visual direction of the game. The low-poly style was chosen to create a simple, stylized, and visually appealing environment while maintaining smooth performance on mid-range hardware devices.

The game combines bright colors, simplified geometric models, and stylized textures to create a relaxing and immersive atmosphere suitable for casual simulation gameplay. Compared to realistic graphics, the low-poly visual style helps reduce visual complexity while still maintaining environmental detail and player immersion.

### 3.4.2 Environment Design



Figure 7. Establishing Shot of Crescent Bay

The game world is centered around Crescent Bay Harbor, which acts as the main hub area for player activities. The buildings are inspired by European coastal town architecture, create a warm and peaceful harbor environment suitable for the fishing simulation gameplay experience. The harbor contains various important locations such as:

- Fish shop
- Weapon shop
- Fishing rod shop
- Boat shop
- Dormitory
- Restaurant area
- Docking area

The environment design combines natural coastal landscapes with stylized urban elements to create a peaceful fishing village atmosphere. The sea surrounding the harbor is divided into multiple exploration zones with increasing levels of danger and rewards. This environmental progression encourages players to explore further areas as they upgrade their equipment and

boats. Several environmental elements are designed to improve immersion and exploration, including:

- Rocky cliffs
- Pine forests
- Beaches
- Wooden docks
- Stone walkways
- Bridges
- Coastal railings
- Lighthouse landmark

### 3.4.3 Characters' Design



The character models use low-poly and simplified body structures, stylized proportions, and minimal facial details. Despite the simplified design, the NPCs remain visually recognizable and suitable for a casual simulation game. The simplified low-poly character design also helps reduce animation complexity and improves rendering performance while maintaining a lively harbor atmosphere.

The character types include:

- Shopkeepers
- Customers
- Pirates
- Story-related characters

## 3.5 UI and UX Design

### 3.5.1 User Interface Design



Figure 8. Pause Menu Design

The UI uses large buttons, rounded panels, bright colors, and minimalistic layouts to ensure readability and accessibility for players. The interface design emphasizes simplicity and ease of navigation to support the casual gameplay experience. Most interface elements use soft color tones such as orange, yellow, blue, and white to create a friendly and relaxing atmosphere that matches the coastal environment of the game.

### 3.5.2 Main Menu Design



Figure 9. Main Menu Design

The menu interface features the harbor environment and lighthouse as the background scene to immediately introduce the visual identity and atmosphere of Crescent Bay. Large, stylized text buttons are used to improve visibility and make navigation simple for players. The game logo is displayed prominently to strengthen the branding and identity of the project.

### 3.5.3 In-Game HUD Design



Figure 10. Crescent Bay HUD Display

The HUD includes:

- Inventory slots
- Health bar
- Boat health bar
- Money display
- Fame point display
- Tutorial guidance display

The inventory system is displayed at the top-left corner of the screen, allowing players to quickly access equipped items by pressing 1-7 number key. Player status health are displayed on the top-right side of the screen to provide immediate visual feedback during exploration and combat situations. Tutorial objectives are displayed on the left side of the screen to guide players through gameplay progression.

### 3.5.4 Shop Interface Design

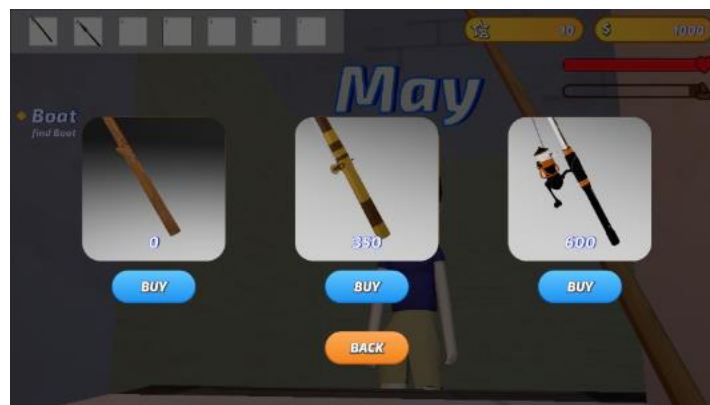


Figure 11. Fishing Rod Shop UI

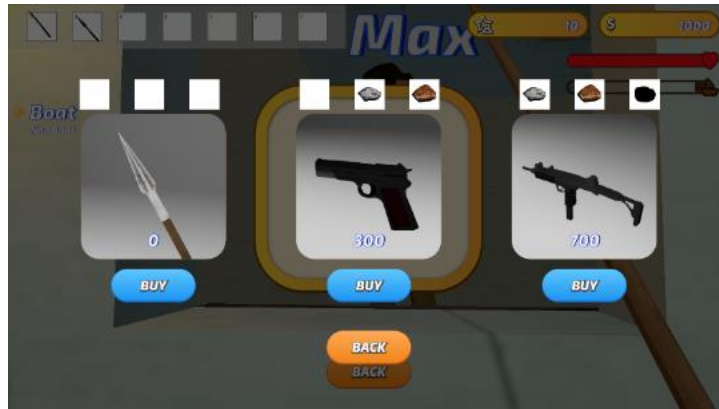


Figure 12. Weapon Shop UI

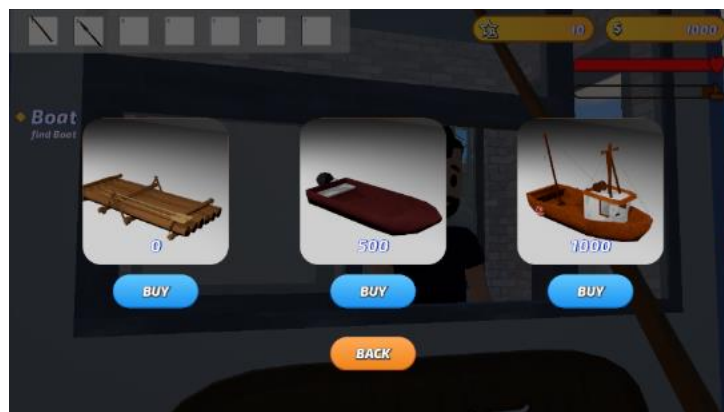


Figure 13. Boat Shop UI

The game contains multiple shops such as Fishing rod shop, Weapon shop, and Boat shop, each shop interface uses a similar layout structure to maintain interface consistency throughout the game.

The shop UI displays:

- Item image previews
- Item prices
- Purchase buttons
- Required materials for advanced equipment

The equipment progression is visually presented from lower-tier items to higher-tier items, helping players understand progression clearly. The weapon shop also contains a material-selling system where players can sell collected ores and resources for additional money.

### 3.5.5 Pause Menu Design



Figure 8. Pause Menu Design

By pressing ESC to open pause menu provides players with quick access to important game functions such as:

- Tasks (To view the active quest info)
- Save (To save the game)
- Settings (Adjust BGM and SFX volume)
- Exit (Exit the game)

### 3.5.6 User Experience Design

The UX design of Crescent Bay focuses on creating a relaxing, simple, and beginner-friendly gameplay experience. Gameplay systems such as fishing, shopping, exploration, and quest tracking are designed to be straightforward and intuitive so that players can quickly understand the game mechanics without extensive tutorials.

## 3.6 Audio Design

The game uses a combination of:

- Background Music (BGM)
- Environmental Audio
- Sound Effects (SFX)
- User Interface Audio

Different music and sound effects are assigned to different gameplay situations to create emotional variation and improve player immersion throughout the gameplay experience.

### **3.6.1 Background Music**

Each gameplay situation uses different music to create emotional distinction and improve player engagement such as:

- Main Menu Music (coastal and casual)
- Daytime Harbor Music (calm and relaxing)
- Harbor Evening Music (slower and calmer tone)
- Boat Exploration Music (sense of adventure)
- Fish Shop Music (light and active)
- Combat Phase Music (tension and excitement)
- Post-Battle Phase Music (emotional relief and accomplishment)

### **3.6.2 Environmental Audio**

Different environments use different ambient sounds depending on the location and gameplay situation. Peaceful harbor areas use softer environmental sounds to create a calm and relaxing atmosphere, while dangerous exploration zones use stronger ocean and wind ambience to increase tension and create a sense of isolation during sea exploration.

Examples of environmental sounds include:

- Ocean waves
- Middle ocean ambience
- Wind ambience
- Harbor atmosphere
- Boat movement sounds
- Water splash effects
- Cave ambience
- Seagull sounds

Different surfaces also use unique footstep sound effects, including:

- Rock footsteps
- Sand footsteps
- Wooden footsteps

### **3.6.3 Sound Effects**

#### **3.6.3.1 Fishing Sound Effects**

Fishing interactions use multiple sound effects to simulate the fishing process and improve realism. Fishing-related sound effects include:

- Fishing rod casting
- Fishing line pulling
- Reel pulling sounds
- Fish retrieval sounds

Different fishing rods use different pulling sound effects as they are different material and structure to distinguish progression between equipment levels. The upgraded fishing rods use spinning reel audio effects to create a stronger sense of progression and equipment improvement.

#### **3.6.3.2 Boat Sound Effects**

Different boats contain unique movement and idle sound effects to increase environmental immersion while traveling across the sea. Boat audio includes:

- Boat engine sounds
- Water splash effects
- Boat accelerating
- Raft rowing

#### **3.6.3.3 Fish Selling and Shop Sound Effects**

The fish-selling system and shop interactions use multiple sound effects to simulate fish packaging and selling activities. These sound effects help reinforce player actions and make the shop systems feel more interactive and satisfying.

- Fish cutting sounds
- Plastic bag packing sounds
- Cash register “ka-ching” sound

#### **3.6.3.4 Weapon and Combat Audio**

Combat interactions use impactful sound effects to increase gameplay intensity during pirate encounters and boss battles. The spear uses thrusting and impact sound effects to emphasize close-range melee combat. The pistol and SMG uses more aggressive shooting audio to create stronger combat intensity during advanced gameplay stages.

Examples include:

- Spear thrust sound
- Spear hit sound

- Gun Shooting sound
- Bullet impact sound

### **3.6.3.5 User Interface Audio**

The user interface uses simple and responsive sound effects during menu navigation and interactions. These sounds improve usability by providing immediate confirmation whenever players interact with menus and interface elements.

Example include:

- Button selection
- Purchasing items
- Opening menus / panel

## **3.7 3D Assets**

All 3D Assets contributed by me were created in 3Ds Max 2024, and textures were made using Photoshop or Substance Painter. All models used UV Unwrapping for more efficient colour placement.

### **3.7.1 Shop Buildings**



Figure 14. Fish Shop



Figure 15. House



Figure 16. Equipment Shop



Figure 17. Weapon Shop

The buildings in Crescent Bay were designed based on the style of European coastal towns such as Venice, Italy and Corfu Town, Greece. With low polygon counts for optimization of the game when the player is exploring the town, the texture of the buildings are one of simplistic yet colourful designs with hints of decolouration and dirt stains, while wooden parts such as the sign, window frames, and door frames all decorate the buildings to make them appear homey and welcoming.

### 3.7.2 Fish Shop Interior

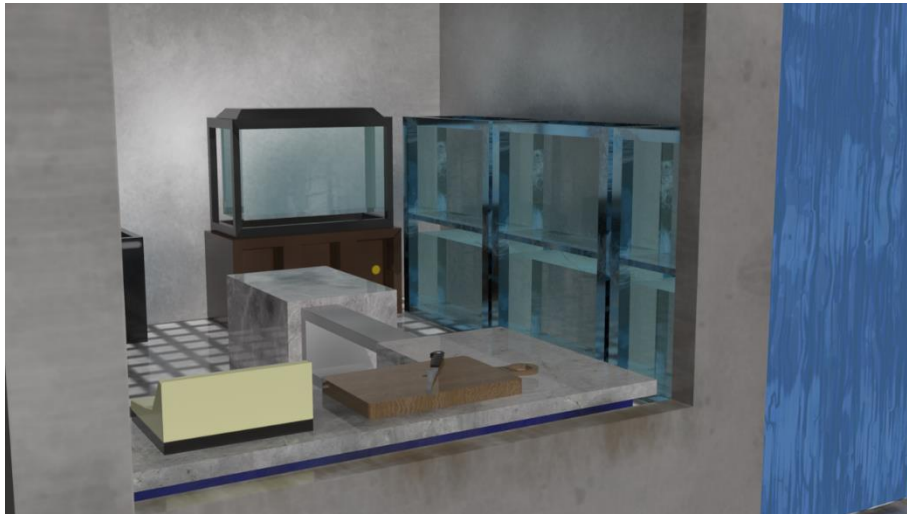
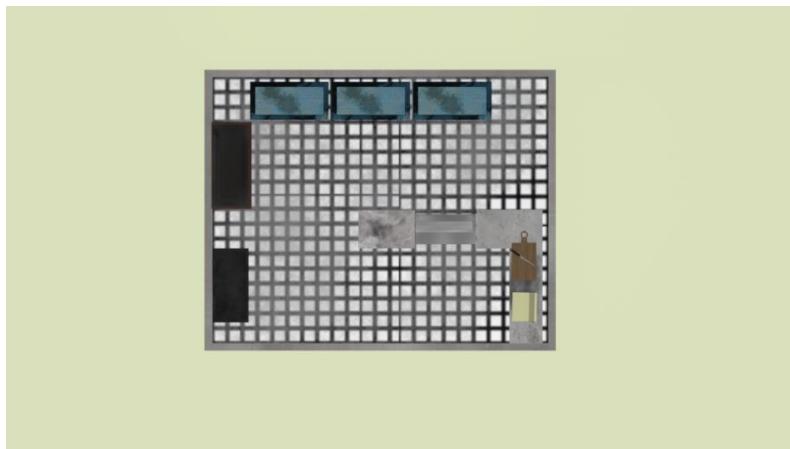


Figure 18. Interior of Fish Shop from Outside



The layout of the interior was sketched out in black and white and presented to teammates for approval before moving on to 3D modelling. In the modelling stage, I took inspiration from fish shops in real life, where the area is visibly crowded with fish tanks, there are dirt stains and cracks on the floor, ceiling, walls, and counter. The areas that are used the most often on the table, such as for placing fishes, will be the dirtiest and darkest. Similarly with the walls, the areas where fish tanks are located will have the darkest stain on the walls to give a sense of time passing and visual realism. Decorations were kept to a minimum to avoid overloading the scene with too many assets.

### 3.7.3 Fish Shop Interior Objects

Figure 19. Top Down View of Fish Shop

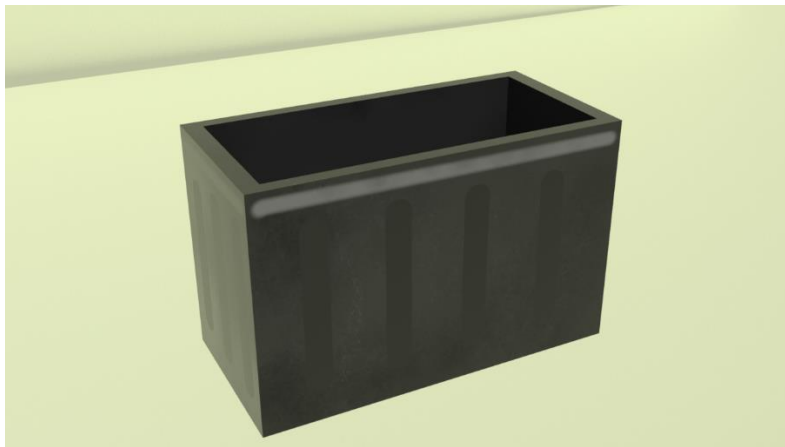


Figure 20. Inventory Box

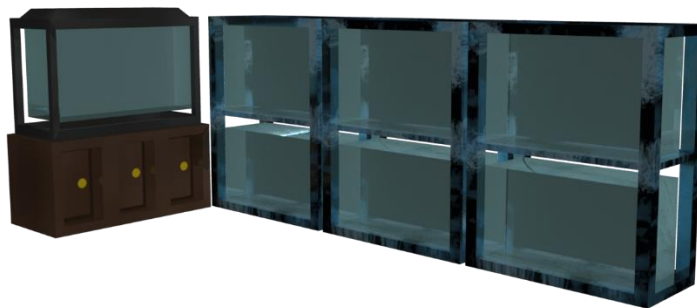


Figure 21. Fish Tanks

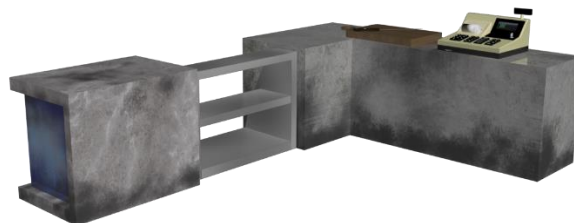


Figure 22. Counter, Chopping Board, Knife, Shelf, Cash Register

Objects inside the fish shops are partially taken inspiration from real fish shop displays and partially individual artistic approach. The cash register on the counter was taken from an online free resource, I changed the texture to make the keys on the cash register make more sense. The knife used is a type of knife that is especially for cutting fish. While the fish tanks are inspired by actual fish tanks in seafood restaurants, where tanks are stacked on top of each other on metal rack shelves.

#### **3.7.4 Restaurant**



Figure 23. Restaurant



Figure 24. Potted Plant



Figure 25. Restaurant Chair, Table

### 3.7.5 Lighthouse

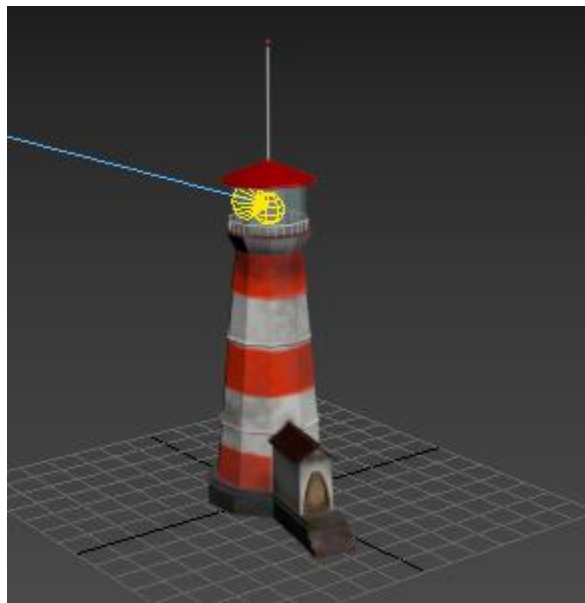


Figure 26. Lighthouse

### 3.7.6 Shark

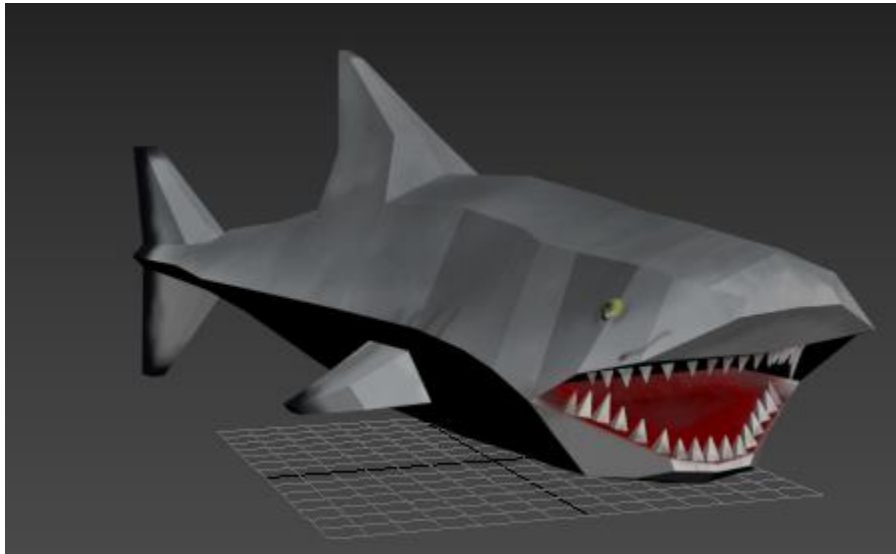


Figure 27. Shark

### 3.7.7 Three Star Fishes



Figure 28. Bluefin Tuna



Figure 29. Atlantic Salmon



Figure 30. Catfish

### 3.7.8 Two Star Fishes



Figure 31. Twaite Shad



Figure 32. Common Carp



Figure 33. Freshwater Bream

### 3.7.9 One Star Fishes

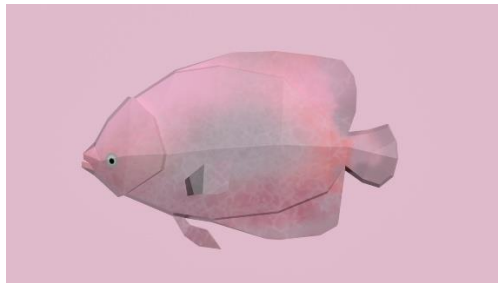


Figure 34. Pink Gourami



Figure 35. Yellow Perch



Figure 36. Roach Fish

### 3.7.10 Fishing Rod



Figure 37. Fishing Rod (level 3)

Fishing rod was taken from online free resource, I edited the texture to make the rod a different colour to better match the overall colour scheme of the game, and reanimated the animations for reel casting, pulling, successfully catching a fish, etc.

### 3.7.11 Seagull



Figure 38. Seagull

Rigged and animated low-poly seagull that was originally going to be implemented in the game to land on the player's boat to steal fishes. Unable to accomplish due to development changes.

### 3.7.12 Other Shop Decorations

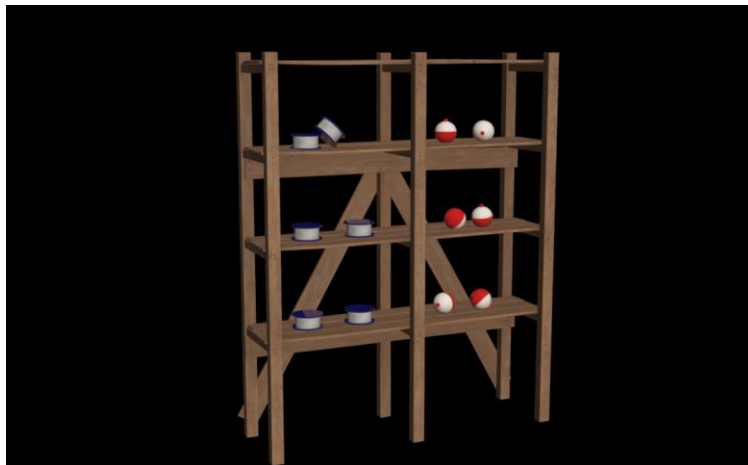


Figure 39. Fishing line and barbers on shelf



Figure 40. Fishing Rod Rack



Figure 41. Gun Rack

## 3.8 Methodology

### 3.8.1 Introduction

This part of the chapter outlines the research methodology employed to investigate the impact of enactive realism on immersion and player engagement in Crescent Bay. Given free-flow exploratory nature of the study and the focus on a specific game design intervention, a mixed-methods case study approach was selected. The research design, sampling strategy, data collection procedures, and analysis will all be detailed in the following, justification provided for each choice as well.

### 3.9 Research Design: Mixed-Methods Case Study

This study adopts a convergent parallel mixed-methods design, where quantitative and qualitative data are collected at the same time, analyzed separately, then combined together to interpret the results. (Creswell and Clark, 2017)

- **Justification:** A purely quantitative approach like surveys would fail to capture the nuanced quality of the "enactive" experience (how it felt to reel in a fish). Conversely, a purely qualitative approach would lack objective metrics to measure engagement duration. By combining willing playtime (quantitative) with semi-structured interviews (qualitative), this design manages data to provide a more holistic view of player engagement.
- **Case Study Selection:** Crescent Bay serves as the primary case study. It is a suitable subject because it purposefully highlights the variable of game mechanics fidelity while holding visual fidelity constant. This allows for a direct test of the hypothesis that the visual presentation of an activity being performed matching the level of complexity of the action increases immersion and player engagement with the game.

### 3.10 Sampling Strategy

#### 3.10.1 Sampling Frame and Technique

The study utilizes purposive sampling to recruit participants. The target population consists of casual gamers aged 18–30 who have experience with simulation or adventure games but are not necessarily fishing enthusiasts.

- Justification: Intentional sampling ensures that participants have the baseline literacy to understand game mechanics and provide meaningful feedback on "realism," avoiding the outlier of a non-gamer's confusion.
- Sample Size: The study targets  $N = 3-5$  participants.
- Justification: In qualitative case studies, the goal is data saturation rather than statistical generalizability. A sample of 3-5 is sufficient to identify recurring patterns in player behaviour and sentiment while remaining manageable for in-depth interviewing within the constraints of a final year project.

### **3.10.2 Access to Data**

Participants will be recruited through university clubs, social media groups, and personal networks. Access to the game will be provided via a playable build of Crescent Bay hosted at the Final Year Project Exhibition: Outplayed 2026 WorkStation Booth. Informed consent will be obtained prior to participation, ensuring all data is anonymized and used solely for academic purposes.

### **3.11 Data Collection Procedures**

Data collection occurs in two phases: Observation and Interview.

#### **3.11.1 Phase 1: Willing Playtime Observation (Quantitative)**

Participants will be instructed to play Crescent Bay freely for as long as they wish, with no time limit imposed by the researcher.

- Procedure: A timer is started on mobile phone once player clicks on "New Game", which records the total session duration from launch to exit.
- Metric: Willing Playtime serves as the primary quantitative indicator of intrinsic motivation and engagement. Longer playtimes suggest that the game successfully satisfied the player's psychological needs (SDT).
- Justification: Unlike forced playtests, willful playtime reflects genuine interest. If players stop early, it indicates a failure in engagement; if they continue, it validates the efficacy of the enactive mechanics.

### **3.11.2 Phase 2: Semi-Structured Interviews (Qualitative)**

Once the play session ends, a 10 minute semi-structured interview will be conducted in person.

- Interview Guide: Questions are designed to probe the specific research questions regarding enactive realism and SDT.
  - Competence: "Did you feel a sense of mastery when catching fish? Was the difficulty fair?"
  - Enaction: "Did the mechanics feel like 'real' fishing, or did they feel like a game? How did the effort compare to your expectations?"
  - Visuals vs. Mechanics: "Did the low-poly graphics distract you from the gameplay, or did they fit the experience?"
  - Comparison: "How does this compare to other simulation games you have played (e.g., Vacation Cafe Simulator)?"
- Recording: Interviews will be transcribed for thematic analysis.

## **3.12 Data Analysis Plan**

### **3.12.1 Quantitative Analysis**

- Method: Descriptive statistics will be calculated for Willing Playtime (mean, median, standard deviation).
- Analysis: The data will be examined to identify trends. For instance, if the average playtime exceeds 30 minutes (a typical threshold for casual engagement), it will be interpreted as a positive indicator of the game's ability to sustain interest.

### **3.12.2 Qualitative Analysis**

- Method: Thematic Analysis (Braun & Clarke, 2006) will be applied to the interview transcripts.
- Procedure:
  1. Familiarization: Reading transcripts to identify initial ideas.

2. Coding: Generating codes for key concepts (e.g., "tangible effort," "visual distraction," "sense of achievement").
3. Theme Development: Grouping codes into broader themes (e.g., "Mechanics as Immersion Driver," "Visual Abstraction Acceptance").
4. Triangulation: Comparing the qualitative themes with the quantitative playtime data. Example: Do players who played the longest also report the highest sense of "Competence" in the interviews?

### **3.13 Ethical Considerations**

- Informed Consent: All participants will sign a consent form detailing the study's purpose, data usage, and their right to withdraw.
- Anonymity: All data will be anonymized; participants will be assigned pseudonyms (e.g., P1, P2) in the final report.
- Data Security: Audio recordings and transcripts will be stored on a password-protected drive and deleted after the thesis submission.

### **3.14 Summary**

This methodology provides a robust framework for evaluating Crescent Bay. By combining objective playtime metrics with subjective interview insights, the study effectively addresses the research questions regarding enactive realism. The purposive sampling and thematic analysis ensure that the findings are grounded in the actual experiences of the target audience, offering actionable insights for indie game development.

# CHAPTER 4: RESULT & ANALYSIS

## 4.1 Introduction

This chapter presents the findings from the pilot study where three participants playtested Crescent Bay. The data includes quantitative metrics, such as how long they played and how much they progressed, and qualitative insights gathered from interviews. The results are analyzed to see if enactive realism actually helps players feel more immersed and engaged.

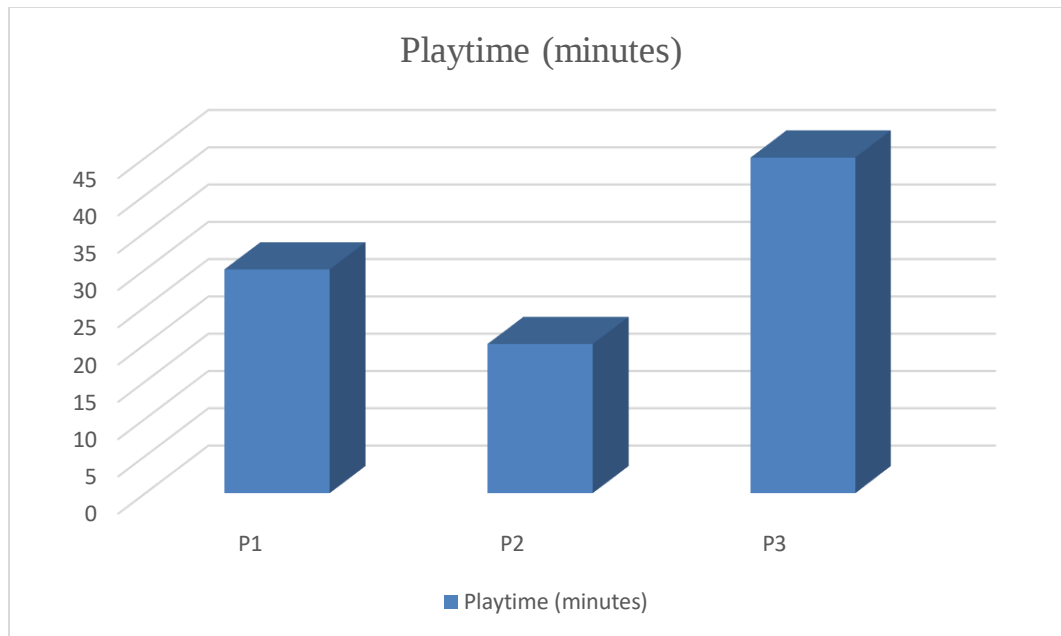
## 4.2 Participant Profile and Quantitative Data

Three participants were selected to represent different types of players: a Game Student, a Competitive Gamer, and a Casual Gamer.

Table 4.1: Participant Details and Play Statistics

| Participant ID | Player Type       | Playtime (minutes) | In-Game Days Completed | Main Focus During Play               |
|----------------|-------------------|--------------------|------------------------|--------------------------------------|
| P1             | Game Student      | 30                 | 5                      | Completing the main loop efficiently |
| P2             | Competitive Gamer | 20                 | 3                      | Speed and optimization               |
| P3             | Casual Gamer      | 45                 | 4                      | Exploring the sea and side content   |

Table 4.1: Total Playtime by Participant



#### Analysis of the Numbers:

- **Highest Engagement: P3 (Casual Gamer)** played the longest at 45 minutes. They spent a lot of time exploring the ocean and doing extra tasks. This suggests that the freedom to explore and the story elements kept them interested.
- **Efficiency vs. Fun: P1 (Game Student)** finished the most in-game days (5) in a shorter time. They seemed focused on finishing the core tasks quickly. Their session ended sooner than P3's, possibly because they felt they had seen enough of the main loop.
- **Shortest Session: P2 (Competitive Gamer)** played for the shortest time (20 minutes) and completed the fewest days. This suggests that the slower pace of the game did not match their expectation for fast rewards and quick progress.

#### 4.3 Qualitative Findings: Interview Results

The interviews were analyzed to find common themes. Three main topics came up: how players felt about the effort required, the mix of graphics and mechanics, and their sense of achievement.

##### 4.3.1 Theme 1: Perception of Effort

Participants were asked if the fishing felt realistic or like a simple game.

- **P1 (Game Student):** "The reeling mechanic felt different. I had to manage the tension instead of just pressing a button. It felt like I was actually working for the fish. It required focus but was not frustrating."
  - Interpretation: P1 understood the design goal. The effort felt like a positive challenge that made them feel skilled.
- **P2 (Competitive Gamer):** "It felt a bit slow. I wanted to catch more fish faster. The tension mechanic made me miss a few catches, which was annoying. I expected a quicker reward."
  - Interpretation: For P2, the realistic effort felt like a barrier. The slowness made the game feel inefficient, which hurt their enjoyment.
- **P3 (Casual Gamer):** "I loved the pacing. Having to wait and watch the bobber, then carefully reel it in, made the catch feel special. It was not just a number going up."
  - Interpretation: P3 saw the effort as part of the fun. The wait made the reward feel more valuable, which increased their satisfaction.

#### 4.3.2 Theme 2: Visuals and Mechanics Working Together

Participants were asked if the simple graphics made the game feel less real.

- **P1:** "The graphics are simple, but the physics feel heavy. The boat sways realistically. The visuals did not break my immersion because the mechanics carried the experience. But the camera was a bit too sensitive and it put me off from playing for longer."
- **P2:** "The graphics are fine, I like how the fishes look and love that they're based on real fishes. Maybe more visual cues would help with a satisfying experience."
- **P3:** "The low-poly style is cute and relaxing. It fits the vacation vibe. I didn't really care that it was not photorealistic because the feeling of fishing was real."
  - Summary: All three agreed that the simple graphics did not ruin the experience. P1 and P3 specifically said that the mechanics made the game feel real, even without high-end graphics. This supports the idea that good mechanics can make up for simple visuals.

### 4.3.3 Theme 3: Sense of Achievement

Participants were asked if they felt a sense of accomplishment.

- **P1:** "Completing 5 days felt like real progression. I felt like I was building a business. And I really enjoyed the cozy vibes."
- **P2:** "I stopped because I felt I had figured out the system quickly. Once I knew the pattern, the challenge dropped."
- **P3:** "Exploring the new islands and finding rare fish gave me a huge sense of accomplishment. I felt like a real explorer."
  - Summary: P3 felt the most accomplished because of the variety and exploration. P2 felt the game became too easy too quickly. P1 felt a steady sense of progress.

## 4.4 Discussion of Findings

### 4.4.1 Effort and How Long People Played

The data shows a link between how players felt about the effort and how long they played, but this depends on the type of player. (For a full breakdown of the interview, see Appendix A.)

- **Casual Gamers:** For players like P3, the realistic effort plus the comforting graphics made the game more engaging. The 45-minute session shows they were genuinely enjoying the experience.
- **Competitive Gamers:** For players like P2, the same effort made the game less fun. They viewed the slowness as a negative, which led to a shorter play session.
- **Conclusion:** The design of Crescent Bay works well for casual players who want a relaxing experience. However, it might need adjustments, such as a more dynamic fishing techniques, or diverse rewards, to keep competitive players interested.

### 4.4.2 Simple Graphics vs. Real Mechanics

The findings strongly support the idea that real mechanics can make up for simple graphics.

- P1 and P3 both said that the "feeling" of the game (the weight of the rod, the movement of the boat) created a sense of realism that the simple graphics did not ruin.
- This confirms the concept of Balanced Enaction. The charm of the visuals combined with the depth of the mechanics creates a unique experience that is both relaxing and engaging.

#### 4.4.3 Meeting Player Needs

- **Competence:** Players felt skilled when they mastered the fishing mini-game.
- **Autonomy:** Players felt free when they could choose where to fish and explore.
- **Relatedness:** While not the main focus in such short sessions, P3 mentioned enjoying the story of the town, which suggests the game has potential to build connections with characters.

#### 4.5 Limitations of the Pilot Data

- **Small Sample Size:** With only three participants, the results are just a starting point and cannot be applied to everyone. The difference between P2 and P3 shows that we need more players to confirm these trends.
- **Short Sessions:** The play sessions were short (20 to 45 minutes). We could not see how players would feel after playing for days or weeks.
- **Bias:** The participants were friends or peers, which might have influenced their feedback. They might have been more polite or critical than a stranger would be.

#### 4.6 Conclusion

This pilot study provides early evidence that enactive realism is a good strategy for making stylized simulation games feel immersive. The data shows that while "effortful" mechanics might not appeal to players who want fast action, they significantly improve the experience for casual players who enjoy the satisfaction of mastering a realistic task. The simple visual style was not a problem, proving that mechanical consistency is the most important factor in making *Crescent Bay* feel real.

Future studies should include more players with different backgrounds to better understand how to balance challenge and accessibility for all types of gamers.

## **CHAPTER 5: DISCUSSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter summarizes the key findings of the study and interprets how they address the research problem. It discusses the implications of the results regarding enactive realism and player engagement in Crescent Bay. The chapter also reflects on the limitations of the study, suggests directions for future research, and offers recommendations for the continued development of the game.

### **5.2 Interpretation of Results**

The study aimed to determine whether enactive realism could enhance immersion in a game with stylized visuals. The results from the three participants provide clear evidence that this approach is effective, but its success depends heavily on the player's motivation.

#### **5.2.1 Solving the Problem Statement**

The problem statement highlighted a gap in understanding how mechanical realism affects engagement when visuals are not photorealistic. The findings confirm that mechanical consistency is more important than visual fidelity for creating a sense of immersion.

- **P1 and P3** reported that the effort required to reel in a fish made the experience feel authentic. They did not miss high-end graphics because the work they did in the game felt meaningful and wasn't too difficult that they couldn't relax.
- This solves the problem by proving that developers can create deep, immersive simulation games without the high cost of photorealistic rendering, provided the mechanics feel real and responsive.

#### **5.2.2 The Appeal of Virtual Manual Labor**

An important finding from the interviews is the unique appeal of performing manual labor in a game setting. In real life, jobs like fishing or moving resources can be tiring, repetitive, and stressful. However, in Crescent Bay, these same activities were described as "fun" and "relaxing."

- **P3 (Casual Gamer)** explained that the pacing of the fishing mechanic made the catch feel satisfying. The effort created a sense of value that a simple button pressing action could not provide.
- **P1 (Game Student)** noted that managing the tension of the rod made them feel like they were actually skilled at fishing.
- This supports the idea that players are attracted to simulation games because they offer a safe, controlled and predictable version of labour. In the game, the work that players do has immediate, positive rewards, such as money and reputation and no real-world consequences such as fatigue and damage. This transforms a mundane or difficult real-life task into a source of competence and achievement. It also gives players a chance to experience a field of expertise they might not have the chance to come into contact with in real life. For example, we live in an urban city and neighbourhood with no direct access to harbours or ships, and thus cannot venture out to sea to fish. We also don't have easy access to fishing equipment, these are all solved within the game's premise and can fulfil players' imagination.

### 5.2.3 Addressing the Hypotheses

The results largely support the hypotheses proposed in Chapter 2:

- **H1 (Enactive Mechanics and Competence):** Supported. Players who enjoyed the effort reported higher feelings of mastery. The mechanic of working for the fish directly satisfied their need for competence.
- **H2 (Authentic Agency):** Supported. Players felt their actions mattered because the outcome depended on their skill and timing, not just luck.
- **H3 (Visuals vs. Mechanics):** Supported. The low-poly visuals did not stop players from feeling immersed. The mechanics carried the experience. The art style made players feel endearment and charmed.
- **Exception: H1** was not fully supported for P2 (Competitive Gamer). For this player, the effort felt like a barrier to efficiency. This suggests that while enactive realism works for casual players, it may need adjustment for those seeking fast-paced optimization.

### 5.3 Significance and Implications

The findings prove certain implications for the game industry, particularly for indie developers.

- **Cost-Effective Design:** Developers do not need expensive graphics engines to create immersive worlds. By focusing on mechanical depth and enactive realism, smaller teams can create high-quality simulation experiences.
- **Understanding Player Motivation:** The study highlights that different players seek different things. Casual players often want the satisfaction of, while competitive players want efficiency. A successful game might need to cater to both by offering different difficulty settings or modes. Or provide a more dynamic gameplay experience. For example, in Crescent Bay, fishing's general mechanism is actually quite linear, and any difficulty scaling is often toned down by players purchasing the best fishing rod, fishes with different kinds of reeling methods might attract competitive players to train their reaction time.
- **The Virtual Job Phenomenon:** The popularity of games like Crescent Bay and Vacation Cafe Simulator suggests a growing trend where players enjoy the structure and routine of work without the stress. This form of digital labour provides a sense of order and accomplishment that is often missing in modern life.

### 5.4 Limitations of the Study

While the study provides valuable insights, it has several limitations:

- **Small Sample Size:** With only three participants, the results cannot be generalized to all gamers. The difference between P2 and P3 shows that player types vary greatly, and a larger group is needed to confirm these patterns.
- **Short Playtime:** The sessions were limited to under 45 minutes. We did not see how players would feel after playing for hours or days. Long-term engagement might reveal different trends.
- **Participant Bias:** The participants were peers and friends, which may have influenced their honesty. They might have been more positive than strangers would be.

## 5.5 Future Directions

To build on this research, future studies should:

- **Expand the Sample:** Recruit a larger and more diverse group of players, including more competitive gamers and non-gamers, to get a broader view of how enactive realism is received.
- **Longitudinal Study:** Track players over several weeks to see if the novelty of the mechanics wears off or if the sense of achievement grows over time.
- **Compare Genres:** Investigate if the appeal of virtual labor exists in other simulation types, such as farming or construction, to see if this is a universal trend.

## 5.6 Recommendations for Crescent Bay

Based on the findings, the following improvements are recommended for the game:

- **Add Difficulty Options:** To accommodate players like P2, consider adding a "Fast Mode" or "Easy Reel" setting. This would allow competitive players to skip the tedious parts while keeping the core enactive mechanics for those who want them.
- **Enhance Visual Feedback:** While graphics do not need to be photorealistic, adding clearer visual cues could help players like P2 who struggled to identify targets quickly and improve their user experience.
- **Deepen the Gameplay Loop:** Expand the variety of manual tasks. Since players enjoy the feeling of labour, adding more complex tasks, like repairing nets or cleaning the boat could increase the sense of immersion and achievement.

## 5.7 Final Reflection

This study confirms that enactive realism is a powerful tool for creating immersive simulation games. By allowing players to perform realistic, effortful tasks in a safe and rewarding environment, Crescent Bay taps into a unique desire for meaningful work. The results show that players are not looking for a perfect copy of reality, but rather a version of reality where their effort is recognized and rewarded. This approach offers a promising path for future game design, proving that the "feel" of a game is often more important than how it looks.

## **6.0 Conclusion**

In conclusion, despite the common misconception by the game industries and public that realism in games relies heavily on photorealistic graphics, immersion and player engagement can still be achieved with a consistent artistic direction in the game and gameplay mechanics that can create the effect of embodied cognition and enactive realism for players.

Simulation games that let player immerse themselves in a job with an intriguing game loop and dynamic game mechanics that replicate the realistic feeling of performing the job without its real-life physical repercussions have a higher chance of retaining player motivation and engagement. For example, Crescent Bay has the player experience riding their own raft or boat out into the sea, with several types of fishes they can catch, all based on real Mediterranean fishes. Which makes for a realistic setting and gameplay.

Although there are still many shortcomings within the game that can be refined to improve the game's overall gameplay loop and user experience, working on this game has improved my artistic direction and game design skills. I have grasped a better understanding of incorporating enactive realism into a game's visual and mechanical aspects, while balancing fun factors that keep the player motivated to keep playing.

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Fishing Rod, Rigged and Animated by Ergin Eryildir is licensed under CC BY 4.0 on Sketchfab.

Paris Restaurant low-poly by yevheniia is licensed under CC BY 4.0 on Sketchfab.

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## Appendices

### Appendix A

#### Interview Transcript

##### Participant 1: Student A (Game Student)

**Profile:** Female, Indian, Game Design Student **Playtime:** 30 minutes **Progress:** Completed 5 in-game days

**Researcher:** Okay, thanks for trying out the game, P1. You played for about 30 minutes and managed to finish five days. How did the fishing feel? Did it seem realistic to you?

**P1:** Yeah, actually it felt quite different. In many games, you just press a button and *boom*, you get the fish. But here, I really had to manage the tension on the line. If I reeled too fast, the line broke. If too slow, the fish escaped. It felt like I was actually putting in the work to catch it. It wasn't frustrating, but I had to really focus.

**Researcher:** That sounds like the "enactive" part we are studying. Did the simple, low-poly graphics distract you from feeling like it was real?

**P1:** No, not at all. The graphics are simple, yes, but the physics feel heavy. When the boat rocked on the water, it felt real. The visuals didn't break the immersion because the mechanics did the heavy lifting. I didn't need super realistic water to feel like I was on a boat.

**Researcher:** How about the feeling of achievement? Did you feel like you were building something?

**P1:** Definitely. Finishing five days felt like real progress. I felt like I was slowly building a business. Every time I sold a fish and upgraded my rod, it felt like a proper step forward. It wasn't just a score; it felt like a real career.

**Researcher:** Is there anything you would change about the game?

**P1:** Maybe just a bit more variety in the fish types, but overall, the loop was very satisfying. It felt like a complete package for a casual sim.

## **Participant 2**

**Profile:** Female, Chinese, Competitive Gamer **Playtime:** 20 minutes **Progress:** Completed 3 in-game days

**Researcher:** Thanks for coming, P2. You played for 20 minutes and finished three days. Since you usually play competitive games, how did the speed of this game feel for you?

**P2:** To be honest, it felt a bit slow. I wanted to catch more fish, faster. The tension mechanic made me miss a few catches, and that was quite annoying. I expected a quicker reward. In competitive games, if I miss, I can just try again immediately. Here, the waiting felt like a waste of time.

**Researcher:** So, the effort needed to reel in the fish felt like a barrier for you?

**P2:** Exactly. It felt like inefficiency. Once I figured out the pattern, the challenge just dropped. I felt like I had "solved" the system, and then there was nothing left to do. I stopped playing because I didn't feel like I was getting enough value for the time I put in.

**Researcher:** What about the visuals? Did the low-poly style bother you?

**P2:** The graphics are okay, but I couldn't tell the fish apart easily. Maybe more visual cues would help. If I could see the fish types more clearly, maybe I could plan my strategy better. But the main issue was really the speed of the gameplay.

**Researcher:** Did you feel a sense of achievement during those three days?

**P2:** A little bit, but it felt shallow. I caught the fish, but it didn't feel like I "earned" it the way I would in a harder game. It felt more like a chore than a challenge.

**Researcher:** Would you play again if there was a faster mode?

**P2:** Maybe. If there was a way to speed up the reeling without losing the skill part, I might stay longer.

## **Participant 3**

**Profile:** Female, Chinese, Casual Gamer **Playtime:** 45 minutes **Progress:** Completed 4 in-game days (spent time exploring)

**Researcher:** Hi P3. You played the longest, about 45 minutes, and you spent a lot of time exploring the sea. What was your overall feeling?

**P3:** I really liked it. The pacing was perfect. Having to wait and watch the bobber, then carefully reel it in... it made the catch feel special. It wasn't just a number going up. It felt like a real moment of success.

**Researcher:** You said it felt "special." How did the effort of fishing add to that?

**P3:** Well, in real life, fishing can be boring or hard work. But here, the work felt fun. It was relaxing. I liked that I had to be patient. It made the reward feel more valuable. If I could just press a button, it wouldn't feel as good.

**Researcher:** Did the simple graphics fit the vibe for you?

**P3:** Yes, the low-poly style is cute and relaxing. It fits the "vacation" vibe perfectly. I didn't care that it wasn't photorealistic because the feeling of fishing was real. It felt like a nice escape.

**Researcher:** You explored a lot of the sea. Did that give you a sense of freedom?

**P3:** Absolutely. Exploring the new islands and finding rare fish gave me a huge sense of accomplishment. I felt like a real explorer. I could go wherever I wanted, and the game didn't rush me. That freedom is what kept me playing for 45 minutes.

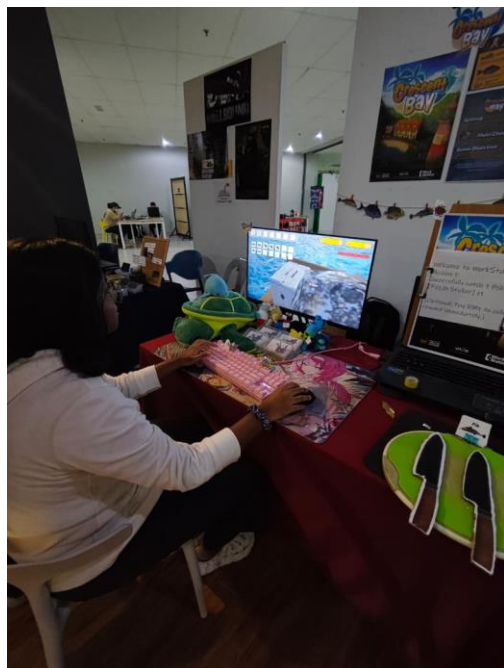
**Researcher:** Would you recommend this to other casual players?

**P3:** Yes, definitely. It's a great game for people who want to relax but still feel like they are doing something meaningful. It's like a digital hobby.

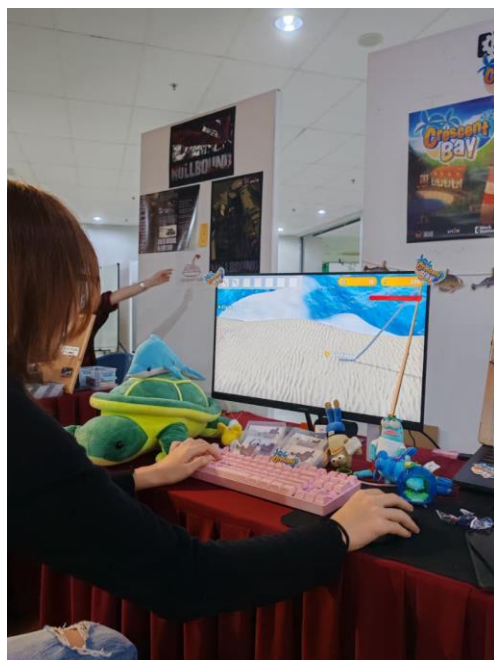
## Appendix B

### Participants Picture

P1



P3



## Appendix C

### Namecard

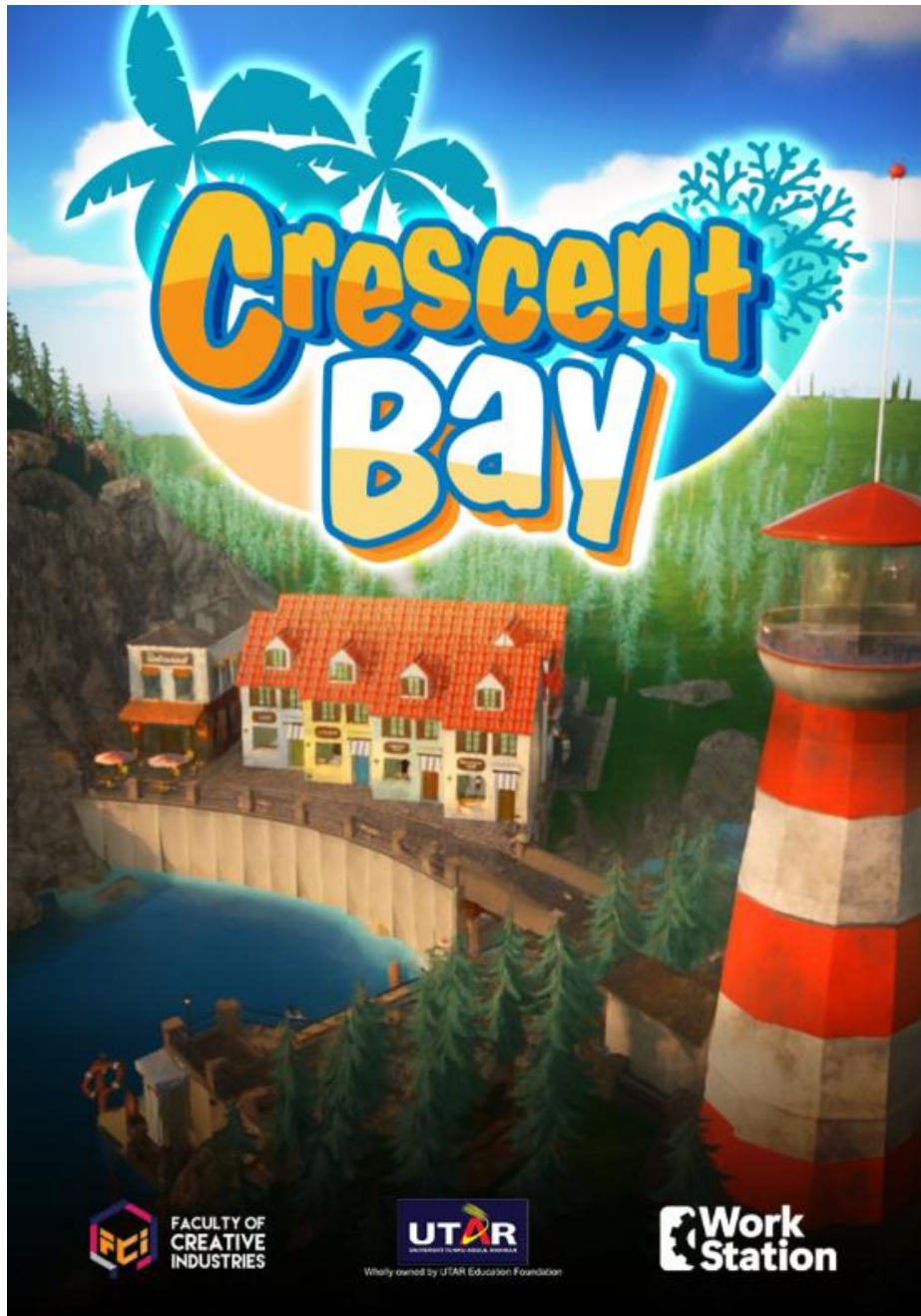
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## Appendix D

### Promotional Materials

#### Posters





## Setting

Based on european and mediterranean regions, Crescent Bay is a coastal fishing town surrounded by open seas and nearby islands.



## Main Character

Player controls Ben, a young man who inherits his late uncle's fishing business at Crescent Bay Harbor.

## Game Objective

To restore the fishing business, the player must catch fish, earn money, gain fame, and improve their equipment to exploring the surrounding ocean.



The town is looking for more than just an ordinary fishmonger, they need someone efficient, competent, and reliable; someone who just might be able to save them from an intruding danger...

Do you have what it takes?



Hil I'm Lisa, a citizen of Crescent Bay! Before I pass the fish shop to you, let me share some fun facts about some of the fishes you can find here!



**COMMON CARP**  
(2 star fish)

While they live about 20 years in the wild, some captive carp can live up to 50 years.



**CATFISH**  
(3 star fish)

Those whisker-like protrusions are called barbels, and they work as sensory tools to feel and taste their surroundings.



**ATLANTIC SALMON**  
(3 star fish)

They are known as the "King of the Fish" and can clear vertical obstacles, weirs, and waterfalls up to 3 meters tall.



**GOURAMI (PINK)**  
(1 star fish)

Gouramis have a specialized "labyrinth organ" that allows them to gulp air from above the water.



Find these fishes in our game by venturing out further in the sea!

## Appendix E

### Logbook

| Project Paper Consultation Logbook |                |
|------------------------------------|----------------|
| Project Title                      | Crescent Bay   |
| Student Name                       | Chong Shu Ning |
| Student ID                         | 2203311        |
| Year/Semester                      | Year 3 Sem 2   |
| Supervisor                         |                |

| WEEK 01                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Comments:</b><br>This week, my groupmates and I finalized our team members and decided on our group name. We also started discussing general ideas for our project and explored a few possible game directions to get things started. We mainly focused on developing the idea of a casual management simulator game where the player has to go out to sea to fish.                                                                                    | <b>Supervisor signature:</b><br><br>Ts. DR. ANG KOK YEOW<br>Deputy Dean<br>Student Development & Industrial Training<br>Faculty of Creative Industries<br>Universiti Tunku Abdul Rahman  |
| Progress (please circle the feedback)<br>1      2      3      4      5<br>Poor      Satisfactory      Good                                                                                                                                                                                                                                                                                                                                                | <b>Date:</b>                                                                                                                                                                                                                                                                 |
| WEEK 02                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                              |
| <b>Comments:</b><br>We had several meetings to go deeper into our game ideas, including gameplay, art style, and story concepts. I began helping with preparing notes and documents. Since we needed to propose two ideas, we worked on a casual management sim fishing game and a 2.5D story-driven puzzle platformer. I focused on researching fish species for the fishing game, gathering reference images, names, sizes, and other relevant details. | <b>Supervisor signature:</b><br><br>Ts. DR. ANG KOK YEOW<br>Deputy Dean<br>Student Development & Industrial Training<br>Faculty of Creative Industries<br>Universiti Tunku Abdul Rahman |
| Progress (please circle the feedback)<br>1      2      3      4      5<br>Poor      Satisfactory      Good                                                                                                                                                                                                                                                                                                                                                | <b>Date:</b>                                                                                                                                                                                                                                                                 |

### WEEK 03

**Comments:**

This week, we continued developing the presentation for both game ideas. I mainly worked on the slides for the 2.5D platformer alongside Yi Chung, including writing the game mechanics and sketching a level design. We also had meetings to discuss the storyline and overall gameplay flow. For the fishing game, we talked about the style of the 3D buildings, and I looked for tutorials and references to help with the modelling process.

**Supervisor signature:**

Ts. DR. ANG KOK YEW  
Deputy Dean  
Student Development & Industrial Training  
Faculty of Creative Industries  
Universiti Tunku Abdul Rahman

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

Date:

### WEEK 04

**Comments:**

We completed our presentation and presented both game ideas to our lecturer. I also started brainstorming a few possible thesis research topics. After meeting with my group, I was assigned to work on the 3D model assets for our final chosen idea, which is the management sim fishing game. I continued researching the fish species we plan to include and started working on modelling the buildings for the town area.

**Supervisor signature:**

Ts. DR. ANG KOK YEW  
Deputy Dean  
Student Development & Industrial Training  
Faculty of Creative Industries  
Universiti Tunku Abdul Rahman

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

Date:

### WEEK 05

**Comments:**

This week, I finished the main 3D model for the building and started working on the interior design for the shop where players will sell fish. I also met with the lecturer for consultation to get feedback and guidance on the next steps.

**Supervisor signature:**

Ts. DR. ANG KOK YEW  
Deputy Dean  
Student Development & Industrial Training  
Faculty of Creative Industries  
Universiti Tunku Abdul Rahman

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

Date:

### WEEK 06

**Comments:**

This week, I finished up the models for all the shops, and also completed the interior for the fish shop where the player will primarily spend their resources in. I helped import these assets into our Unity project. I also modeled a basic fish to be used for the common fish types.

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5

Poor      Satisfactory      Good

**Date:**

### WEEK 07

**Comments:**

I added rigging and animation to the fish and did a few different types of textures for the fish. After a lot of adjustments and tweaking, the common fish (one star fishes) were completed and imported into the Unity Project. I also refined and fixed some texture issues in the town area with the buildings.

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5

Poor      Satisfactory      Good

**Date:**

| Project Paper Consultation Logbook |                |
|------------------------------------|----------------|
| Project Title                      | Crescent Bay   |
| Student Name                       | Chong Shu Ning |
| Student ID                         | 2203311        |
| Year/Semester                      | Year 3 Sem 3   |
| Supervisor                         |                |

| WEEK 01                                                                                                                                                                                                                     |                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Comments:</b> <ul style="list-style-type: none"> <li>Improved Fish Shop interior based on feedback</li> <li>Added new furniture</li> <li>Changed fish tank and storage box designs</li> <li>Improved textures</li> </ul> | <b>Supervisor signature:</b><br>  |
| Progress (please circle the feedback)<br>1      2      3      4      5<br>Poor      Satisfactory      Good                                                                                                                  | <b>Date:</b>                                                                                                          |
| WEEK 02                                                                                                                                                                                                                     |                                                                                                                       |
| <b>Comments:</b> <ul style="list-style-type: none"> <li>Work on modeling the rest of the fishes</li> <li>Created separate 3D models for 2 and 3 star fishes</li> </ul>                                                      | <b>Supervisor signature:</b><br> |
| Progress (please circle the feedback)<br>1      2      3      4      5<br>Poor      Satisfactory      Good                                                                                                                  | <b>Date:</b>                                                                                                          |

### WEEK 03

**Comments:**

- Continue working on modeling the fishes
- Research animal rigging
- Research animal movement, such as seagull flying, shark biting, fishes swimming, etc.

**Supervisor signature:**

Progress (please circle the feedback)

1 2 3 4 5

Poor Satisfactory Good

**Date:**

### WEEK 04

**Comments:**

- Completed the 3D models of all types of fishes
- Work on texture of fishes in Substance Painter
- Implement rigging
- Create 3D model for shark based on online free resource

**Supervisor signature:**

Progress (please circle the feedback)

1 2 3 4 5

Poor Satisfactory Good

**Date:**

### WEEK 05

**Comments:**

- Completed texture of all fishes
- Completed implementation of bone rigging
- Added swimming animation
- Create 3D model for Seagull based on online free resources

**Supervisor signature:**

Progress (please circle the feedback)

1 2 3 4 5

Poor Satisfactory Good

**Date:**

### WEEK 06

**Comments:**

- Implemented bone rigging for shark and seagull
- Created swimming and biting animations for shark
- Created flying and landing animations for seagull

**Supervisor signature:**

Progress (please circle the feedback)

1    2    3    4    5  
Poor      Satisfactory      Good

**Date:**

### WEEK 07

**Comments:**

- Refined 3D model animations.
- Improved fish textures based on feedback
- Fixed fish rigging

A lot of errors encountered with fish and seagull animation due to different fish sizes, limited time and 3Ds Max bone rigging limitations.

**Supervisor signature:**

Progress (please circle the feedback)

1    2    3    4    5  
Poor      Satisfactory      Good

**Date:**

### WEEK 08

**Comments:**

- Created 3D model for lighthouse
- Created 3D model for restaurant
- Added textures for lighthouse and restaurant

**Supervisor signature:**

Progress (please circle the feedback)

1    2    3    4    5  
Poor      Satisfactory      Good

**Date:**

### WEEK 09

**Comments:**

- Created 3D model of potted plant to decorate the harbor
- Created 3D model of chairs, tables, and parasols for the restaurant
- Completed texture of restaurant décor and potted plant.

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

**Date:**

### WEEK 10

**Comments:**

- Had a meeting with teammates to discuss next steps.
- Opened a new branch on Github to start working on cutscene
- Researched animating cutscenes in Unity.
- Start working on cutscene opening scene based on Teck Tean's storyboard
- Created assets for cutscene (Computer, phone)

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

**Date:**

### WEEK 11

**Comments:**

- Created timeline inside Unity scene to direct cutscene
- Completed opening cutscene (total 1 minute 17 seconds)
- Exported to hand to Teck Tean for final editing.

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

**Date:**

### WEEK 12

**Comments:**

- Created 3D model for Level 3 fishing rod based on free asset online
- Created texture for fishing rod
- Added rigging and animation to fishing rod
- Created 3D model of plastic bag to be used for packaging fish to sell.
- Created texture for the plastic bag.
- Made fishes have a path motion for swimming to be used in fish tank.

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

**Date:**

### WEEK 13

**Comments:**

- Created a new branch on GitHub to work on ending cutscene.
- Created timeline inside Unity scene to direct ending cutscene
- Completed ending cutscene, exported and handed to Teck Tean for final editing.
- Created script for side quest dialogue.
- Designed side quest tasks.

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

**Date:**

### WEEK 14

**Comments:**

- Worked on several scenes in Unity timeline for the promotional trailer.
- Exported the scenes and handed to Teck Tean for final editing.
- Assisted in completing the presentation PowerPoint.
- Created 3D assets and added their texture to be implemented into the shops for decoration. (Weapon rack, workbench, fishing rod rack, shelf, stock items)

**Supervisor signature:**

Progress (please circle the feedback)

1      2      3      4      5  
Poor      Satisfactory      Good

**Date:**