Title of Your Final Project

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***Abstract*—Please summarize the scope of the final project; briefly mention the methods and your design and the outcomes of the project. The total number of the worlds need to less than 500 words.**

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***Keywords—your-keywords (any keyword related to the project)***

# **I. Problem Description**

This is an introduction section that provides a fundamental background of the project. The scope of the work and the purpose of the project.

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# **II. Analysis (Related Work)**

The classic and wildly popular action maze chase video game Pac-Man was first released in Japan. In this game, the player guides the yellow Pac-Man character through an enclosed maze while avoiding ghosts to consume all the dots put there.

Pac-Man is one of the most popular arcade games of all time. In America, it brought in more than $1 billion over three months. selling more than 100,000 arcade units in just two years. As soon as it was released, it was a big success all throughout the country.

However, there are some shortcomings about Pac-Man. The game is very straightforward and basic. It’s an old game. Continually playing the game gets boring. Although it has evolved over the years, it is still the same game that came out in the 1980s.

A picture containing background pattern

Description automatically generated

Figure 1. In-game screenshot of the classic Pac-Man.

# **III. System Design**

We incorporate all the OOP ideas with JavaFx that we learned throughout the course to design the application. Users play with our JavaFX application and the application interacts with some text files which are used to do data persistence.

Text

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Figure 2. System architecture

In the Pac-Man in space application, we have two pages which are menu pages and game pages:

A picture containing graphical user interface

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Figure 3. Draft UI designs of menu and game pages

When a user starts the game, user goes to the menu page firstly. In this page there are some buttons including CREATE, PLAY, SCORES, HELP, CREDITS and EXIT. PLAY button is used to start the game which means going to the game page. CREATE is used to submit a username and EXIT button is used to close the application. When user click EXIT button, we save the user’s scores to a specific file and then close the application. Other buttons are used to present some specific information like instructions, history scores and so on.

Diagram

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Figure 4. Workflow of Pac-Man in Space

Here is the UML Class diagram of the application.

Diagram, schematic

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Figure 5. UML Class diagram

# **IV. Implementation**

In this section, you should provide the details of the implementation. For example, each of the required topic, external libraries, RESTful APIs, etc.

A. *Sub-title-1*

This is the subsection to explain the implementation of part 1.

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B. *Sub-title-2*

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Figure 6. Caption of Figure

# **V. Evaluation**

Present the result of the project. You are suggested to have following content in this section:

* The screenshots of sample run and the explanation
* (Optional) The comparison between your solution and other people’s work
* (Optional) The user study with real users, such as 3-4 people, and conclude the feedbacks. (quantitative or qualitative evaluation)

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# **VII. Discussion (Reflection)**

Discuss the results and the data or outcome of your project; Please provide some insightful discussions in this section.

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# **VIII. Conclusions and Future Work**

Please summarize the findings of the project; You can also try to answer any of following questions:

* What are the advantages or benefits of using your solution?
* What are the problems found but not yet explored in the project?
* If your team has more time, what do you want to improve?

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# **IX. Job Assignment**

Please list down the team members’ contributions to the project. Based on the individual’s contributions, the grade of the final project will be adjusted according. For example:

* Member 1: UML class diagram, UI design, Main class, login page, databases, …
* Member 2: ImageView implementation, layout design, …

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##### **References**

1. D. Gehring, S.W., G. Mornieux, A. Gollhofer. How to sprain your ankle- a biomechanical case report of an inversion trauma, *Journal of biomechanics,* 2013. 46(1): p. 175-178.
2. Carl G. Mattacola and Maureen K. Dwyer. Rehabilitation of the Ankle After Acute Sprain or Chronic Instability. *J Athl Train*. 2002 Oct-Dec; 37(4): 413–429.
3. Omar A. Al-Mohrej and Nader S. Al-Kenani. Acute ankle sprain: conservative or surgical approach? *EFORT Open Rev.* 2016 Feb; 1(2): 34–44.