

Game-based Learning: ADS games

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A dissertation presented in part fulfillment of the requirements of the Degree of Master of Science at the University of Glasgow

5th September 2019

**Abstract**

<Abstract goes here…>

Education Use Consent

I hereby give my permission for this project to be shown to other University of Glasgow students and to be distributed in an electronic form.

<**Please note that you are under no obligation to sign this declaration, but doing so would help future students.>**

Name: Signature:

Acknowledgements

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# Introduction

Game-based learning is concerned with the use of games to enhance the learning experience. Learning comes from playing the game. It promotes critical thinking and problem-solving. Meanwhile, Data structures and algorithms are the most fundamental concepts in Computing Science. Computing science aims at building an effective foundation for the development of programming skills by teaching algorithms and data structures to students.

This project requires you to create a **local multiplayer educational game platform** in which multiple users challenge themselves and peers to solve small problems involving writing their algorithms and implementing them in different programming languages. The purpose of the game will be to enhance student learning in ADS which provide them with the foundation in programming and enhance their engagement. The project will start with a review of similar technologies. It will then use appropriate tools to develop the application and finally test and evaluate the final product.

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## A section <This is style Heading 2>

Please note your dissertation need not follow the included section headings – this is only a suggested structure. Also add subsections etc. as required.

### A subsection <This is style Heading 3>

Try to avoid this too much, but it’s here if you need it.

# Background Survey

[1] M. Romero, Game-Based Learning Across the Lifespan, Basel: Springer International Publishing, 2017.

Key point for educational game: **Competition, number of players, rules, predeterminded goal, learning content**.

**Competition**: to maintain a degree of uncertain---- add a random event.

**Number of players**.

**Predeterminded** **goal**: how will the game end, reward and victory.

**Learning content**: a balance of learning and playing in the game.

(the author recommend repeating questions/ informations units within a game, reusing them several times)

“We suggest gradually reducing repetition as the degree of difficulty increases in order to maintain competition and young people’s interest”

[2]M. T. Goodrich, Data Structures and Algorithms in Java, Hoboken: John Wiley & Sons, Inc. , 2014.

**Data structures**: Array, Singly Linked List, Doubly Linked List, Circulary Linked list.

**Abstract Data Type**: Stacks, Queues, List, Trees, Maps, Hash tables, Search Trees.

**Sorting and Selection:**

<https://doc.photonengine.com/en-us/pun/v2/demos-and-tutorials/pun-basics-tutorial/intro> photon API

## Similar games:

Homework is crazy(steam)

# Requirements

<Figure below is in style “figure” which continues to style “figure caption” when you press Enter and then back to “Normal” when you press Enter again.>

Figure 1: Some important shapes.

<If you wanted to show any code fragments, you could use the following style called code, which could then be followed by figure caption..>

*# This is a little bit of Python*

**for** i in range( 10 ):

**for** j in range( 10 ):

**print** i\*j,

**print**

Figure 2: A crucial algorithm for the project.

# Design and Implementation

Show how you plan to organise your work, identifying intermediate deliverables and dates.

# Evaluation

# Conclusion

# Bibliography

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| [1] | M. Romero, Game-Based Learning Across the Lifespan, Basel: Springer International Publishing, 2017. |
| [2] | M. T. Goodrich, Data Structures and Algorithms in Java, Hoboken: John Wiley & Sons, Inc. , 2014. |

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