

The University of Hong Kong  
Department of Computer Science

Final Year Project  
Interim Report

**Strengthening Youths' Competencies for  
Mental Health Self-care**

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# Abstract

The high prevalence of mental health problems (such as depression and anxiety) has caused personal and societal consequences, including poor quality of life, increased suicide rate, expensive healthcare costs and reduced labor productivity. However, current measures to mitigate the issue are inadequate due to their limited reach to the target audience, expensive costs, and low accessibility. Therefore, there is a demand for a low-cost, accessible solution to improve public health well-being and reduce suffering. In this project, a mobile game will be developed as an early intervention measure for youths to decrease the risk of mental health diseases. The game will be developed using Unity game engine with C# as the programming language. In the game, users will be able to perform a variety of self-care activities, such as doing physical exercise, building connections with people around, and writing self-reflections. It is hoped that users can see improvements in their health after playing the game on a routine basis for some time, thus relieving the current stress of the healthcare system.

# **Acknowledgement**

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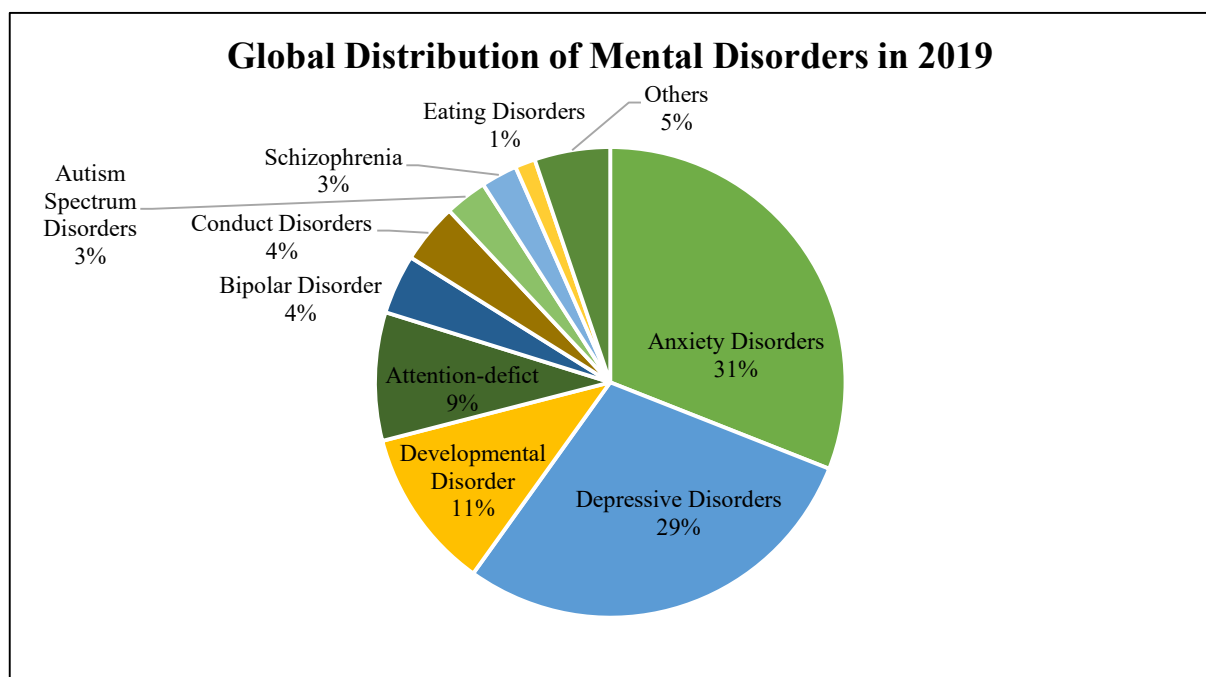
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# 1 Introduction

Mental health affects the way humans make decisions, feel emotions, and take actions. It has an important role in our well-being, as it helps us to cope with stress, connect with others, and make society contributions. The World Health Organization defines mental health as “an integral component of health and well-being and is more than the absence of mental disorder.” [1] In section 1.1, the high prevalence of mental health problems will be explained, followed up by the negative consequences of poor mental health in section 1.2. Section 1.3 will then discuss the challenges of current existing solutions. In section 1.4, an early intervention method for mental health will be introduced, where section 1.5 will introduce video games as the medium for improving mental health. Section 1.6 will discuss mental health issues associated with video games. Finally in section 1.7, the project aims will be shown.

## 1.1 Prevalence of Mental Health Problems

Mental health problems are prevalent across the globe. In 2019, it is estimated that 1 in every 8 people, or 970 million people, are living with a common mental health condition around the world [2], with anxiety disorders and depressive disorders being the most common, accounting for around 60% of the mental disorder cases (see Figure 1) [3]. Moreover, despite the steady

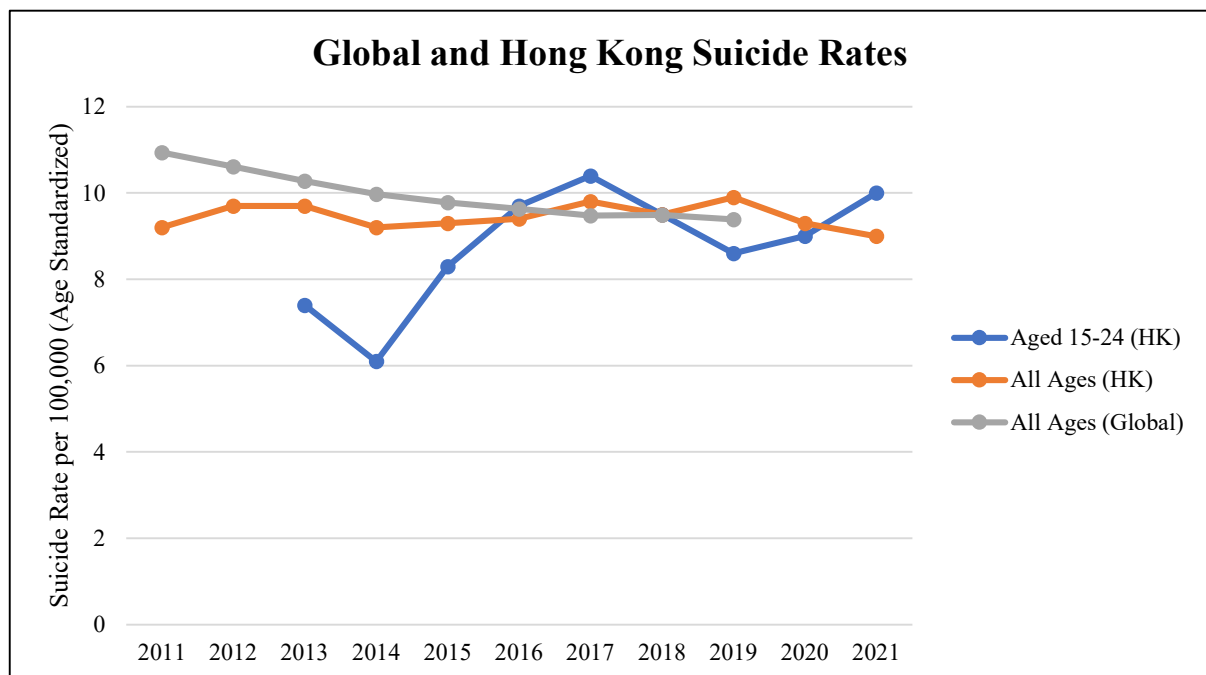


**Figure 1:** A graph showing the global distribution of mental disorders in 2019 [3]. Anxiety disorders and depressive disorders being the most common mental disorders.

prevalence rate of mental disorders in the recent years, the number of people living with mental disorders is still on the rise due to the global population growth, with an estimated increase of 25% between 2000 and 2019 [3]. This data is even higher for the youths in Hong Kong, where an increasing trend in mental health problems can also be observed. It is found that there is a 50% increase in the number of children and adolescents diagnosed with mental health problems from 18900 in 2011 to 28800 in 2016 [4].

## 1.2 Consequences of Poor Mental Health

Poor mental health will lead to premature mortality. It is found that individuals with severe mental health conditions have a higher chance of getting preventable diseases, therefore they have a decreased lifespan of 10 to 20 years [5]. Poor mental health may also lead to suicides, which accounts for more than 1% of the global deaths [6], and 8% of the deaths among the 15-29-year-olds [7]. In Hong Kong, the suicide rate between 2013 and 2021 for people aged between 15 and 24 has increased by 2.6, up to 10 per 100,000 people [8]. This is higher than the latest global suicide rate in 2019, which has reduced by 36% since 2000, to 9.39 per 100,000 people [9]. The increase of the suicide rate of youths is also higher than other age groups in Hong Kong, this is indicated by the converging difference in the suicide rate between these two groups (see Figure 2). A recent survey conducted by the Hong Kong government also shows



**Figure 2:** A graph showing the Hong Kong and global suicide rates by age groups [8]. The increase of the suicide rate of 15-24 age group is higher than other age groups, as indicated by the converging difference in the suicide rate between these two groups.

that 2.8% of the children reported thinking about committing suicide in 2023, with 1.3% or around 4300 students proceeded to attempt to suicide [10].

Youths with mental health conditions may impact their studies negatively as they struggle to concentrate or focus due to stress or sleep difficulties. It is shown by research that depression is associated with poor academic performance and attendance in school [11], this will impose challenges in their future employment and overall health [12].

Mental health conditions will also have impacts to the society. For instance, economic productivity is decreased due to premature deaths or disability. It is estimated that the societal cost of each treated individual, including the costs of treatment and forgone production value, is between US\$1180 to US\$18313 [8]. It is also projected that the global total cost of mental health conditions will rise from US\$ 2.5 trillion in 2010 to \$ 6 trillion in 2030 [9], which is higher than the costs of other severe diseases combined such as cancer and diabetes, indicating the significance of the cost of mental health problems.

### **1.3 Challenges of Existing Solutions**

Existing counselling services can improve mental health. However, stigma is preventing individuals from seeking professional support due to the risk of being discriminated in the society. Mental health is often misunderstood, individuals with mental health conditions are stereotyped to be irresponsible, irrational, or dangerous [13]. An example would be the term “Schizophrenia”, which has been labelled as “dangerous” as the name translates to “splitting of mind”. To counter this, governments in Japan, South Korea, Taiwan have either introduced a new name such as “dysregulation of thought and perception”, or straight up renamed the disorder in an attempt to reduce stigma [14]. People can experience stigma anyone in the society, from friends, families, professionals or even themselves, which pushes those people to choose to suffer from mental health illness instead of getting help. For instance, only 26% of the Hong Kong citizens diagnosed with mental disorders have consulted professional help in the past year [15].

Another hurdle of mental health care is the service gap. In Hong Kong, there are only 4.39 psychiatrists per 100,000 people [16], which is half the number recommended by the World Health Organisation. The shortage of mental health works results in long waiting time to see a psychiatrist in the public sector, which can reach up to 95 weeks for some stable mental health



cases [17]. Moreover, the cost of a private sector psychiatric counselling session is unaffordable for some low-income families as their cost can range from HK\$1200 to HK\$1500 [18], which is 10 times more expensive than the public sectors [19]. As the wealth gap in Hong Kong continues to widen, more and more people will be unable to seek mental health support from professionals.

Youths could also look for self-care materials individually by researching online. However, some of the web pages might contain inaccurate or misleading information. On top of that, information on the Internet is very scattered, therefore it could be very time-consuming for the youths to obtain the materials they need. Also, since self-care includes a huge variety of activities, the youths might only focus on the ones that do not suit their needs, and this will hinder the growth of their self-care skills.

There are physical products for self-care activities available from different organizations. For instance, consumers can buy gratitude journals specifically designed as a guide to help them write down their thoughts and feelings. However, physical products are not immediately accessible and are only available in some parts of the globe. Those products also come with price tags and individuals might be willing to invest money to purchase such products.

Self-care mobile applications are also available, but some of these applications require money investments. While alternative free version of those applications may be provided, they are very limited in terms on functionality when compared to the paid version. On top of that, another major downside of those applications is the lack of incentives for users to use them on a regular basis.

#### **1.4 Self-care as Early Intervention for Mental Health**

Early intervention of mental health illness refers to the actions done to identify early warning signs and help prevent symptoms from developing. Patients who have received early intervention had reported improvements in their lifestyle and quality of life [20]. It is estimated that half of all the diagnosed mental disorders start before 14 years old, and three-quarters start before 24 years old [21]. Early intervention during youth years will prevent more severe symptoms from developing in the later years. However, due to the huge demographic size, it would be unrealistic to provide professional care for early intervention of mental health to every individual.

The role of self-care is important when it comes to satisfying the society's demand for mental health. Self-care refers to activities that help individuals to live well and improve both mental and physical health even without the presence of a healthcare provider. A recent survey showed that the most-endorsed ways for improving symptoms of anxiety and depression are self-care activities including spending time outdoors and talking to people close to them [22]. Self-care can also be used clinically guided by specialists, this has been used in interventions for anxiety and depression and has shown to be as effective as face-to-face consultations [23].

However, self-care is underutilized. Research has shown that the prevalence of self-care use is only around 46.7% [24]. This means that the majority of the general population has missed out on a potential effective counter measure of common mental health problems.

## **1.5 Video Game as a medium for Improving Mental Health**

Video games can be beneficial when it comes to mental health. Different studies have shown that there are cognitive, motivational, social, and emotional benefits of playing commercial video games, including better spatial, problem-solving, and social skills, enhanced creativity and motivational style, elicited positive emotions, and much more [25]. This could be because that video games are becoming more complex. Nowadays video games do more than just provide entertainment, but they also create immersive experiences and become a medium to tell stories and convey ideas. For instance, the story of the game "Omori" revolves around a depressive young boy and explores his inner thoughts [26], while the game "Ring-Fit Adventure" encourages the users to do physical exercises at home on a routine basis [27]. There are also educational games like "Kahoot!" to increase students' engagement in learning [28].

The benefits of gaming can be very impactful to the society as the video game industry is becoming one of the most important sectors of technology nowadays. Report shows that there were 2.6 billion mobile game players in the world [29]. Video games are especially popular among youths, data shows that 99% of the male teens and 94% of the female teens play video games [30]. The convenience of mobile game applications, which can be installed on devices like smartphones and tablets, also contributes to the ever-growing size of the market demographic.

Professionals have harnessed those positive effects of video games through gamification and created tailor-made games. For instance, a video game has been designed in the medical field

for child cancer patients so that they would learn to adhere to their treatments [25]. Video games also make their appearance in the field of education as well, with teachers attempting to create educational games to aid students' learning process [25]. However, the outcomes of playing those games have yet to be scientifically evaluated, therefore the efficiency of gamification is still unknown. However, the potential and feasibility of such means have been highlighted in different studies.

In fact, video games hold significant advantages when it comes to mental health interventions. For one, video games tend to be more engaging especially among adolescents when compared to traditional lesson-based approaches of conveying mental health information, this is because it is a primary goal for the game designers to keep the players interested using gameplay mechanics. For instance, a role-playing game SPARX developed for countering depression has shown to be as effective as traditional therapy programs [25]. Video games are also almost immediately accessible to most of the people no matter where they live, the only entry barrier would be the cost and accessibility of hardware and software to run the game. Therapy sessions on the other hand are usually more expensive, with accessibility being dependent on the region that people reside in.

## **1.6 Mental Health Problems associated with Video Games**

Video game addiction, also known as gaming disorder, is commonly associated with video games. Video game addiction is defined as the impaired control over gaming for an individual, who would prioritize gaming over other daily activities in life [31]. The prevalence rate of video game addiction ranges from 0.21% to 57.60% among the general population depending on the screening method that the study used [31]. Even though the diagnosis process for this disorder has yet to be standardized, this data has shown the potential risk associated with video games.

Excessive gaming will lead to a series of negative psychosocial consequences. These often include lack of sleep, lack of social or real-life relationship, loneliness, poor academic performance, increased hostility and so on [32]. Studies have also shown that there may be physical consequences in addition to the mental ones such as hallucinations, seizures, wrist or neck pain and much more [32]. Therefore, it can be seen that video games can cause harm to individuals who have impaired control over the time spent on gaming as the negative

consequences outweigh the short-term entertainment those individuals receive from each gaming session.

## **1.7 Project Aims**

This project aims to contribute to solving mental health problems by helping youths to incorporate mental self-care routine into their daily lives and providing useful information on mental health wellbeing. To achieve that, this project proposes a mobile game application that will use video game industry's appeal to youths as an advantage for early prevention of mental health disorders like depression and anxiety. The deliverables of the project shall include an application that is installable on recent mobile devices running Android operating systems, along with a product manual that will include instructions on how to install and use the application.

The project does not aim to be a replacement for professional help. While self-care can improve individuals' physical and psychological health and is effective in early intervention of mental health problems, self-care itself cannot act as cure for individuals who have already developed severe symptoms of mental health disorders. Recovery of mental health illness requires support from professional health workers and medical substances. Therefore, the application will not give mental health diagnoses to individuals or give medical advice.

Users of the game can expect to improvements in health by practicing self-care on a regular basis using the game, which can lower the risk of getting mental health diseases like anxiety and depression through early intervention and prevention. Thus, the stress of the current healthcare system can be relieved as the number of patients with mental health problems is reduced. In the long term, this project may contribute to an increase in the labour productivity of the society due to decreased premature mortality rate and reduced number of individuals with disability.

The project will counter with problems associated with video game addiction by giving off life skills to users that will be useful even in the long term. Instead of the one-off entertainment that is rewarded from the traditional video games, this project will teach users the importance of self-care and the different ways of performing them. This way, users will be constantly rewarded something that is beneficial for them in the long time. The game will also limit the

amount of content that can be played per day, so that the amount of time spent on the game daily can be properly controlled by the application.

When compared to other solutions, the proposed game provides a better incentive for users to build a regular self-care routine. First, the game is more convenient on-the-go. Users can use the application whenever and wherever without the need of making appointments required in some other solutions. Second, the game uses the advantage of its anonymity to allow users to play the game with an ease of mind without the feeling of shame or fear of discrimination. Finally, the game has a low-entry bar for users as it is free of charge and is easily accessible on their mobile devices.

In the remaining parts of this report, the methodology of the project will then be offered in chapter 2, followed with the limitations that have been foreseen in chapter 3. The report will close with the schedule of the milestones along with the current progress of the project in chapter 4.

## **2 Methodology**

To achieve the goals mentioned in section 1, this project will go through 3 stages. Section 2.1 will explain the design stage, which will be the first stage of the project. Then, in section 2.2, information on the development stage will be given. Finally, section 2.3 will go through the content of the evaluation stage.

### **2.1 Design Stage**

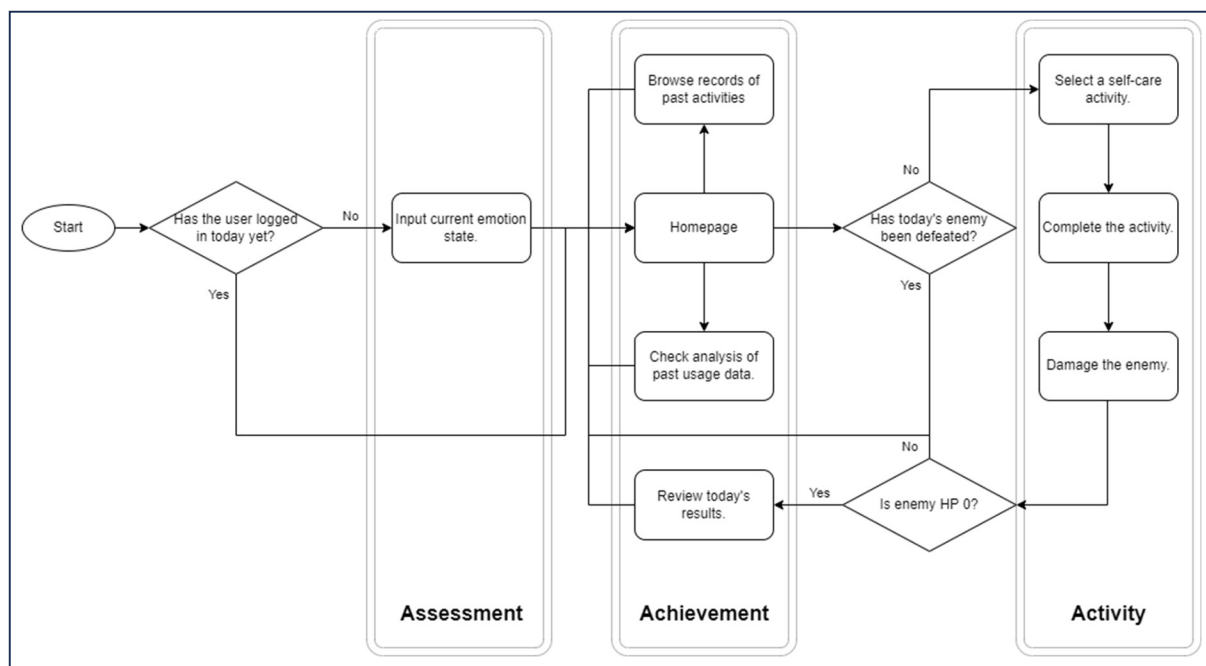
In the design stage, the product design and the prototype of the game will be created. The project will also seek opportunities to consult experts in the clinical psychology field to obtain opinions on the design of the in-game self-care activities and the overall user flow of the application.

## Concept Design

The concept design was first established to outline the major functions of the application. In the game, users are first asked to input their current emotion state into the game. Then, they can defeat some in-game enemies by performing self-care activities in real life. Finally, they can review the results as well as the achievements of activities done in the past. Users are incentivized to complete this flow on a daily basis through the implementation of game mechanics. For instance, users will then level up to unlock new self-care activities. There will also be a simple story that progresses as the user levels up.

## User Experience Design

The user experience design was then created to finalize the components of the application, it illustrates the process of how the users are going to use the application. In the current design, the application will feature three major components (see Figure 3).



**Figure 3:** A flowchart demonstrating the user experience (UX) flow of the application. The three major components are shown, including the ability to exercise self-care, review achievements and conduct emotion assessment.

First, users will be able to input their current emotion state, which includes giving a score on how happy or unhappy they are, and selecting the emotions that best describe what they are feeling today.

Then, users will be able to participate in a variety of self-care activities categorized into 6 categories (see Table 1). Those self-care activities will be presented to the users in two ways. First, the application will display instructions on how to perform the activity as well as other relevant useful information such as the benefits of it. Second, users will be able to interact with the application to input text, press buttons, drag sliders etc. Those interactive elements will help users to engage in the activities.

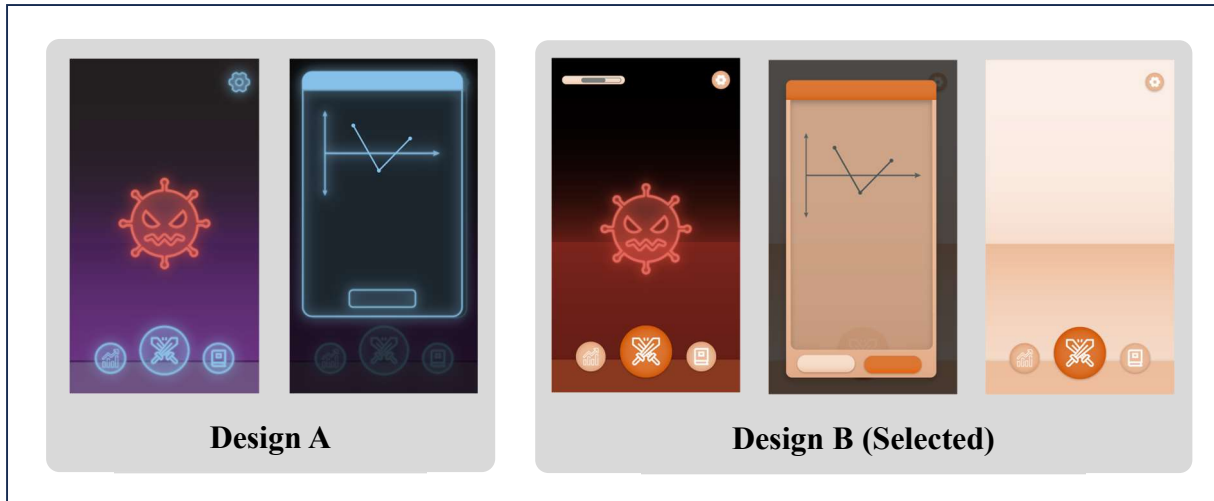
Category	Goal	Examples
Emotional	Learn emotion coping mechanisms.	<ul style="list-style-type: none"> <li>• Journaling</li> <li>• Self-reflection</li> </ul>
Mental	Simulate people's mind and energizes their mental strength.	<ul style="list-style-type: none"> <li>• Reading a new book</li> <li>• Use a new route to work</li> </ul>
Physical	Improve their physical well-being.	<ul style="list-style-type: none"> <li>• Getting enough sleep</li> <li>• Exercise regularly</li> </ul>
Spiritual	Give comfort to people's mind.	<ul style="list-style-type: none"> <li>• Taking a short walk in the nature</li> </ul>
Practical	Fulfil certain goals in life.	<ul style="list-style-type: none"> <li>• Tidying up the personal space.</li> <li>• Creating a budget.</li> </ul>
Social	Reach out and connect with the people they love.	<ul style="list-style-type: none"> <li>• Weekly calls with family members</li> <li>• Gathering with friends</li> </ul>

**Table 1:** A table illustrating six categories of self-care activities that are included in the game.

The third major component is the achievement overview. Users will also be able to review the past self-care activities that they have participated and see a summary of different metrics like the frequency of self-care activities participation, and the change in mood of the user. The overview will allow users to look for trends and improvements made since they first started using the application. The game will also analyse metrics collected using input that the user provided when completing certain self-care activities, users will be able to see the analysis results and have a better understanding of their current state of their mental health.

## User Interface Design

Two designs were created for the interface of the application (see Figure 4). Design B was selected as the final design because of the warmer colour temperature, which could be more comfortable to the users. This is important for the game due to the nature of it being about mental health.

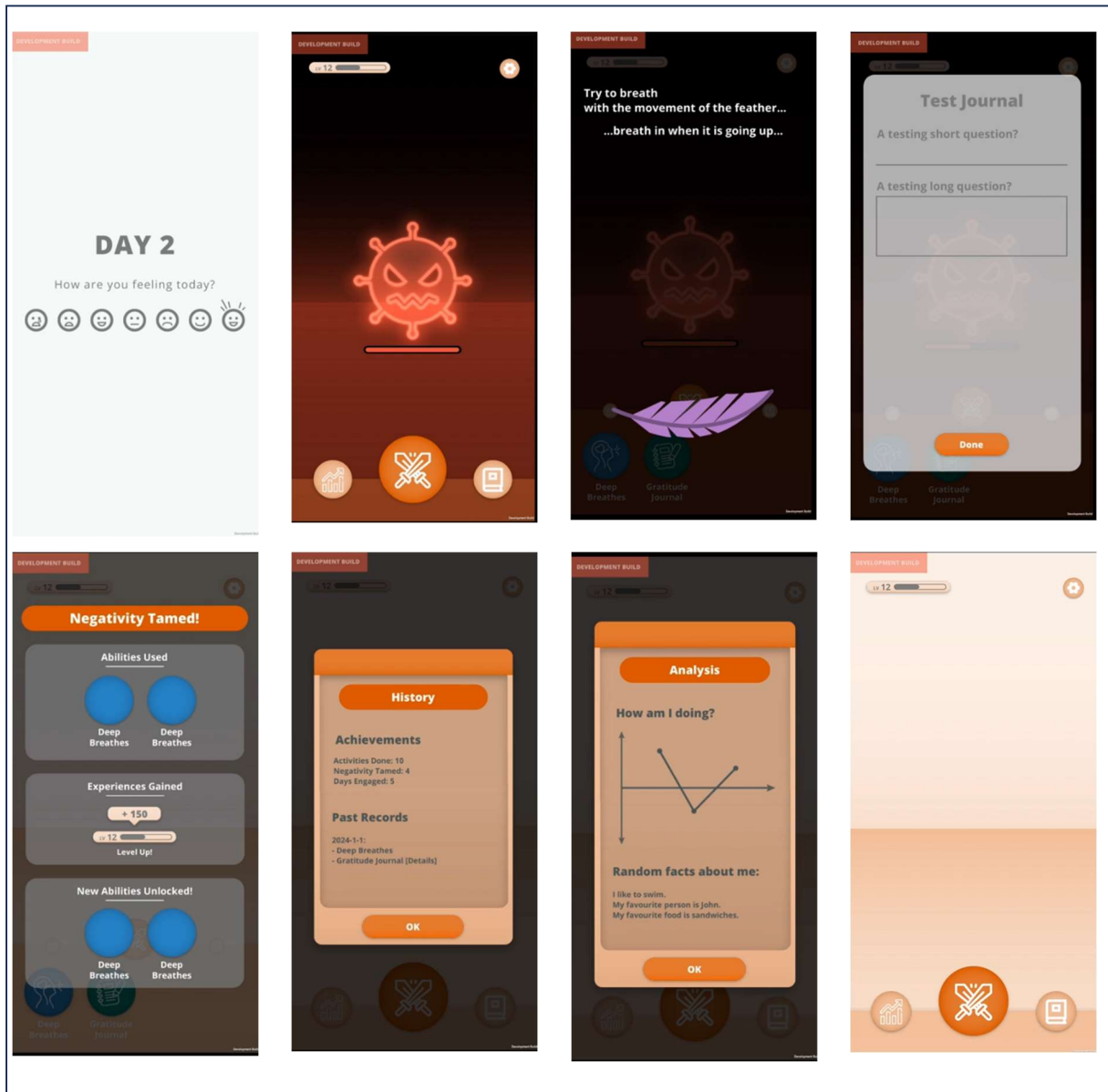


**Figure 4:** A comparison between the two designs created in the process. Design B was selected as the final design style of the application.

## Prototyping

The prototype is created to demonstrate the concept of the game (see Figure 5), the process of the user flow as well as to validate the feasibility of the data collection process. The prototype is equipped with the basic functionality of inputting emotion state and performing self-care activities. It also has achievement UI displays that do not use actual real data for concept demonstration purposes. It was built and run on the Android operating system successfully and it was able to send custom data to the Unity Analytics service.





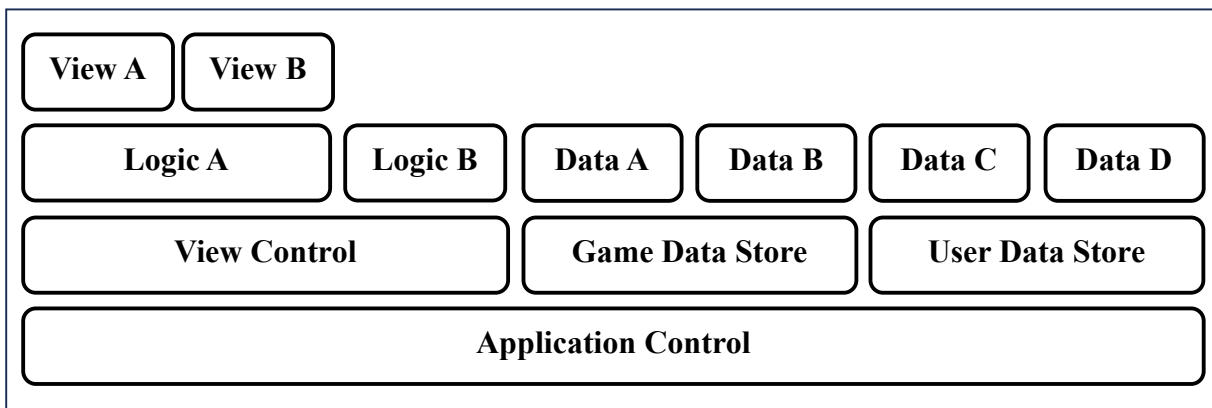
**Figure 5:** Several screenshots from the prototype. From left to right, then top to bottom are the emotion assessment screen, homepage with an enemy being displayed, guidance-based self-care activity, interaction-based self-care activity, result screen, history screen, emotion analysis screen, and homepage after the enemy has been defeated.

## 2.2 Development Stage

During the development stage, the application is developed using third-party toolsets following the system architecture design.

## System Architecture Design

In the current design, the application codebase can be categorized into three major sectors (see Figure 6). First, “view” scripts are responsible for converting raw data into UI display components. Then, they will be controlled by some “logic” scripts, which are responsible for filtering data and controlling the flow of the application. Finally, those “logic” scripts can access “data” scripts, which represent the user data that has been generated during usage as well as the game data that stores the fixed data for the game mechanics. Then, those “logic” and “data” scripts are managed by their respective singleton classes. On the lowest level is the application control singleton class, which is responsible for managing all the system components.



**Figure 6:** A diagram illustrating the system architecture of the application, the components on the lowest level are the parents to the components on the higher levels.

## Development Tools

The implementation of the project will be done using Unity game engine. Unity is a software that is specifically designed for game development, it is equipped with libraries and programs that facilitate the efficiency and reliability of the development process. Unity is chosen over other game engines due to its feature-rich capabilities and robust support for simple 2D games. Most of the code will be written in C# as it is the language used by the API of Unity. The code scripts will be written using Rider IDE with the help of Github Copilot to generate some of the repetitive code using the power of Artificial Intelligence. FairyGUI, a third-party software, will also be used for implementing the user interface of the game.

## **Development Cycle**

To facilitate the efficient development of the application, the process is split into three cycles, with a version of the application being built at the end of each cycle. Within each cycle, a list of features will be prepared along with their respective expected completion date, then those features will be developed using the tools mentioned above. Finally, all those features will be tested thoroughly before the version of the application in this cycle is declared completed.

### **2.3 Evaluation Stage**

During the last phase of the project, the application will be released in major distribution platforms for the public to download. Then, usage data of the application will be collected to evaluate the effectiveness in achieving the goals.

### **Application Publishment**

The application will be published to major mobile application distribution platforms to allow the general public to download and install the game. In the current plan, the project will prioritize the Google Play Store first due to the better availability of Android testing devices. The project will also try to distribute the application on the Apple App Store for iOS devices as well.

### **Data Collection**

To collect usage data, the application will connect to the Unity Cloud analytics service. During the usage of the application, it will send custom events loaded with data to the analytics service (see Figure 7). Those data are then retrievable using SQL queries on the console of the service (see Figure 8).

```
{
  "clientVersion": "1.0.2",
  "collectInsertedTimestamp": "2024-01-08 02:15:20.952",
  "eventDate": "2024-01-08 00:00:00.000",
  "eventID": 3210609358786376416,
  "eventLevel": 0,
  "eventName": "testEvent",
  "eventTimestamp": "2024-01-08 10:14:26.389",
  "eventUUID": "ab266a2f-3c5c-4377-8004-c31f67418420",
  "gaUserAcquisitionChannel": "None",
  "gaUserAgeGroup": "UNKNOWN",
  "gaUserCountry": "HK",
  "gaUserGender": "UNKNOWN",
  "gaUserStartDate": "2023-12-19 00:00:00.000",
  "mainEventID": 3210609358786376416,
  "msSinceLastEvent": 27,
  "platform": "PC_CLIENT",
  "sessionID": "43b4eeef-a361-469e-87b4-c83d661d44e9",
  "testString": "Hello world.",
  "timezoneOffset": "+0800",
  "userCountry": "HK",
  "userID": "c7cb69e9d1775d348acb09a91eb80966"
}
```

**Figure 7:** A sample of a custom event being sent to the Unity Cloud. It was equipped with a string type custom data as highlighted.

**Query**  
Execution time: 397ms ⓘ

```
1 select EVENT_JSON:testString as testString, EVENT_DATE from EVENTS
2 where EVENT_NAME = 'testEvent'
3 order by EVENT_DATE desc
```

TESTSTRING	EVENT_DATE
"Hello world."	2023-12-19

**Figure 8:** A screenshot of the console of Unity Cloud analytics service. An SQL query (top) was performed to retrieve data (bottom).

## **Data Analysis**

Usage data will be analysed to determine the successfulness of the application in solving the problems mentioned in the previous sections of this report. Three major areas will be examined. First and most importantly, the project will look for any trend or fluctuation in the users' emotions. More specifically, whether a change in users' level of happiness can be seen, and whether the words that the users selected to represent their emotions change. Second, the project will examine the usage frequency and duration of each session. Third, the retention rate will be analysed, which represents the average length of the time period that the users use the application.

## **3 Limitations and Risks**

The project has foreseen some challenges in achieving the goals with the current methodology. Section 3.1 will explain how the impact of the project to the society is proportional to the user base size. And in section 3.2, the difficulty in evaluating the effectiveness of the project will be explained. Finally, the difficulty in project management will be shown in section 3.3.

### **3.1 User Base Size**

While this project can improve individuals' health, the scale of change that this project can bring to the society is highly dependent on the size of the user base of the application. The larger the user base, the more people can be potentially benefitted from this project. However, the market for mobile application is highly saturated. To put into perspective, the number of app downloads in 2022 for the google play store is around 110 billion [33], but there are also around 2.69 billion apps in the store at the end of 2022 [34], which means the average download count for each app per year is merely around 40.9. Due to the limited scope of the project, there is currently no planned measures to ensure a high utility rate of the application by the target audience.

### **3.2 Sample Size of Data Collection**

The sample size of the data collection process is uncertain as there is no guarantee of how many people will be downloading the application. This means that there is a chance that the sample size is not big enough to conduct a valid data analysis. To mitigate this limitation, the project will attempt to seek for possible alternative methods to measure the effectiveness during the later phases as a backup plan in the event that the sample size is too small.

### **3.3 Project Size Management**

This project faces risks of incorrect estimation of workload due to unforeseen tasks or problems. Game development is a process with a large workload consisting of different types of tasks, including feature development, user flow design, user interface design, game design, visual assets creation, and effects design. Due the limited manpower in this project, an incorrect workload estimation during planning will easily cause delays or even under-delivery of the final product. To tackle this, each milestone shall be divided in different sub-tasks and be given priorities. Tasks with higher priorities shall be completed first to ensure the completeness of the final product produced within the limited timeframe.

## **4 Schedule and Milestones**

The project will consist of several milestones, a set of deliverables will be available at the end of each milestone period. Currently, the product design has been completed with the delivery of the detailed project plan and web page. However, the development of the application prototype has been delayed, it is expected to be delivered in Early December. The project progress and schedule for the remaining milestones is shown in Table 2.

<b>Milestone #</b>	<b>Expected Completion Date / Period</b>	<b>Deliverables</b>	<b>Current Status</b>
-	1 <sup>st</sup> October 2023	FYP Phase 1 <ul style="list-style-type: none"> <li>• Detailed Project Plan</li> <li>• Project Web Page</li> </ul>	Completed
1	12 <sup>th</sup> November 2023 Late-December	Prototype <ul style="list-style-type: none"> <li>• Basic User Interface</li> <li>• 3-5 Simple Self-care Activities</li> <li>• Simple Game Mechanics</li> </ul>	Completed
-	10 <sup>th</sup> January 2024	First Presentation	Completed
-	21 <sup>st</sup> January 2024	FYP Phase 2 <ul style="list-style-type: none"> <li>• Preliminary Implementation</li> <li>• Detailed Interim Report</li> </ul>	Completed
2	<del>Mid-December</del> Late-January	Alpha Version <ul style="list-style-type: none"> <li>• 10 Self-care Activities</li> <li>• Emotion Assessment System</li> <li>• Game Mechanics System</li> </ul>	In progress
3	Late-February	Beta Version <ul style="list-style-type: none"> <li>• 20 Self-care Activities</li> <li>• Activity History System</li> <li>• Mood Overview System</li> </ul>	-
4	Mid-March	Final Version <ul style="list-style-type: none"> <li>• 30 Self-care Activities</li> <li>• Finalized Visual and Sound Presentation</li> <li>• Finalized Story Scripts</li> </ul>	-
5	Early-April	Evaluation <ul style="list-style-type: none"> <li>• Survey Results from Users</li> <li>• Implementation of Improvements</li> </ul>	-
-	15 <sup>th</sup> – 19 <sup>th</sup> April 2024	Final Presentation	-
-	23 <sup>rd</sup> April 2024	FYP Phase 3 <ul style="list-style-type: none"> <li>• Finalized Tested Implementation</li> <li>• Final Report</li> </ul>	-
-	26 <sup>th</sup> April 2024	Project Exhibition	-

**Table 2:** A table illustrating the schedule, milestones, and progress of the project.

## 5 Conclusion

Mental health of children and adolescences is one of the major challenges to be solved in the world. The increasing number of people suffering from poor mental health condition is sounding an alarm for an accessible, affordable, and effective solution.

This report has proposed a mobile game application to tackle such issue. This application aims at helping youths to incorporate self-care into their daily routine through gamification. The application will be implemented through the process of product design, development, and evaluation. This solution will have some shortcomings however, including the dependency on the popularity of the application and the difficulty in evaluation of its effectiveness and project size management. Currently, the project is on track with the prototype currently being in development.

The promotion of the game to the public could be a potential future work upon the completion of this project to increase its impact. The data analysis from the application may also provide insights into the routine and mental state of youths, which could also allow other potential solutions to be developed. It is hoped that this project can contribute to solving the challenge with early intervention and prevention through the promotion of self-care, so that more people can live healthy in a society with a better future.



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