Software Project Management Plan

Project Horseman

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RoguePixel Games

Computer Science Dept/ CSUN

COMP490, Edmund Dantes

Revisions

Version	Primary Author	Description of Version	Date completed
1.0	All Team Members	Original Document	10/08/23
1.1			
1.2			
1.3			
1.4			
1.5			

Table of Contents

1. Introduction

1.1 Project Overview

Purpose

Our project is going to be a pixelated top-down role-playing video game. It is inspired by Nintendo games like Pokemon and Legend of Zelda. The purpose is to bring feelings of nostalgia and pay homage to the great games many of our generation started off playing. The theme of this game will be Halloween. It will have an immersive storyline that follows our character throughout the game with a variety of non-playable characters and enemies. Our main goal is to make a fun game that appeals to fans of classic Nintendo games.

Scope

Our project will be available on Steam. Anyone with a computer can play and we might expand it as LibGDX has Android and IOS capabilities. The intended audience are fans of Halloween or fans of pixelated top-down games (such as Legend of Zelda or Pokemon).

Art Style

The graphics are inspired by Nintendo games like Pokemon and Legend of Zelda. It will be a 32-bit pixelated game. The purpose is to bring feelings of nostalgia and pay homage to the great games many generations started off playing. Many of us do not have access to a working DS or GameCube like we once had and some of these online simulators are hard to set up or take up a lot of space on our devices. So we want to implement an easy-to-access game with similar graphics to these Nintendo games. We will be able to create as well as incorporate online sources to create a good-looking game.

Story Synopsis

Our main character Todd is tasked with saving his village from an evil curse plaguing his people. He must follow the trail of the legendary Headless Horseman. As he searches for clues and interacts with villagers he will piece together the story behind the curse that haunts the town every Halloween and save his people.

Gameplay

Combat

Our main character will be able to do common movements of left, right, up, and down. Limited combat will be used to solve puzzles and complete quests. Enemies will follow a path and have coded attack sequences similar to Legend of Zelda enemies.

Role-playing

Project Horseman will have many locations across the three acts. These three acts are Act 1: The Town, Act 2: Hollow Woods, and Act 3: Horseman Layer. The player will need to solve puzzles by finding keys and uncovering the secrets of the Horseman's past to advance throughout the game.

Exploration

In this dark and mysterious world, players will encounter friendly NPCs who are not just static characters but integral to the narrative. Engage in conversations with these NPCs to glean valuable information, unravel lore, and even receive assistance on your journey. Some of these NPCs may entrust you with side questlines, adding depth to the narrative and challenging you to perform tasks or uncover secrets that unlock hidden facets of the game's world. Your inventory becomes a vital companion as you collect important information, keys, and puzzle pieces.

Character Select

Our main character Todd has two Halloween costumes you can choose from Chicken Boy or Hooded Boy.

Assumptions and Constraints

Assumptions:

Operating System: Our game is designed to run on mac, windows & linux. We assume players will be using one of these operating systems.

Sound: We assume players will have speakers or headphones for the best gaming experience, as audio plays a crucial role in the atmosphere of our game.

Gameplay: The game is designed for a single player, the player will have their own set of controls on the keyboard or using external input devices.

Stable Environment: We assume that the game will not be interrupted by other software applications during gameplay.

Constraints:

Resolution: The game is optimized for 1920x1080 resolution, though it will scale to fit other standard resolutions.

Controls: Our game will support keyboard input and, in some cases, mouse input, but will not natively support game controllers.

Offline Mode: Our game is a desktop application that doesn't require an internet connection for gameplay after initial download and installation.

Multiplayer: The game will not support multiplayer features. Not until the initial release, we may plan to add that in the future.

Hardware Requirements

Windows

Minimum

OS: Windows 7

Processor (CPU): Intel I5 or AMD Ryzen 5

Graphics (GPU): Nvidia GTX 650 or AMD Radeon HD 7850

Memory (RAM): 4 GB

Storage (ROM): 2 GB

Recommended

OS: Windows 10

Processor (CPU): Intel I7 or AMD Ryzen 7

Graphics (GPU): Nvidia GTX 1050 TI or AMD Radeon RX 570

Memory (RAM): 8 GB

Storage (ROM): 4 GB

MacOS

Minimum

OS: MacOS 10.12 (Sierra)

Processor (CPU): Intel I5

Graphics (GPU): Dedicated graphics with Open GL 3.2+ support

Memory (RAM): 4 GB

Storage (ROM): 2 GB

Recommended

OS: MacOS 11 (Big Sur)

Processor (CPU): Intel I7 or Apple M1

Graphics (GPU): Dedicated graphics with Open GL 3.2+ support

Memory (RAM): 8 GB

Storage (ROM): 4 GB

SteamOS + Linux

Minimum

OS: Steam OS 2.0 or Arch Linux prior to version 6

Processor (CPU): Intel I5 or AMD Ryzen 5

Graphics (GPU): Nvidia GTX 650 or AMD Radeon HD 7850

Memory (RAM): 4 GB

Storage (ROM): 2 GB

Recommended

OS: Steam OS 3.0 or Arch Linux version 6

Processor (CPU): Intel I7 or AMD Ryzen 7

Graphics (GPU): Nvidia GTX 1050 TI or AMD Radeon RX 570

Memory (RAM): 8 GB

Storage (ROM): 4 GB

1.2 Literature Review

Ideas / History / Audience

Embracing the pixelated style reminiscent of the 8-bit and 16-bit eras, Project Horseman takes players on a journey that intertwines nostalgia, innovation, and a spooky story. Those who fondly remember the pixelated classics of the past will be drawn to the familiar art style and gameplay. "Hollow's Curse: Pursuit of the Headless Horseman" offers them a chance to relive the glory days of retro gaming with a modern twist. Younger gamers who may not have experienced the pixelated era firsthand can discover the magic of classic gaming aesthetics. The game provides an accessible entry point to a style that has stood the test of time. Fans of the horror genre, regardless of their gaming background, will find themselves immersed in a chilling narrative that pays homage to timeless horror tropes while introducing fresh, spine-tingling elements. Our game accommodates a wide range of players with its approachable pixel art style and straightforward gameplay. It invites those who may not typically engage with complex games to experience its haunting tale. By embracing the essence of classic gaming while utilizing contemporary tools, the game strikes a balance between nostalgia and innovation. Many of us do not have access to a working DS or GameCube like we once had and some of these online simulators are hard to set up or take up a lot of space on our devices. So we want to implement an easy-to-access game that will give off the same feelings Nintendo games once did.

During our research phase, we found several pertinent points that drove our decision-making for the project:

Version Control

GitHub version control can be incredibly beneficial for college group projects, especially when working on a project like LibGDX, which is a popular game development framework for Java. Here's how GitHub version control can help:

1. **Collaborative Work**: In group projects, multiple students are usually working on the same codebase simultaneously. GitHub allows for concurrent collaborative work by enabling multiple contributors to make changes to the codebase without interfering with each other. Each contributor can work on their own branch and merge changes when they are ready, reducing conflicts and making it easier to work together.
2. **Code Backup and Recovery**: GitHub serves as a centralized repository for your project's code. This means that even if a team member loses their local copy of the code or makes a mistake, they can easily retrieve the latest code from GitHub. This minimizes the risk of data loss and code corruption.
3. **Version History**: GitHub records a complete history of all changes made to the project. This is invaluable when you need to track who made what changes and when. You can review the commit history to understand the evolution of the project and pinpoint where issues might have arisen.
4. **Branching and Merging**: With GitHub, you can create branches for different features, bug fixes, or experimental changes. This allows you to work on new features or bug fixes without affecting the main codebase. When your changes are ready, you can merge them

back into the main branch (typically master or main), ensuring that only well-tested code gets integrated.

5. **Issue Tracking**: GitHub offers an issue-tracking system that allows you to create, assign, and track tasks, bugs, and feature requests. This is beneficial for project management, as you can prioritize work and keep a record of what needs to be done.
6. **Code Review**: GitHub facilitates code review through pull requests. Team members can review each other's code changes, provide feedback, and suggest improvements before changes are merged into the main branch. This helps maintain code quality and consistency.
7. **Continuous Integration**: You can integrate GitHub with continuous integration (CI) tools like Travis CI or CircleCI. This automates the process of building, testing, and deploying your project whenever changes are pushed to the repository. This ensures that your codebase remains stable and error-free.
8. **Documentation and Wiki**: GitHub allows you to create and maintain project documentation and a wiki. This is useful for documenting the project's architecture, setup instructions, and other essential information that helps team members understand and contribute to the project.
9. **Access Control**: GitHub allows you to control who has access to your project. You can manage permissions for team members, granting read-only or read-write access as needed.

In summary, GitHub version control is an invaluable tool for college group projects, including those involving LibGDX or any other software development framework. It promotes collaboration, code quality, and project organization, making it easier for students to work together effectively on complex assignments.

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2. Project Organization

2.1 Roles and Responsibilities

Team Member	Roles	Email
Jean Hanna	Team Lead, Head Java Developer, Gameplay tester	jean.hanna.885@my.csun.edu
Cailin Jefferson	Map & Level Designer, Gameplay tester	cailin.jefferson.567@my.csun.edu
Mikel Nuila	Functionality Programmer, Gameplay tester	mikel.nuila.618@my.csun.edu
Mohammed Hussain	Graphics Programmer, Gameplay tester	mohammed.hussain.403@my.csun.edu
Shawn Takhirov	Software Design Engineer, Gameplay tester	shawn.takhirov.647@my.csun.edu

Roles	Responsibility
Team Leader	In charge of leading and organizing the project and the team. responsible for gathering all inquiries and concerns, communicating those to the instructor, and turning in materials and assignments. responsible for directing team meetings and acquiring project-related data. Additionally accountable for delegating work and assignments to team members.
Java Developer	Responsible for writing Java code. Their main purpose is to program, design, analyze, and debug Java code for the game.
Functionality Programmer	Responsible for implementing and optimizing core gameplay systems, mechanics, and functionalities
Level Designer	Responsible for crafting the gameplay experience by designing and creating engaging

	and immersive game levels.
Map Designer	Responsible for creating detailed and visually appealing tile maps.
Graphics Programmer	Responsible for optimizing and implementing cutting-edge graphics technologies to create visually stunning and immersive gaming experiences.
Software Design Engineer	Plays a critical role in designing, developing, and maintaining software systems and tools that enable the creation and management of our game.
Narrative designer (need to assign people to this)	Responsible for shaping the storytelling and narrative elements of our games.
Gameplay tester (need to assign people to this)	In charge of testing the quality, functionality, and playability of our game by thoroughly testing and providing feedback on gameplay mechanics and systems

2.2 Tools and Techniques

Tiled map editor to create our maps, game world, and environment.

Gradle for building our project.

YAML for project configuration.

Trello for our project management system. Tasks are published by our Project Manager as cards. Team members select the cards with which they are comfortable with and start working on them.

GitHub which is an online repository service. Allows us to store and manage resources and code, in addition to tracking and controlling changes to code.

Discord is an online social messaging platform. Allows us to communicate with each other through text and voice chat.

Waterfall method is a project development with the breakdown of project activities into linear sequential phases and each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks.

itch.io game asset packs created by users that include artwork for our backgrounds, characters, and enemies.

Adobe Photoshop which is an image editing software.

Steam is a video game digital distribution service and storefront developed by Valve Corporation.

Gson which is a Java library that is commonly used to convert Java objects to JSON

SnakeYAML which is a parser and emitter library for Java

LibGDX & Ashley Synergy: LibGDX has shown strong performance metrics in the realm of 2D game development, making it a robust choice for desktop application games. This framework integrates seamlessly with Ashley, providing an efficient entity component system for better game logic separation and management.

Java & Cross-Platform Compatibility: Java remains one of the most versatile programming languages for cross-platform development. Leveraging its capabilities ensures our game will cater to a broader audience without the need for extensive modifications for different platforms.

GSON's Role in Data Handling: Gson, a renowned Java library from Google, emerged as a top choice for our game's data serialization needs. Whether saving game states, loading configuration files, or facilitating potential network communications, Gson provides efficient conversion between Java objects and their JSON representations. This standardization streamlines development and enhances gameplay experience, especially in scenarios requiring quick data processing and storage.

IntelliJ IDEA for Java Development: Using IntelliJ IDEA, one of the premier Integrated Development Environments (IDEs) for Java, has accelerated our development process. With its powerful code analysis, debugging tools, and integrated support for LibGDX and Gson, IntelliJ IDEA enhances productivity, reduces development overhead, and allows for efficient code collaboration among the team.

3. Project Management Plan

3.1 Tasks

Milestone	Task Description	Due Date
Progress Report #1	Report outlining our project's progress	9/10/23
Project Presentation	Presentation showcasing our project concept.	9/17/23
Progress Report #2	Report outlining our project's progress	9/24/23
Software Project Management Plan (SPMP)	Creating our plan for our project.	10/08/23
Progress Report #3	Report outlining our project's progress	10/08/23
Progress Report #4	Report outlining our project's progress	10/22/23
Project progress	Starting Act 1, all baseline for project done	Before 10/23/23
Software Requirement Specification (SRS)	Assignment where we write project requirements	10/23/23
Progress Report #5	Report outlining our project's progress	11/05/23
Code Review #1 Artifacts	Peer review assignment.	11/12/23
Project progress	Second act maybe?	Before 11/12/23

Software Design Document (SDD)	Assignment where we design our project.	11/12/23
Progress Report #6	Report outlining our project's progress	11/19/23
Code Review #2 Artifact	Peer review assignment.	12/03/23
Progress Report #7	Report outlining our project's progress	12/03/23
Progress Report #8	Report outlining our project's progress	12/11/22
Project progress	Demo mostly complete: multiple enemies and NPCs as well as player functionality done. Level design and environment for the first act done.	Before 12/11/22
Software Test Plan (STP)	Assignment where we plan the testing for the project.	12/17/23
Project Presentation Demo	Full Presentation/Demo of code with documentation	12/18/23
Progress Report #9	Report outlining our project's progress in 491	02/04/24
Progress Report #10	Report outlining our project's progress in 491	02/18/24
Progress Report #11	Report outlining our project's progress in 491	03/03/24
Progress Report #12	Report outlining our project's progress in 491	03/17/24
Progress Report #13	Report outlining our project's progress in 491	04/14/24
Progress Report	Report outlining our project's progress in 491	04/28/24

#14		
Progress Report #15	Report outlining our project's progress in 491	05/12/24
Progress Report #16	Report outlining our project's progress in 491	05/14/24
Final Presentation	Present our finished game.	05/14/24

3.2 Assignments

Task	Deliverables	Description	Due	Assigned
Project planning	Planning	Get story premise with details on the main character, settings, and enemies.	September	All
Learn basic fundamentals of IntelliJ	Knowledge	Know basic knowledge of pushing and pulling as well as branches	September	All
Learn basic fundamentals of Tiled	Knowledge	Learn tiled software like how to upload files to IntelliJ, how to set up camera and collision	September	Cailin
Write Software Project Management Plan	SPMP	Class assignment where we write a plan for our project	10/08/23	All
Write Software	SRS	Class assignment	10/22/23	All

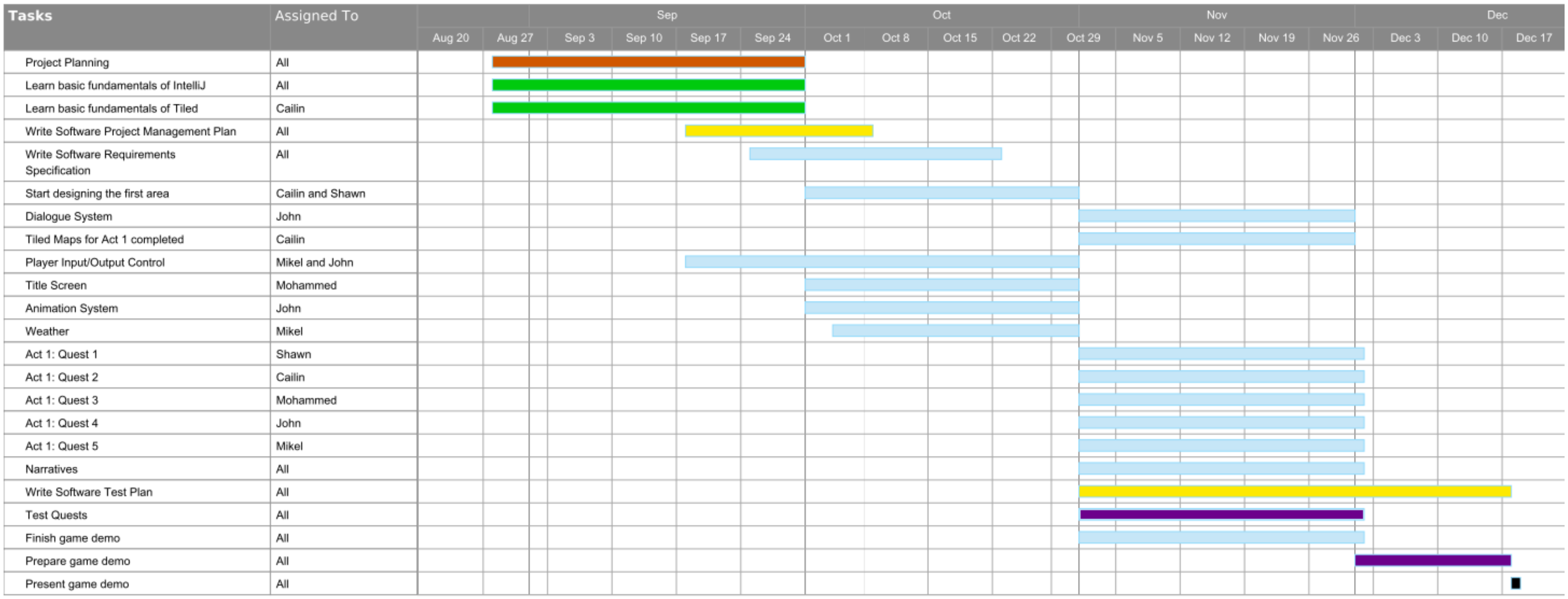
Requirements Specification		where we write our requirements for our project.		
Start designing the first area	Environment design, level design	Early level design of the area our character first starts off in	October	All
Dialogue System	Programming	Set up dialogue system to get ready for starting in game narratives	November	John
Tiled Maps for Act 1 completed	Programming	Have all tile maps done for this area of the map	November	Cailin
Player Input/Output Control	Programming	Finish player input/output	Before October	Mikel and John
Title Screen	Programming	Have game title screen completed	Before October	Mohammed
Animation System	Programming	Finish code to change texture region	Before October	John
Weather	Programming	Finish code to add different weather conditions to code	End of October	Mikel
Act 1: Quest 1	Programming	Finish code for quest	Before December	Shawn
Act 1: Quest 2	Programming	Finish code for quest	Before December	Cailin
Act 1: Quest 3	Programming	Finish code for quest	Before December	Mohammed
Act 1: Quest 4	Programming	Finish code for quest	Before December	John

Act 1: Quest 5	Programming	Finish code for quest	Before December	Mikel
Narratives	Programming	Complete dialogue between the main character and NPCs	December	All
Write Software Test Plan	STP	Class assignment where we write a plan to test the project.	12/17/23	All
Test Quests	Testing	Test the questlines	December	All
Finish game demo	Programming	Finish programming the demo of act one	December	All
Prepare game demo	Testing	Prepare the demo for our presentation	Before 12/18/23	All
Present game demo	Presentation	Present a demo of our game	12/18/23	All
Start Second Act	Programming	Start programming second act of game	February	All
Act 2: Quest 1	Programming	Finish code for quest	February	Cailin
Act 2: Quest 2	Programming	Finish code for quest	February	Mikel
Act 2: Quest 3	Programming	Finish code for quest	February	Mohammed
Tiled Maps for Act 2 completed	Programming	Have all tile maps done for this area of the map	February	Cailin

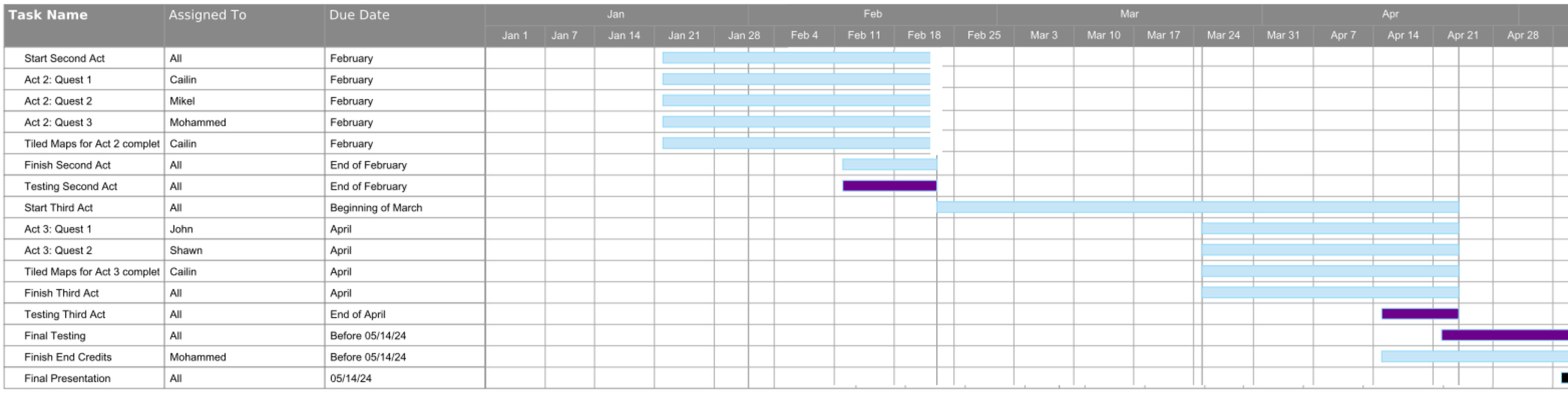
Finish Second Act	Programming	Finish programming second act of game	End of February	All
Testing Second Act	Testing	Test second act of game	End of February	All
Start Third Act	Programming	Start programming third act of game	Beginning of March	All
Act 3: Quest 1	Programming	Finish code for quest	April	John
Act 3: Quest 2	Programming	Finish code for quest	April	Shawn
Tiled Maps for Act 3 completed	Programming	Have all tile maps done for this area of the map	April	Cailin
Finish Third Act	Programming	Finish programming third act of game	April	All
Testing Third Act	Testing	Test third act of game	End of April	All
Final Testing	Testing	Test entire game	Before 05/14/24	All
Finish End Credits	Programming	Give credit to our team and any assist packs we used in our game	Before 05/14/24	Mohammed
Final Presentation	Presentation	Present our finished game	05/14/24	All

3.3 Timetable

Blue- Coding
Red- Planning
Yellow- Documentation
Green- learning
Purple- testing
Black- Presenting
Link to better picture: Here



Tasks	Assigned To
Project Planning	All
Learn basic fundamentals of IntelliJ	All
Learn basic fundamentals of Tiled	Cailin
Write Software Project Management Plan	All
Write Software Requirements Specification	All
Start designing the first area	Cailin and Shawn
Dialogue System	John
Tiled Maps for Act 1 completed	Cailin
Player Input/Output Control	Mikel and John
Title Screen	Mohammed
Animation System	John
Weather	Mikel
Act 1: Quest 1	Shawn
Act 1: Quest 2	Cailin
Act 1: Quest 3	Mohammed
Act 1: Quest 4	John
Act 1: Quest 5	Mikel
Narratives	All
Write Software Test Plan	All
Test Quests	All
Finish game demo	All
Prepare game demo	All
Present game demo	All



Task Name	Assigned To	Due Date
Start Second Act	All	February
Act 2: Quest 1	Cailin	February
Act 2: Quest 2	Mikel	February
Act 2: Quest 3	Mohammed	February
Tiled Maps for Act 2 complet	Cailin	February
Finish Second Act	All	End of February
Testing Second Act	All	End of February
Start Third Act	All	Beginning of March
Act 3: Quest 1	John	April
Act 3: Quest 2	Shawn	April
Tiled Maps for Act 3 complet	Cailin	April
Finish Third Act	All	April
Testing Third Act	All	End of April
Final Testing	All	Before 05/14/24
Finish End Credits	Mohammed	Before 05/14/24
Final Presentation	All	05/14/24

Additional Material

Definitions, Acronyms and Abbreviations

Acronyms and Abbreviations	Definition
Top-down Perspective	Video game where the player's perspective is from above and looking down. Also known as the overhead perspective.
Nintendo	Japanese video game company founded in 1889.
Legend of Zelda	An action-adventure game franchise created by Nintendo in 1986. We will be referring to earlier games that have a top-down perspective such as Legend of Zelda: Four Swords Adventures.
Pokemon	Franchise was created by Nintendo in 1996 and consists of video games, animated series and films, trading card games, and other related media. We will be referring to the earlier games that have a top-down perspective such as Pokémon Green Version.
Role-playing game (RPG)	Game in which players assume the roles of characters in a fictional setting by acting out roles within the storyline.
Non-player character (NPC)	Any character in a game that is not controlled by a player.
Steam	Popular game client service. Facilitates purchasing, storing, and playing of games.
Single-player	A game designed to be played by one person at a time
IDE	Integrated Development Environment

References

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