

CP3407 ASSESSMENT 2: Project Plan

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Weighting / Length: 20%

Due date: 16 June 2024

ASSESSMENT TASK DESCRIPTION

This task defines the initial project specifications, including goals, deliverables, and planning for the project. The following is the list of items required to be completed in this assignment:

Assignment submitted to LearnJCU.

Project management.

Project Description for Non-ICT-Technical Stakeholders and General Audience

Project Description:

In the dynamic realm of digital entertainment, the demand for unique and immersive gaming experiences is escalating. Our project addresses this need by developing a cutting-edge 2D platformer game titled "Ghost Blade." This game harnesses advanced ICT technologies to create an engaging narrative-driven adventure set in a captivating parallel universe.

Justification for the Project:

In the rapidly evolving landscape of technology and entertainment, the necessity for innovative and captivating digital experiences has never been more pressing. Our project aims to address this demand by developing a cutting-edge 2D platformer game. This game leverages advancements in ICT (Information and Communication Technology) to deliver a thrilling narrative-driven experience set in a parallel universe.

Market and ICT Technology Research:

Recent market research indicates a growing interest in platformer games, spurred by successful indie titles and a dedicated community of gamers seeking challenging gameplay and compelling storytelling. Advances in ICT have enabled the creation of highly detailed virtual environments, sophisticated AI-driven mechanics, and seamless multiplayer capabilities.

Existing ICT solutions in the gaming industry range from large-scale AAA titles to indie productions, each offering unique gameplay experiences tailored to different audience preferences. However, gaps exist in the market for a platformer game that combines dynamic combat mechanics with an engrossing narrative focused on a samurai's journey through a parallel universe.

Project Goals:

The primary goal of our project is to deliver a fully functional prototype of "Ghost Blade" that showcases the following key features:

1. **Narrative Depth and Immersive Storytelling:** Engage players through a compelling storyline centered around the protagonist, a samurai who fights for his kingdom and accidentally gets separated from his universe. His quest to return home drives the narrative forward.
2. **Dynamic Combat Mechanics:** Implement intuitive and challenging combat systems that allow players to engage in combat with various monsters, reflecting the fast-paced nature of samurai battles.
3. **Visual and Audio Excellence:** Utilize state-of-the-art graphics and sound design to create a visually stunning and audibly immersive environment that enhances the player's experience in the parallel universe.
4. **Platform Compatibility:** Ensure compatibility with multiple platforms, including PCs and popular gaming consoles, to maximize accessibility and reach a broad audience of gamers.
5. **Prototype Testing and Iteration:** Conduct rigorous testing phases to gather player feedback and iterate on gameplay mechanics, ensuring a polished and enjoyable gaming experience.

Deliverables for Assessment:

Upon completion, the project will deliver the following components to the lecturer for assessment:

- **Game Prototype:** A playable demo showcasing the core gameplay mechanics, narrative elements, and visual/audio design of "Ghost Blade."
- **Technical Documentation:** Comprehensive documentation outlining the ICT technologies utilized, development methodologies, and design decisions made throughout the project.
- **Evaluation Report:** An evaluation report detailing the testing process, user feedback, and improvements made during the iterative development phases.

Introduction

Welcome to our project plan for "Ghost Blade," a 2D platformer game designed to challenge players and immerse them in a thrilling narrative. Developed by Norair Tarasov and Zhussip Alisher, this game combines dynamic combat, engaging storytelling, and stunning visuals to create a memorable gaming experience.

Conclusion

Our project aims to deliver a fully functional prototype of "Ghost Blade," showcasing our commitment to innovation and quality in game development. Through rigorous planning, development, and testing, we strive to create a game that not only meets academic requirements but also has the potential to succeed in the competitive gaming market.

Product

"Ghost Blade" is a 2D platformer game where players take on the role of a samurai transported to a parallel universe. The game features dynamic combat, intricate levels, and a compelling storyline, providing players with a challenging and immersive experience.

Target Audience

Our target audience includes gamers who enjoy challenging platformers and engaging narratives. We aim to provide a demanding yet rewarding experience that appeals to both casual and hardcore gamers.

Project Planning and Scope

Our project involves developing a 2D platformer game in Unity. Key tasks include setting up the Unity environment, creating detailed sprites for characters and environments, designing a user-friendly main menu, implementing player movements and animations, crafting diverse game maps, integrating immersive sound effects and music, programming intelligent enemy AI behaviors, and designing intuitive in-game UI elements. The development process is divided into three iterations: setting up basic functionality and UI, advancing gameplay with animations, environments, and AI, and finally, rigorous testing, debugging, and performance optimization to ensure a polished gaming experience.

Priority Table

Step Title	Description	Estimation (days)	Priority
Create Projects in Unity and GitHub	To start developing the game, we need to set up the project in Unity and add it to our GitHub Repository.	2	30
Drawing Sprites	Create visually engaging sprites for the main character, environmental details, interactive objects, and adversaries to enhance the immersive experience.	5	30
Creating a UI	Design a user-friendly main menu with visually appealing buttons and graphics that reflect our cyberpunk theme.	3	20
Develop User Movement and Animation	Create scripts for player movement, including walking, jumping, and attacking, ensuring responsive and intuitive gameplay mechanics.	5	20

Develop the Map for the User	Design and build the game environment, crafting diverse levels for exploration and interaction.	8	20
Add Sound Effects and Music	Integrate background music and sound effects to enrich the gaming experience and immerse players in the cyberpunk world.	4	20
Implement Enemy AI	Develop behavior and movement patterns for enemies, enhancing gameplay dynamics with engaging challenges.	6	20
Create UI Elements	Design and implement in-game UI elements such as health bars and score counters to provide crucial information during gameplay.	3	10
Testing and Debugging	Conduct comprehensive testing to identify and resolve gameplay issues, ensuring a smooth and polished experience.	10	30
Final Polish and Optimization	Optimize game performance and apply final touches for a seamless and enjoyable gaming experience.	6	20

Iteration Plan:

Iteration 1 (13 Days)			Iteration 2 (23 Days)			Iteration 3 (16 Days)		
User story	Priority	Estimation	User Story	Priority	Estimation	User Story	Priority	Estimation
Create	30	2	Develop	20	5	Testing	10	30

Projects in Unity and GitHub			User Movement and Animation			and Debugging		
Drawing Sprites	30	5	Develop the Map for the User	20	8	Final Polish and Optimization	6	20
Creating a UI	20	3	Add Sound Effects and Music	20	4			
Create UI Elements	10	3	Implement Enemy AI	20	6			

Our project team estimates a total of 52 days of productive work to complete the project. This timeframe covers all development phases, including planning, design, implementation, testing, and iteration. Each team member's tasks are carefully scheduled to ensure efficient use of time and resources, allowing us to meet our milestones and deliverables within the designated timeframe.

Available days: The minimum effort is 1 day per teaching week per team member (10 weeks), and the maximum is 3 days per teaching week per team member. For two team members, the available days range from 20 (minimum) to 60 (maximum). The available days must match the sum of our user story estimates below.

User Stories

User Story 1:

Title: Samurai Combat Training

Effort Estimate: 7 days

Description:

As a player, I want to learn samurai fighting techniques to effectively engage enemies.

Acceptance Criteria:

- Training dojo designed.
- Basic, advanced, and special moves.
- Combos and counterattacks are functional.
- Tutorial guidance system.

User Story 2:

Title: Stealth Mechanics

Effort Estimate: 10 days

Description:

As a player, I want to use stealth to avoid detection and complete missions.

Acceptance Criteria:

- Stealth mode with reduced noise and visibility.

- AI enemies with detection abilities.
- Visual indicators for visibility.
- Hiding spots in the environment.

User Story 3:

Title: Samurai Duel Boss Fight

Effort Estimate: 14 days

Description:

As a player, I want to duel a powerful samurai boss to test my skills.

Acceptance Criteria:

- Unique boss character with a distinct fighting style.
- Boss AI with multiple phases.
- Special duel arena.
- Cinematic introduction and conclusion.

User Story 4:

Title: Open World Exploration

Effort Estimate: 15 days

Description:

As a player, I want to explore an open world to find secrets, side quests, and collectibles.

Acceptance Criteria:

- Various open-world environments.
- Interactive NPCs with side quests.
- Hidden items and collectibles.
- Dynamic day-night cycle.

User Story 5:

Title: Crafting and Upgrading System

Effort Estimate: 6 days

Description:

As a player, I want to craft and upgrade weapons and armor to improve combat abilities.

Acceptance Criteria:

- Resource gathering system.
- Crafting menu with recipes.
- Upgrading system for weapons and armor.
- Inventory management system.

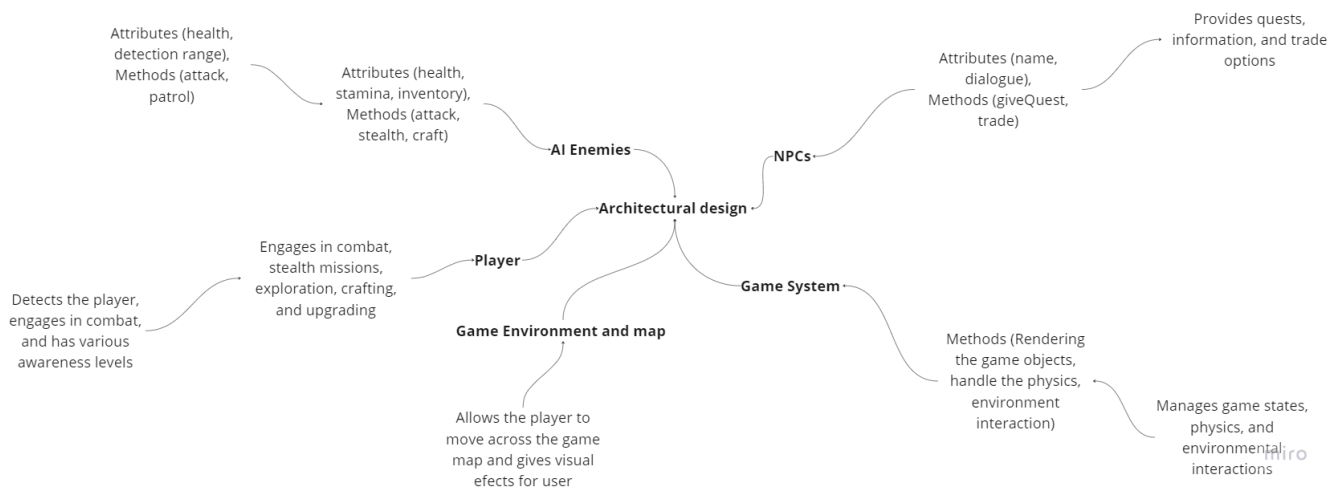
Project Design

Creating an architectural design for our samurai-themed game involves several steps, including defining the system's structure through UML diagrams, designing the database schema, and prototyping the user interface.

1. Architectural Design

A use case diagram helps identify the primary actors and their interactions with the system.

1. Player: Engages in combat, stealth missions, exploration, crafting, and upgrading.
2. AI Enemies: Detects the player, engages in combat, and has various awareness levels.
3. NPCs: Provides quests, information, and trade options.
4. Game System: Manages game states, physics, and environmental interactions.



Class Diagram

A Class Diagram shows the static structure of the system by detailing the classes, their

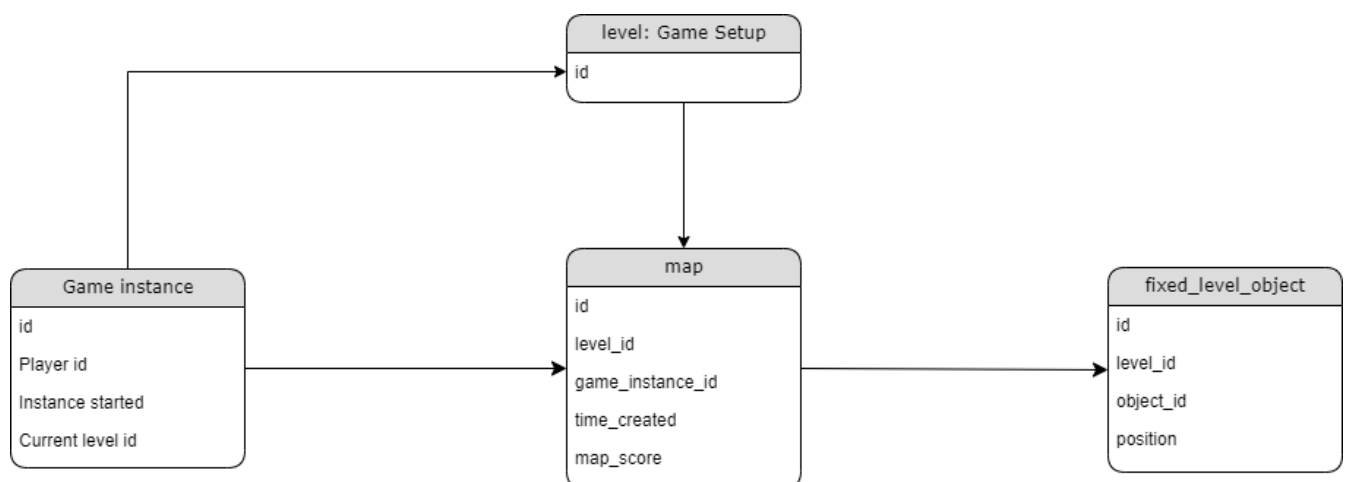
attributes, methods, and relationships.

Key Classes:

- Player: Attributes (health, stamina, inventory), Methods (attack, stealth, craft).
- Enemy: Attributes (health, detection range), Methods (attack, patrol).
- NPC: Attributes (name, dialogue), Methods (giveQuest, trade).
- Item: Attributes (name, type, value), Methods (use, combine).
- Quest: Attributes (title, description, reward), Methods (start, complete).

2. Database Design

Using a database diagram tool, such as GenMyModel, design the schema to support the user's actions and store it on the database, we will store players' data, and progression.

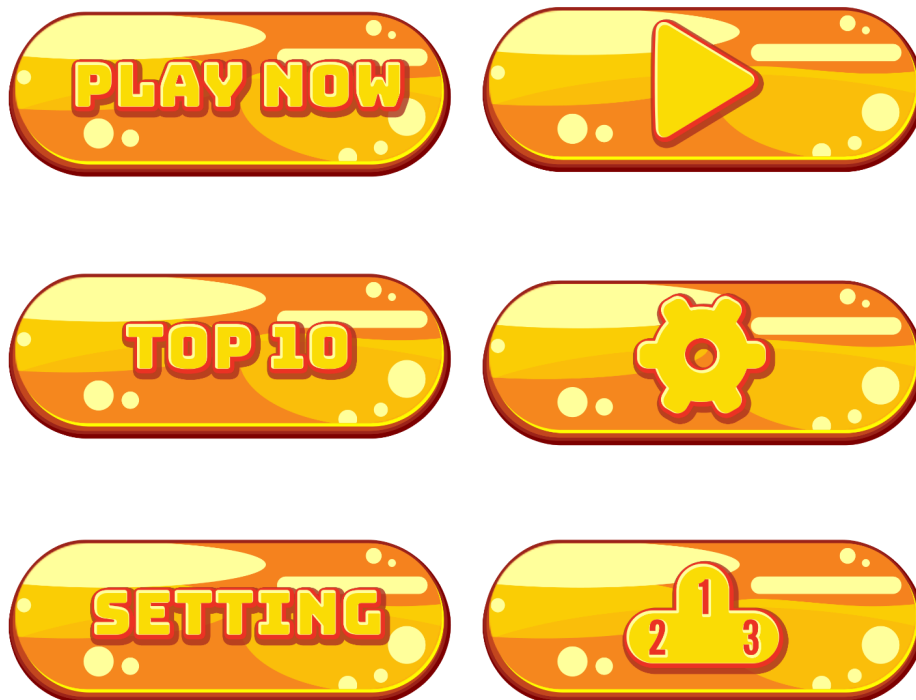


3. Interface Design

Using a prototyping tool like Ninjamock, create wireframes for the main screens of your game.



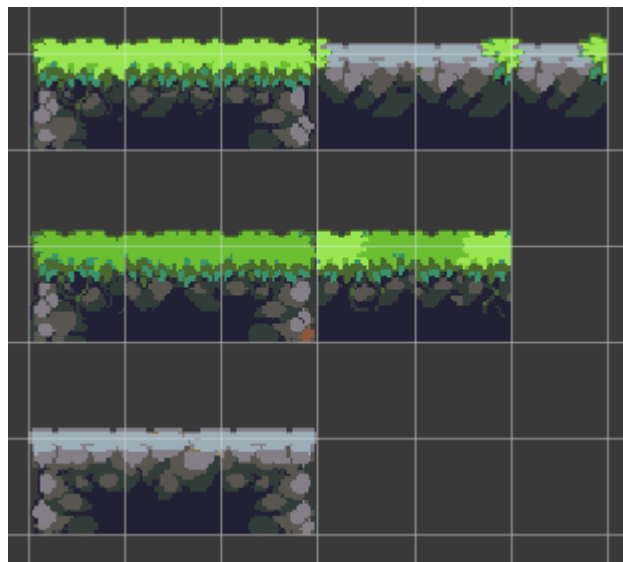
Picture 1. Starting Location (may differ from the final one)



Picture 2. Buttons for Main Menu and Pause (may differ from final one)



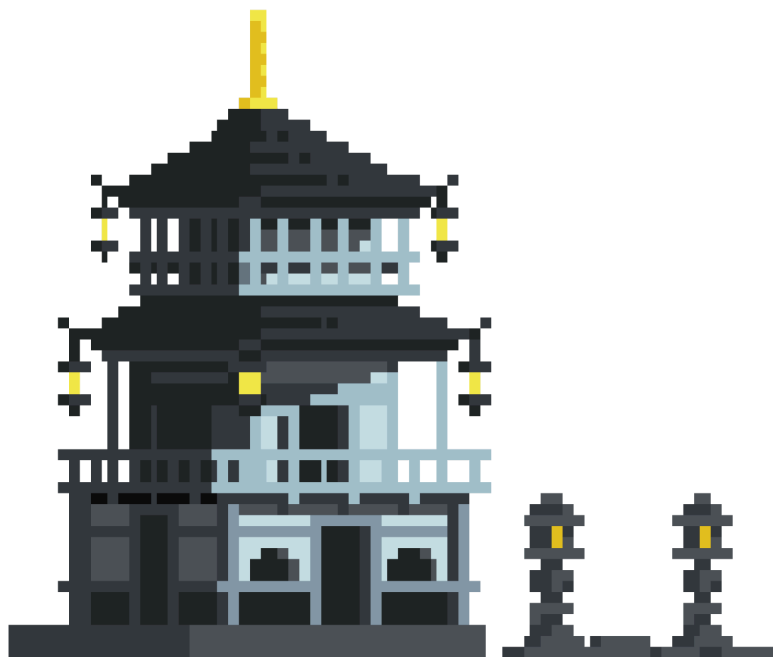
Picture 3. Tile set for Starting Location (may differ from final one)



Picture 4. Tileset for ground



Picture 5. Main Character (That is an experimental character and we will change him in the later iteration)



Picture 6. Temple (may differ from final one)

By structuring the document this way, you ensure a comprehensive and well-organized presentation of your game's architectural design.

Project Development and Release ICT Infrastructure

Development Environment

We will use Unity as our primary development platform, which provides comprehensive tools for 2D game development, including sprite management, physics, and animation.

Programming Languages

C# will be our primary programming language, leveraging Unity's scripting API to implement game mechanics, the player controls, and AI behaviors.

Source Code Repositories/Version Control

We will use GitHub for version control and collaboration. Our private repository will ensure code security while allowing seamless collaboration between team members.

Project Collaboration Tools

Tools like Trello or Jira will be employed for project management, tracking tasks, and maintaining clear communication within the team.

Development Tools

We will use Visual Studio as our integrated development environment (IDE) for writing and debugging code. Additionally, tools like Photoshop or Aseprite will assist in creating and refining game sprites.

This completes our comprehensive project plan for "Ghost Blade." We look forward to delivering a high-quality gaming experience that showcases our skills and creativity.

Reference List for Challenging Games

This is the list for a reference list.

1. Celeste

- Developer: Maddy Makes Games
- Genre: Platformer
- Description: "Celeste" is a critically acclaimed platformer known for its precise controls and challenging levels, focusing on the protagonist's climb up Celeste Mountain. The game combines tight gameplay mechanics with a heartfelt story.

2. Dead Cells

- Developer: Motion Twin
- Genre: Roguelike, Metroidvania
- Description: "Dead Cells" offers a rogue-like experience with procedurally generated levels and permadeath. Players explore a sprawling, interconnected world while facing difficult combat scenarios and collecting power-ups.

3. Salt and Sanctuary

- Developer: Ska Studios
- Genre: Action RPG, Metroidvania
- Description: This game merges the challenging combat of "Dark Souls" with the exploration and platforming of "Metroidvania" titles. Players explore a grim, dark world filled with dangerous foes and intricate environments.

4. Hades

- Developer: Supergiant Games
- Genre: Roguelike, Action
- Description: "Hades" is a roguelike dungeon crawler that blends fast-paced action with a deep narrative. Players take on the role of Zagreus, the son of Hades, battling through the underworld to escape to Mount Olympus.

5. Cuphead

- Developer: Studio MDHR

- Genre: Run and Gun, Platformer
- Description: Known for its challenging boss battles and run-and-gun gameplay, "Cuphead" features a unique 1930s cartoon art style. Precision and timing are crucial to overcoming the game's tough levels.

6. Ori and the Blind Forest

- Developer: Moon Studios
- Genre: Platformer, Metroidvania
- Description: "Ori and the Blind Forest" combines beautiful visuals and a touching story with challenging platforming segments. Players navigate a mystical forest, solving puzzles and battling enemies.

7. Dark Souls Series

- Developer: FromSoftware
- Genre: Action RPG
- Description: The "Dark Souls" series is renowned for its difficulty, intricate world design, and deep lore. Players must master combat and exploration to survive in its unforgiving world.

8. Sekiro: Shadows Die Twice

- Developer: FromSoftware
- Genre: Action-Adventure
- Description: "Sekiro" offers a unique blend of stealth, exploration, and brutal combat. Players take on the role of a shinobi in a mythical version of Japan, facing formidable enemies and bosses.

9. The Messenger

- Developer: Sabotage Studio
- Genre: Action-Platformer
- Description: "The Messenger" features fast-paced ninja action, blending 8-bit and 16-bit aesthetics. The game is known for its tight controls, challenging levels, and clever time-travel mechanic.

10. Shovel Knight

- Developer: Yacht Club Games
- Genre: Action-Platformer
- Description: "Shovel Knight" is a love letter to retro platformers, combining challenging gameplay with charming pixel art. Players wield a shovel blade to defeat enemies and navigate treacherous levels.

Burndown Chart

