**COMP1682.1 Project Proposal**

**[Game 2D Metroidvania: Legends of Abyss]**

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1. **Overview**

Write 100 - 300 words describing as succinctly as possible the outline and rationale of your intended project using third person grammars (no ‘I’, no ‘my’).

Including:

* Context
* Problems in the above context
* Solution
* Benefits of this solution

In today's fast-paced world, people often gravitate towards shallow entertainment, neglecting the world's complexities. However, this presents an opportunity to merge entertainment with enlightenment through a multi-dimensional game. Such a game would captivate users with its immersive experience and convey profound messages relevant to contemporary society.

By intricately weaving societal themes into its narrative and gameplay mechanics, the game encourages players to delve deeper and contemplate essential issues. Its interactive nature empowers users to engage with these themes actively, fostering a sense of agency and prompting meaningful reflection.

Moreover, the game's accessibility ensures widespread adoption without imposing constraints, allowing users to explore its depths at their own pace. As a result, the game transcends mere entertainment, serving as a catalyst for dialogue and introspection on the pressing challenges of our time.

Keywords: [Game development, C#, OOP, Game design pattern]

<https://www.sciencedirect.com/science/article/pii/S2352250X21001500> (social media impacts)

<https://journals.sagepub.com/doi/abs/10.1177/07356331211053848> (video game in education)

1. **Aim**

Including:

- What will this project provide when finishing?

This project aims to create an exciting 2D Metroidvania game that engages users through open-world exploration by applying programming techniques such as OOP and design patterns for optimization—application performance. From there, the final product will deliver a smooth experience so players can enjoy the game world while discovering the plot and hidden messages. The project is expected to be implemented on a scale in Vietnam, where most young people spend too much attention on forms of entertainment.

1. **Related works / Literature review**

Including:

Research about the relevant technologies available and previous works

* Their concepts/definition
* Similar products
* ...

1. **Objectives**
   1. Research report.
      1. A document on project development orientation, including work to be performed and research objectives.
      2. Define project objectives.
      3. Define project scope.
      4. Define project’s hypotheses.
      5. Conduct research in related works or technologies [3]
      6. Writing Research Report Document [2.0]
   2. Design Documentation.
      1. A basic document about the final product including required game mechanics, features, story, technology, etc.
      2. Conceptualization for game content [1.5]
      3. Define main game mechanics and non-mechanical requirements.
      4. Design use case.
      5. Design class diagram.
      6. Design and write documents [2.0]
   3. Implementation
      1. The outcome is the product will be completed after this stage and ready for testing.
      2. Implement core game mechanics (movements, skills, etc.) [15.0]
      3. Implementing general secondary mechanics (algorithms of enemy types, cut scenes, etc.) [60.0]
      4. Add audios, sprites, and animations to the project [7.0]
      5. Implement level design for project [10.0].
      6. Implement GUI, Menu functions and export project to app file ".exe".
   4. Testing
      1. The outcome is a finished product that has been tested, ensuring the fewest bugs.
      2. Plan and design the testcase.
      3. Functional Testing.
      4. Performance Testing.
      5. Report results.
      6. Repair the bugs.
      7. Repeat cycle.
   5. Evaluation and Reflection Report
      1. The outcome describes this goal in more detail than conducting a comprehensive review of the completed project.
      2. Evaluation of final product (game performance, features, etc.) [3.0]
      3. Evaluation process of development [1.5]
      4. Evaluation user feedback [2.0]
      5. Complete the final project report.
   6. Project Framework or Any Methodology used

The Agile method will be applied in this project because of its suitability for the game development process. Iterating over project segments is excellent for developing a project feature. Features need to be thoroughly completed and error-free to be able to continue to the following parts. Precise planning also helps a lot in controlling the progress of the project. A small final product in each segment is gradually accumulated one after another. It will eventually become a finished product, entirely consistent with developing a game product. Finally, check and evaluate the results. At the end of each stage, a step will be used to evaluate the progress made, thereby determining strengths and weaknesses, and overcoming them in the following stages. At the same time, the quality of the product should be evaluated to supplement it if necessary.

1. **Legal, Social, Ethical and Professional**

*Identify and discuss any legal, social, ethical and professional issues and considerations in this proposed project. What are the applicable laws? Will this project effect societal change? Is the proposed system open to abuse? How will you address the issues in a professional manner?*

*All projects which include contact with people (other than university staff and students you are expected to interact with in the normal course of your degree programme) will require clearance from the Research Ethics Committee. Such contact may, for example, be interviews or questionnaires to elicit requirements or evaluation such as user acceptance testing.*

**Introduction:**

- Your project’s main aims and its benefits.

- The necessity or the importance of Legal, Ethical, Social, Professional for your project. (Short paragraph).

The project aims to convey modern messages profoundly through an entertainment application. The most significant benefit of the product is that with the passive transmission of the game's story, users will actively learn and explore it without feeling constrained or oppressed. Legal, Ethical, Social, and Professional elements are essential to the project. This project prioritizes legal compliance, ethical integrity, social responsibility, and professional excellence. It aims to comply with intellectual property laws, promote inclusivity, address social issues sensitively and maintain high standards of quality and professionalism.

* 1. **Legal**

With a technology product, it is paramount to comply with the Vietnamese government's intellectual property laws, regulations, and user protection policies. The final project should ensure that it does not infringe on intellectual property issues: The resources in the project need to be transparent about the origin or have full licenses for use rights. In addition, it strictly complies with the principles of user information security.

* 1. **Social**

On the social side, it can be summed up that this project aims to create positive impacts on society by raising awareness, empathy and issues surrounding everyday life. It aims to raise awareness of sensitive social issues and arouse positive thoughts so players can reflect on their beliefs and actions about life around them. Moreover, cultivating a supportive community around the game is also necessary for players to connect, creating an engaging environment to attract players and create social impact.

* 1. **Ethical**

Ethically, the project is committed to upholding 100% of the ethical principles and values in Vietnam and strives to avoid ethical violations on a global scale as much as possible. This includes respectfully portraying the story, perspectives, and experiences of players when exploring the story in the game and avoiding stereotypes or objectionable content. In addition, if the product is put into business, transparency with stakeholders such as publishers or advertisers should also be carefully considered and transparent.

* 1. **Professional**

From a professional point of view, a commitment to high standards of product quality, integrity and professionalism throughout the product development and delivery process is paramount. This involves constantly learning to use best practices in the same field. Moreover, it is necessary to actively communicate, seek relationships to find quality partners to improve the quality of the final product.

1. **Planning (see appendix A)**

*You will describe 2 major contents:*

*- What model will you use to make a schedule (for ex, Scrum, Scaled, Crystal, Kanban.... you should look at the development process in Enterprise Web Software Development or Software Lifecycle).*

*- What do you plan to do for each phase of your project?*

*And show your schedule created on project management software (for ex, MS Project).*

*You should put the Gantt chart (based on your schedule) in Appendix A.*

The Agile model was chosen for the project because of its suitability for a project with a complex implementation process and many features. Because with the orientation of a game, the development process at each stage will be suitable. When developing Metroidvania 2D games, features such as running, attacking, surfing, jumping, etc., are essential. With so many functions to perform, adopting an Agile model is appropriate because the requirements are unclear. This model's flexible working model will help apply new requirements to the project quickly. Fast. Breaking down the stages of task management and implementing several functions will help deliver results for features and products faster than waiting for a critical function to complete the process. Finally, sprinting allows Agile to focus on specific goals and tasks while helping to manage project progress closely.

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1. **Initial References**