

National Dong Hwa University

109 CSIE Project Report

Game “Galaxy Hero”



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中 華 民 國 109 年 05 月 28 日

國立東華大學資訊工程學系

專題報告原創性聲明

National Dong Hwa University

Department of Computer Science & Information Engineering

ORIGINALITY STATEMENT

'We hereby affirm that the submitted project report is the result of research under the supervision of our advisor. Except where due references are made, the report contains no material previously published or written by another person, group or university.

We also declare that the intellectual content of this project is the product of our own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged. All significant facilitators to the project have been mentioned explicitly.

Should any part of the statement be breached, we are subject to the punishment enforced by the University and any legal responsibility incurred.'



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ACKNOWLEDGEMENTS

We are grateful to God who has given us His grace and guidance so that we can complete the undergraduate game project called "Galaxy Hero".

Throughout the writing of this project, we have received a great deal of support and assistance. We would first like to express our deepest appreciation to our Advisor, Professor 顏士淨 (Shi-Jim Yen). Whose expertise was invaluable in helping us provide direction in improving the projects we create. He also provided us with the tools needed to complete this project. Professor, Professor your insightful feedback pushed us to sharpen our thinking and brought our work to a higher level.

We also thank all those who have shared some of their knowledge so that we can complete this project.

In addition, we would like to thank our parents, friends, and family for their wise counsel and sympathetic ear, they are always there for us.

We realized that the project was far from perfect. Therefore, we will look forward to constructive criticism and suggestions for the perfection of this project.

ABSTRACT

Trash is one big problem in the world, if trash is not paid attention to and waste disposal is irregular, it can make the condition of the planet we live in now even worse. Therefore we need a learning study about waste. One of the learning media that can be used is to use learning through games. Recently, games have become a trend in themselves for the community, games are even believed to be a release for stress, besides that games are also useful as a means of education in the current era.

The game includes an educational game we named Galaxy Hero is game-based Unity and 3D.. Animation processing in this game uses the Unity 3D program as the main application program and other supporting application programs and uses the C # programming language. This research method is the development life cycle method. The resulting game is a game in the form of a planet where the hero fights monsters and collects trash to add points.

Keyword: Trash, Education game, Unity, C#

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INTRODUCTION

Trash is something that is not used, disliked, or something that is thrown away from human activities. From the data, current estimates show that about 85,000 tons of waste is generated daily in Indonesia, especially if it is calculated in total for every country on earth it would be a lot. If trash is not paid attention to and waste disposal is irregular, it can make the condition of the planet we live in now even worse. Therefore we need a learning study about waste. One of the learning media that can be used is to use learning through games.

Recently, games have become a trend in themselves for the community, games are even believed to be a release for stress, besides that games are also useful as a means of education in the current era. Educational games provide many benefits for players, including stimulating their thinking and increase motivation. Previous studies have shown some convenience in the use and use of educational games in learning activities. The games we are making include educational games. This game teaches us to pay attention to the trash in the environment around us because trash is a problem in all parts of the world.

The game includes an educational game we named Galaxy Hero is game-based Unity and 3D. Unity provides a script feature, which is used in game development. Galaxy Hero using a script with the C # programming language, but one script must be integrated with other scripts so that the scripts can be connected and work together to run the game. therefore the script must be made regularly so that the system runs well.

The Galaxy Hero is presented in the form of a planet and with Hero character will appear in the game as the savior of the planet from the monster that appeared because of trash. The hero will be given a gun when he is stranded on the planet as a form of self-defense from monsters while he collects trash. In the game, when the hero succeeds in eradicating the monsters, the hero's life increases but if the hero is hit by a monster the life decreases and when the hero collects every piece of trash, the player points will increase. Each level of this game difficulty will increase.

MOTIVATION AND RESEARCH PROBLEM

Motivation

Seen from all aspects, the trash on this earth is getting more and more over time. Trash that is not disposed of regularly can cause various problems, especially health problems and environmental problems. Laziness can also be a factor in the accumulation of garbage, people rarely work and prefer to pile up garbage without throwing it away.

It's one of the main factors in the making of galaxy hero games, besides being able to provide learning about the environment and disposing of trash in its place, the games we make can also be reflex and concentration trainers. players must have good reflexes when playing the game because monsters in the game can cause lives to decrease and die, concentration is also needed to avoid monsters and collect trash and throw it into place as an added point.

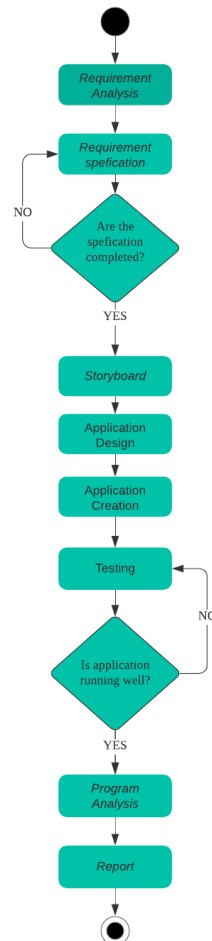
Research Problem

In the game, the problem we raised was how to make a game about waste education by presenting a 3D planet theme and how to make a planet display that attracts the user so that the user doesn't get bored of playing games made with unity and use the C # programming language.

RESEARCH METHOD

we used the SDLC method (Systems Development Life Cycle) in designing this game.

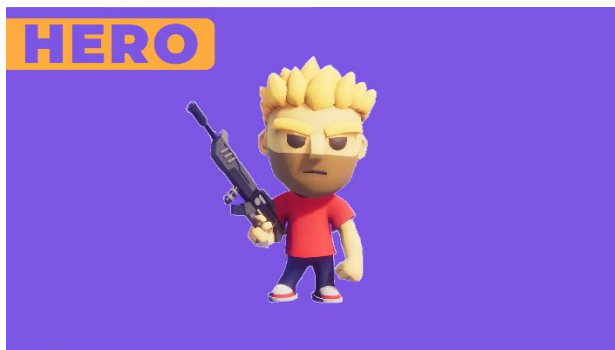
As for the stages research can be seen below



Requirement analysis in this game is stage where the process of analyzing the application requirements is good in terms of software and hardware for make it easier in the next process. And we use unity and blender to make games. Requirement Specification is the next stage, In this stage we compile a use case that will we used in the game



based on the use case we made we determine the game character that will be used in the game



Character hero in here will be main character, hero walk, shoot monster and collect trash, but if hero hit by monster the life will be decrease, and when hero collect trash the point will be increase.

MONSTER



Monster in here as an obstacle in the game, monsters will be scattered all over the planet. monsters can be killed with the hero gun but monsters can also kill the hero if the hero comes into contact with the monster

BOSS



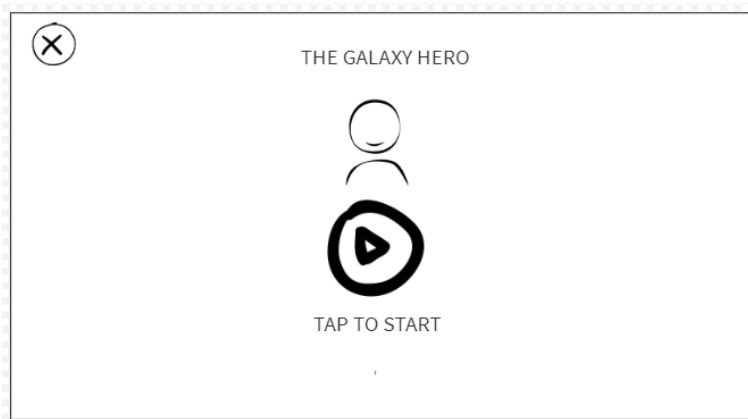
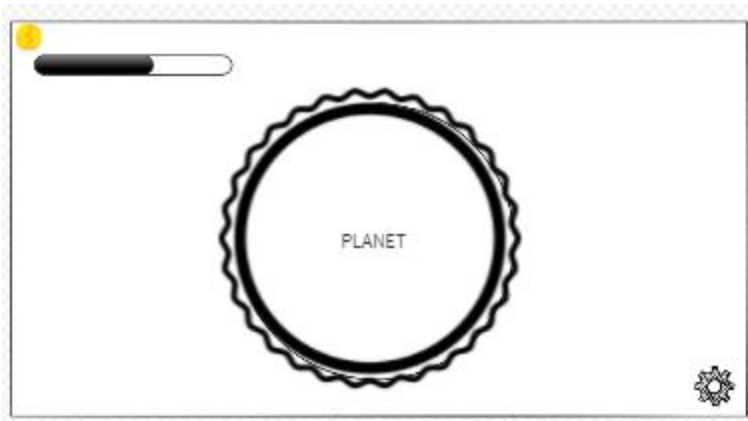
Boss monsters will appear when small monsters have been killed and their level has risen. Killing boss monsters is a bit difficult, therefore the hero must prepare a full life and strategic steps.

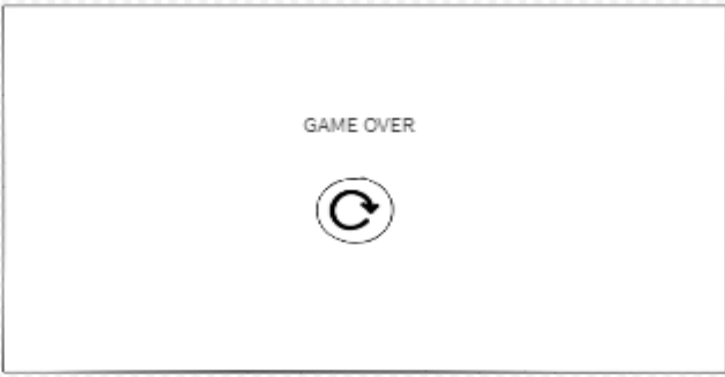
TRASH



Trash is the same as monsters, which are scattered all over the planet. but the trash here must be collected to add points.

The next stage is making a Storyboard which is done by making a series of sketches that show how the game will run. After that, proceed with the Application Design stage which contains activities to design game interface designs. The design process follows the results of the analysis so that it fits your needs. we have prepared a wireframe as a basis for creating a game display





The next stage is application creation that is designed using unity and a blender. Then proceed with the Application Testing stage which was tested on three people by playing the game, the results showed the game ran smoothly without any errors. The last stage is Research Analysis. In this case, we tested it by playing the game and looking back at the code in the c stack.

RESULT

In several stages that we have done, we succeeded in loading the galaxy hero game with unity and blender, our galaxy hero game has reached the stage of refinement by presenting the game start view, game main view, and game over view and menus that can be useful in the game. We have successfully designed the Galaxy Hero game according to our goal, which is to educate about the trash that our game presents in the form of a planet. Here we include images of the results of our games.

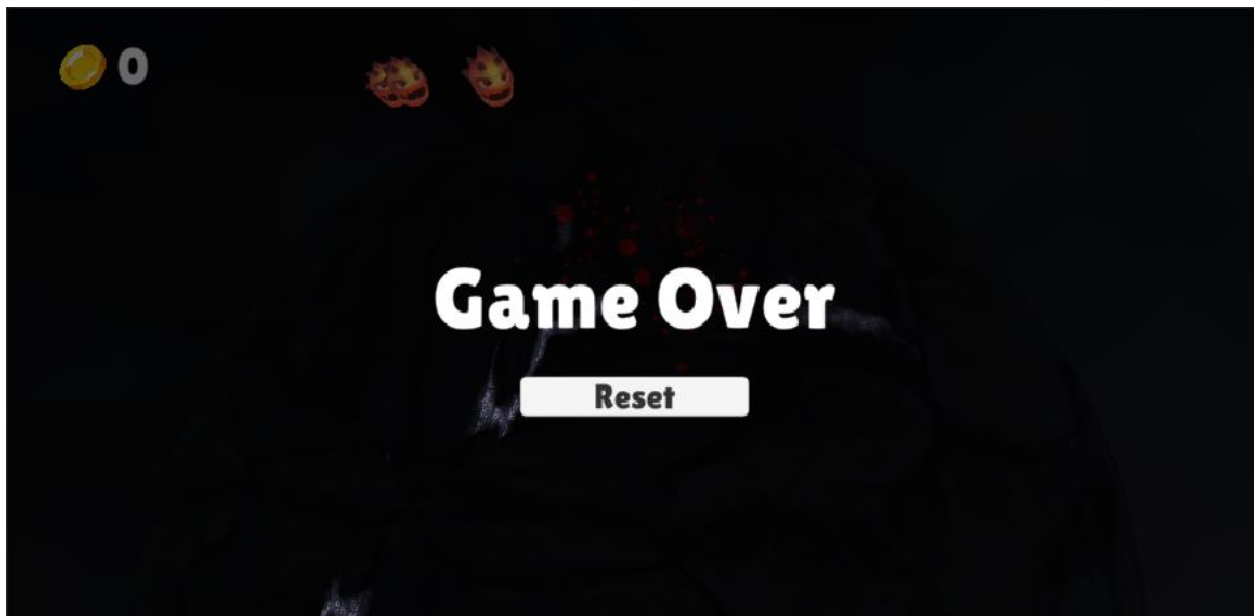
Game start view



Game main view



Game over view



CONCLUSION

More than billion tons of trash waste around the world If trash is not paid attention to and waste disposal is irregular, it can make the condition of the planet we live in now even worse. This document proposes research to make you aware of the importance of maintaining cleanliness and the problems caused by old piles of garbage by using a game implementation where the game is an educational way to convey learning. the game is made with unity 3D and uses the C # programming language. where C # is a general-purpose, multi-paradigm programming language encompassing static typing, strong typing, lexically scoped, imperative, declarative, functional, generic, object-oriented, and component-oriented programming disciplines.

REFERENCES

Simon Galaso. 26 June 2019. Faux gravity planet top down shooter test game.

<https://www.youtube.com/watch?v=kZwUEDRsvSE>

Sawneystudios. 21 March 2019. Unity Tutorial: Planet Spherical Gravity (Multiple Planets!)

- Super Mario Galaxy Movement. <https://www.youtube.com/watch?v=UeqfHkfPNh4>

Synthesis Report. April 2018. INDONESIA MARINE DEBRIS HOTSPOT. Worldbank

Thegametoolbox.com