

**University of Nevada, Reno**  
**College of Engineering**  
**Department of Computer Science**

**Dragonlord Chronicles**

**Team 18**

Sean Stevens  
Jonathan Meade  
Ryan Lieu  
Christine Vaughan

**Instructors**

Sergiu Dascalu  
Devrin Lee

**Advisor**

Eelke Folmer  
CSE Department Chair

**February 8, 2019**

## Abstract

Dragonlord Chronicles is designed to be an interactive Role-Playing Game (RPG) that can be enjoyed by average players. The primary focus of the game is fighting, capturing, and training dragons in a medieval fantasy setting, taking inspiration from Nintendo's *Pokémon* series. The game offers players with an immersive and engaging narrative experience as well as complex strategy required for many of the combat encounters. The game will be developed using Unity and programmed in C#. It will feature 2D pixel art aesthetics to make it feel reminiscent of classic SNES RPGs.

## Project Description

Dragonlord Chronicles is a computer-based Role-Playing Game that will be designed in Unity and programmed in C#. The goal of this project is to create an immersive game where the player can explore a medieval fantasy world that is populated with a wide range of dragons.

The core gameplay will revolve around combat, exploration, and story.

The story will begin with a prophecy that tells how a hero, with a special affinity to the dragons of the world, during a time of calamity, shall seal away an ancient evil to bring peace to the world.

The exploration will involve visiting different regions of the world to find new species of dragons, to complete sidequests, and to engage in the main story.

The combat system will consist of the player as the primary participant in combat, with up to one companion dragon by their side to complement their skillset. The player and dragon are each able to perform one action per turn, such as attacking, casting a spell, using an item, etc. Only one dragon may be active at a time, but different dragons can be swapped in and out during combat.

Our intended users for this project and who will benefit the most are those that want to play a Role-Playing Game at their leisure. The systems that will be implemented in this game are not intended to be a high stakes. For example, the turn based combat system encourages the user to think through the situation and plan accordingly before making their move. Next, the save system will allow the user to save their game at any point. The user will not need to set aside a substantial amount of time in order to play the game, instead the user can play the game during small breaks in-between tasks or they can choose to play for hours. Lastly, there will be a variety of things the user will be able to do in order to advance in the game. The user can defeat and capture dragons, complete quests, and collect items.

Our dependability goals for this project is to prevent any game breaking bugs. In other words, any bugs that could cause the game to crash or any exploit that allows the player to progress through the game without the proper requirements. It is difficult to have a completely bug free game, but if there are too many bugs in the game it may ruin the experience for the user.

## **Significance**

The game that demonstrates the market potential in fantasy Role-Playing Games is Octopath Traveler. In September 2017, Square Enix released a beta demo of this game, which allowed players to complete the prologue chapters for the characters Primrose and Olberic. Upon completing the demo, players would be asked to fill out a survey to express what they enjoyed and what they did not enjoy about the game. Four months later, the Octopath Traveler demo received over a million downloads and more than 45,000 survey responses were completed. In addition, the game launched on July 13th and received one million sales within its first month.

Games developed by independent studios (indie games) have also seen financial success for creating unique RPGs. One case study is Golf Story which was developed by a two-person team and released on the Nintendo Switch last year. According to eShop downloads charts, the game was one of the most frequently downloaded titles in the weeks after it launched.

Pokemon is most similar to the RPG that Team 18 is creating. In Pokemon, a ten-year-old kid sets out on a journey to discover the world and find various types of Pokemon. Similarly, in the game being created by the team, the player will travel throughout a world to solve different puzzles and record their findings along the journey. Indirect competition will come from other games made by independent studios. Direct competition will come from games that are specifically tailored for an RPG experience.

The novelty of Team 18's solution comes from being a unique RPG experience that would be accessible for gamers who are unfamiliar with the genre. Some RPGs require the player to gain an arbitrary amount of experience before being able to progress through the story. The game being designed by Team 18 will feature difficulty scaling and the story will not be locked behind arbitrary experience requirements, so it could be better enjoyed by people who want a faster-paced game.

## **Legal and Ethical Aspects**

The main legal issues come from the limitations of Unity Personal Edition. For example, when using Unity Collaborate, only three team members are allowed to access the project. We managed to circumvent this by giving two of our team members the same email address so they can access the project. Personal Edition also prevents us from using certain features such as

Splash Screen Customization (meaning that the start screen will always show the Unity logo), and certain analytics features.

Other legal issues may pertain to our project if we choose to release the game commercially. We would have to start a company, put the game on a storefront, and figure out how to split any revenue. To avoid these issues, we have decided against a commercial release for the game.

The ACM code of ethics PRODUCT clause states that software engineers shall ensure that their products and related modifications meet the highest professional standards possible. In the context of our game, this means we must create a functional game that is fun to play. To achieve this, we will perform rigorous playtesting to minimize erroneous behavior and to discover what aspects of the game need refined to be more enjoyable.

## **Progress and Changes**

Team 18 has made notable progress on the game's development since the original project concept document. To date, the following features have been implemented and are fully functional:

- Main menu with working "New Game" button
- "EntityData" class representing data values and functions for all entities the player can interact with
- First level mapped out, with functional player movement
- Combat sequence initiated when encountering an enemy
- Basic attacks during combat, functional health bars, and properly saving entity data following the combat
- Basic enemy AI and decision-making in combat

In addition to the features already completed, the following features are currently being implemented:

- Interactable NPCs and dialogue system
- Quest system and first quest
- Internal scene management system
- Magic spells usable in combat
- Dynamic creation and saving of enemies at runtime
- Inventory system
- General sprite work and polish

During the development since the previous report, some features have changed or been abandoned due to design decisions or time constraints. One such example is each dragon having a unique elemental type to provide advantages and disadvantages in combat. The reason for this change is primarily due to time constraints and the team not outlining a plan for

the design and interactions among the different elemental types. If time permits, the team would still like to implement an elemental type system, but there are currently no concrete plans for it as of the writing of this document.

Another core feature of the game that is still planned but not fully designed is the capture system for the dragons. The core of the game revolves around the capture and training of dragons, and while that has not changed, the team has not agreed on how the capture and storage of dragons should work from the player's perspective.

During development, the decision was made to change the area the player can explore from a large, continuous space to a series of areas sectioned off into different levels. This change was done primarily for programming simplicity and performance. In the event that the team is able to implement elemental types for enemies, dividing the world into different levels and assigning enemy elemental types according to the level makes the random generation of enemies at runtime much easier, and makes the world feel more consistent with reality. As an example, a fire elemental enemy would not be able to spawn in the same area as an ice elemental enemy under this system.

One of the most significant features changed since the previous document was how the player quest system would be handled. Originally, the goal was to have a single large main questline with occasional side quests for the player to complete at their leisure. Team 18 has decided instead to include a small main questline and many side quests for the player to complete. The team agreed that this better reflected the intended setting and playstyle of the game, as well as to simplify the complex programming requirements of a long series of quests, each dependent on the previous quests in order to properly function. With a single long chain of quests, it would have been more difficult to modify in the future, whereas individual, independent quests are easier to remove or replace.

## **Project Responsibilities**

We have broken down our project into the following six subsystems:

- Character Dialogue. The player may have conversations with specific NPCs.
- Combat Management. The player and their dragon will be able to fight enemies.
- Inventory System. The player needs to be able to pick up items, use items, and manage their equipment.
- Scene Management. The game needs to be able to swap between the overworld scenes and the battle scenes.
- Quest System. A quest is a chronological series of objectives that need to be completed by the player.
- Animation System. During battle, characters will have different animations to provide additional feedback for what they are doing.

Sean is responsible for implementing the character dialogue system, quest system, and scene management. Jonathan and Christine are collaborating to implement and refine the combat system. Ryan is responsible for implementing the inventory system. Additional responsibilities will be given as we make progress on the game.

## Project Monitoring and Risks

Creating a video game is a large project, so we must monitor progress on the project and ensure that it is done on time. In order to do this, we have planned out weekly meetings in order to discuss the project. During these meetings, we cover what progress each team member has made, discuss any problems that may have arisen, and establish goals for each team member to meet in the short-term and the long-term. We keep these goals in a shared spreadsheet so that each team member knows what they are responsible for.

Risk Register												
Risk ID	Risks	Current Risk			Stat us	Own er	Rai sed	Mitigation Strategies	Residual Risk			
		Likelih ood	Imp act	Seve rity					Likelih ood	Imp act	Seve rity	
Category 1: Project Development and Implementation												
RD-01	Finishing the project on time	4	5	20	Op en	Tea m 18	7-F eb	<ul style="list-style-type: none"> <li>Weekly meetings to ensure all team members are on task</li> <li>Clear short-term and long-term goals for the team</li> </ul>	3	5	15	
RD-02	Overscoping	3	5	15	Op en	Tea m 18	7-F eb	<ul style="list-style-type: none"> <li>Prioritized list of goals for the project</li> <li>Weekly meetings to ensure the team is on task to complete the highest priority elements</li> </ul>	2	5	10	
RD-03	Making the game 'fun' for users	3	4	12	Op en	Tea m 18	7-F eb	<ul style="list-style-type: none"> <li>Discussion of what elements will make the game fun</li> <li>Implementing a clear goal for the player to work towards</li> </ul>	2	4	8	
RD-04	Bugs in the final product	4	3	12	Op en	Tea m 18	7-F eb	<ul style="list-style-type: none"> <li>Rigorous testing of each part of the game</li> <li>Revision and refactoring of the code</li> </ul>	3	3	9	



<https://www.ign.com/articles/2018/08/03/octopath-traveler-hits-1-million-copies-in-sales-and-shipments>

<https://www.dualshockers.com/golf-story-successful-launch-according-nintendo-switch-eshop-charts/>