<EXERCISE DECOMPRESSION METHOD>

PROPOSAL REPORT

<Hi Distinction>

<Jiayu Li (Vicky)>
<Zihan Qi (Matt)>
<Yiu Chun Choy (Eugene)>
<Zhengyang Zhang (Edward)>
<Xue Xia (Snow)>

Semester 1, 2020

TABLE OF CONTENTS

TABLE OF CONTENTS

<EXERCISE DECOMPRESSION METHOD>

<Hi Distinction>

<Jiayu Li (Vicky) 43974836 >
<Zihan Qi (Matt) 45092136>
<Yiu Chun Choy (Eugene) 44126324>
<Zhengyang Zhang (Edward) 44270067>
<Xue Xia (Snow) 44687843>

Physical Computing & Interaction Design Studio proposal

<9th Apr 2020>

TEAM DOMAIN

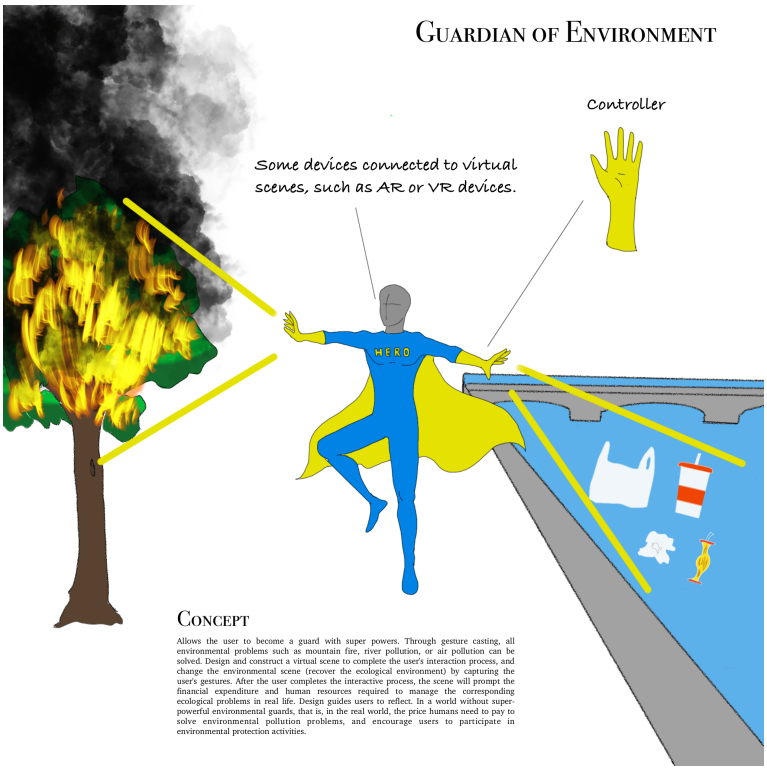
INTRODUCTION

The research topic of our group is the body as the controller. Our concept is aimed at relieving People's Daily stress.

ORIGINAL CONCEPT

Our team consists of two groups, the original 7-11 and the original Hi Distinction, now merged into a new group, the group name continues to use the Hi Distinction.

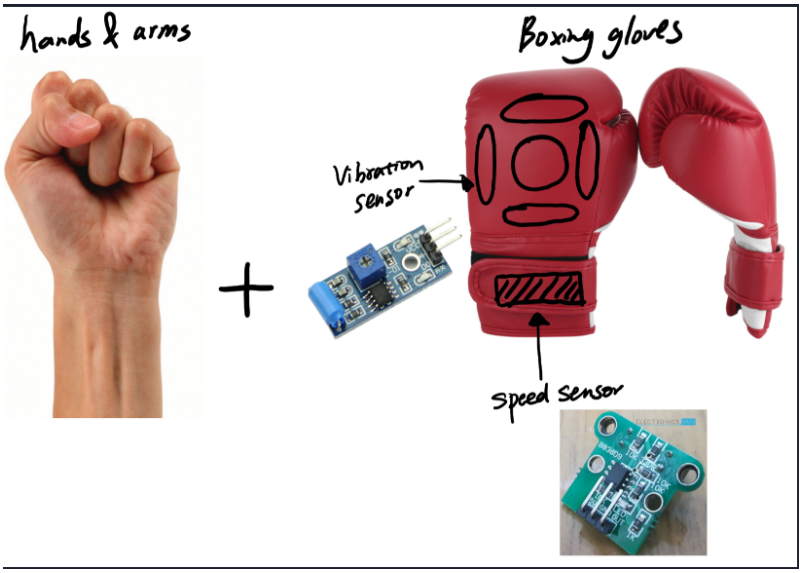
The original 7-11 team concept was based on the concepts of environmental protection and education. The function of the main focus on one glove, it allows the user to be a hero, through the function of the gloves to protect the environment, such as fire, remove rubbish and so on, then after in the operation of environmental protection, will have special knowledge to explain in detail for the user to the popular science of their actions, showing some of the detail of the data, such as quench a forest fire consumes much of the water resources, the forest fire will produce what kind of harm, and so on. It can be presented in various forms, such as virtual reality technology or augmented reality technology. But in the feedback I got, I learned that there had been similar concepts before, and that the concept was not very playable, there was no point in retaining users so that they could use it for a long time.



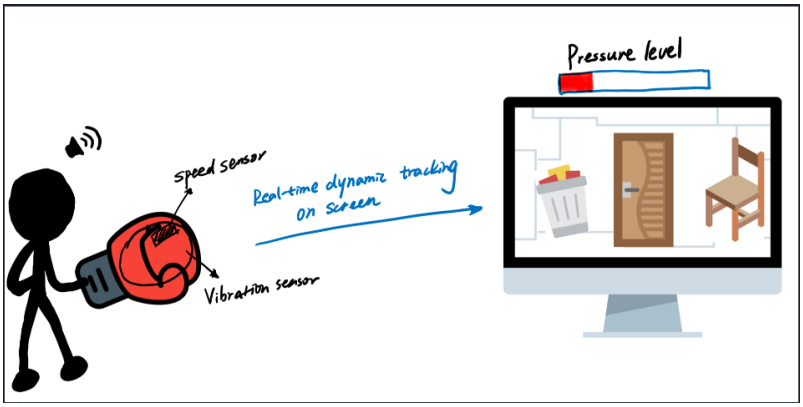
(Figure 1)

The original concept of Hi Distinction was based on a design that helped people relieve daily stress. The concept of the main body is a collection of the speed sensor of gloves, the user through the wave gloves, gloves on user perception

of punch speed, then go to hit the objects on the screen now, these objects may be bottles, table, chair, they will be collected according to the velocity sensor information given corresponding feedback, and gloves will be in the form of vibrations on the perception of feedback. It is also presented in a variety of forms, not only limited to the display of the screen, but also can be combined with virtual reality technology and augmented reality technology to achieve. The main purpose of the concept is to help users relieve stress through such a violent outlet. I have learned from the feedback that this kind of interaction is desirable and it is feasible to relieve People's Daily pressure in this way, but such a way of presenting is too violent, which may cause users to be slightly violent



(Figure 2)



(Figure 3)

PROBLEM SPACE

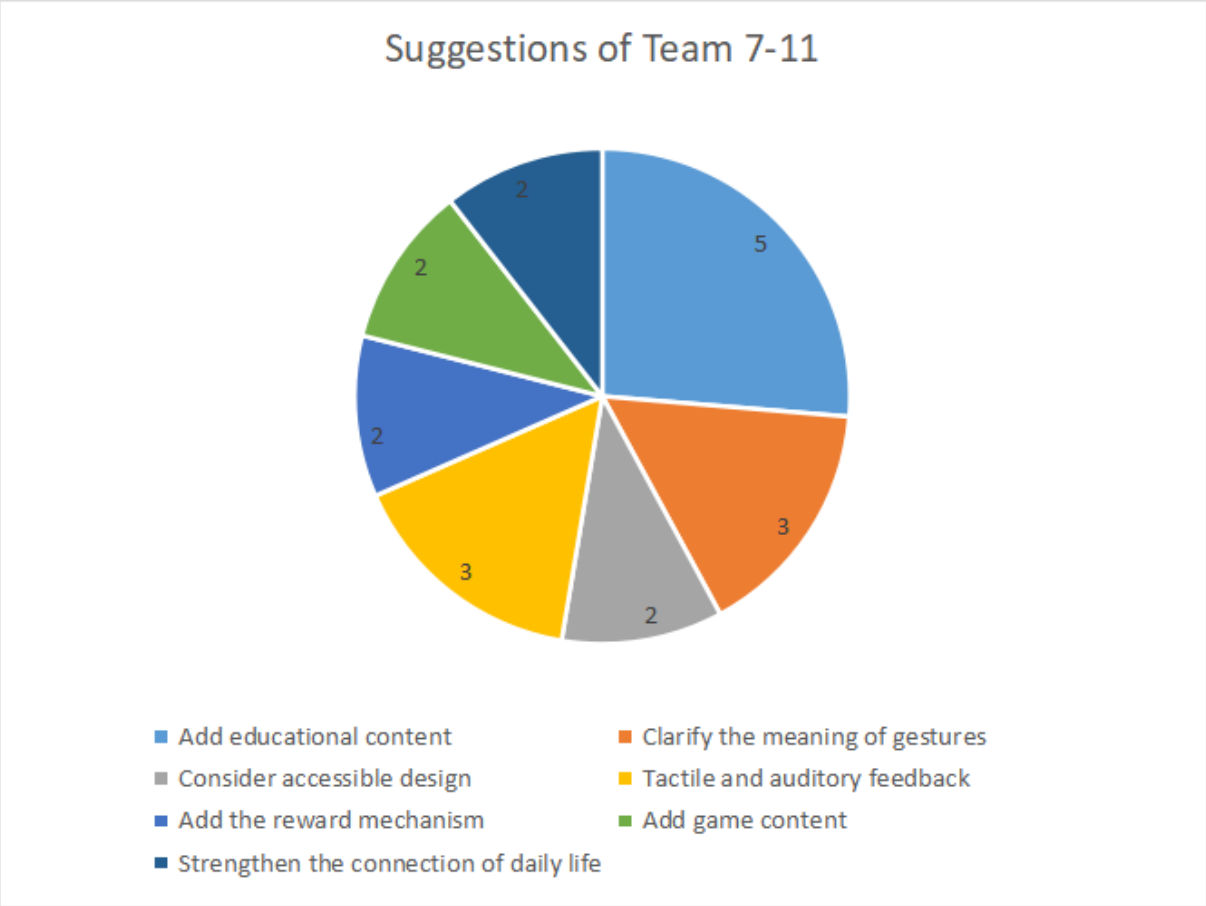
For a variety of reasons our two groups merged into a new group. After the reorganization we restudied our problem space. In the beginning we want to use two problem space at the same time, but after study finds that this will make our concept of deviating from the direction to find a key, then we respectively to study the two problems with space analysis, USES many methods to explore

what should choose a problem space, we first do a brainstorming, every problem domain to imagine what might design direction, then what have we done in two areas of related literature research, found that the use of environmental protection as our problem domain, it is difficult to guarantee our concept can be enough to attract users for long-term use, It is more oriented towards some common objects. The problem space of relieving stress is more likely to ensure a good description of all directions. Moreover, in our research, we found that stress is a common problem area in modern society, and everyone's stress should be relieved. So we identified our problem space as helping people relieve daily stress.

After determining the problem space, we began to make a detailed analysis of the problem space to relieve the pressure. First through the way of brain storming, we discuss a in the body as a controller under the premise of, we can through what way to relieve stress, the results of our discussion is the way to relieve stress through sports, because this way can convenient user, is limited by a little use of regional problems, and it is also the most traditional way of relaxation. Then we combined with the literature review we did to determine that our target user is the student group, so my design will focus on helping students relieve pressure.

RESPOND TO FEEDBACK

TEAM 7-11'S PART



(Figure 4)

By sorting out the feedback that Team 7-11 received on slack, we summarized all the feedback as follows

EDUCATIONAL CONTENT

From the form point of view, our design seems to be more to convey information to users. This form is indeed more suitable for playing a better role in educational content. Although the original intention of our design is to convey real-life information to users, use information to guide users to think about the real environment and enhance users' awareness of environmental protection. However, for some natural disasters, such as earthquakes and wildfires, what people can usually do is to use the correct method for self-help in disasters, or carry out some training on some behaviors and habits to prevent natural disasters. Among the comments we received, the most suggestions were about educational content, which made us think more about our design content. Since our use process is terminated only after guiding the user to think, our design does not involve what the user should do to participate in environmental protection or prevent natural disasters after completing the thinking. Therefore, in the subsequent design, we will try our best to be more

comprehensive. After the user completes the one-time use process, let the user think more and provide the user with more comprehensive knowledge.

Clarify the meaning of gestures

Among the suggestions received, three suggested that different users have differences in understanding different gestures. We very much agree with this view, which not only points out that our current understanding of gestures is limited, but also proposes differences in understanding between different individuals. For us, we hope that our design can be understood, accepted and continuously used by more people. Therefore, in our discussion, we decided to conduct a preference survey on as many target users as possible. At the same time, in order to finally determine a professional and easy-to-understand gesture, we will look for some research on people's general posture and psychological expectations Support our final choice of posture.

Accessible Design

For some special groups, there may be special needs when using it. For example, pictures that flash more frequently are not suitable for patients with epilepsy, and too sudden sounds and pictures may bring discomfort to patients with heart problems. Through our group discussion, we believe that our design should revolve around the design principle of taking people as the core. Therefore, we should consider these special needs, and we hope that our design can provide effective feedback for each group equally. Of course, for a user group that cannot use the device or has difficulty in understanding information, we cannot achieve perfect coverage, and we cannot design for everyone. But we will refer to more principles about barrier-free design to help more groups get corresponding feedback and information.

Tactile and auditory feedback

In our design, we really have not thought about more physical feedback. Of course, as the scene changes during the interaction, it can bring some visual experience to the user. But the tactile and auditory feedback proposed in the proposal was not taken into consideration in the initial design. At the same time, our research on similar VR or AR devices is not comprehensive enough. As mentioned in the recommendations, haptic feedback is something that most of these technologies have not yet implemented. From a personal point of view, we have hardly ever seen a virtual reality device about tactile feedback in reality. Most existing devices use vibration to provide feedback. Of course, we have to conduct more detailed investigations and studies on this.

Increase game content and reward mechanism

It is mentioned in the suggestion that we do not have a "reason for players to continue playing". In the initial discussion, we focused on this aspect. We believe that there are several factors required for the game to have the "reason to continue playing":

About game content

First of all, in our conclusion, one of the primary reasons that attracts players to continue playing games is that the game has enough content. For some players, after a game is successfully cleared, the following repetitive content will make these players lose their freshness. Especially for some role-playing games, after the player

plays to the end according to a single plot, the next game content will return to the original scene and plot. For example, in the Plants Vs Zombies (PVZ) released by Popcap in 2009, when players complete all level challenges and mini-games, a golden sunflower trophy will appear on the game interface, indicating that they have completed all the game content. At this time, the player will not Will be exposed to more content. Some players will choose to give up and continue to play this game. Indeed, PVZ is very interesting in terms of game content, but the limited content of stand-alone games will become a reason for players to abandon the game. Therefore, after discussion, we believe that enriching our game content is a reason for players to continue to play the game. In the comments, we also got suggestions to add more gestures and scenes, which shows that people have a certain degree of interest in our games and hope that we will enrich our content more.

(Figure 5)

ABOUT THE GAME MODE

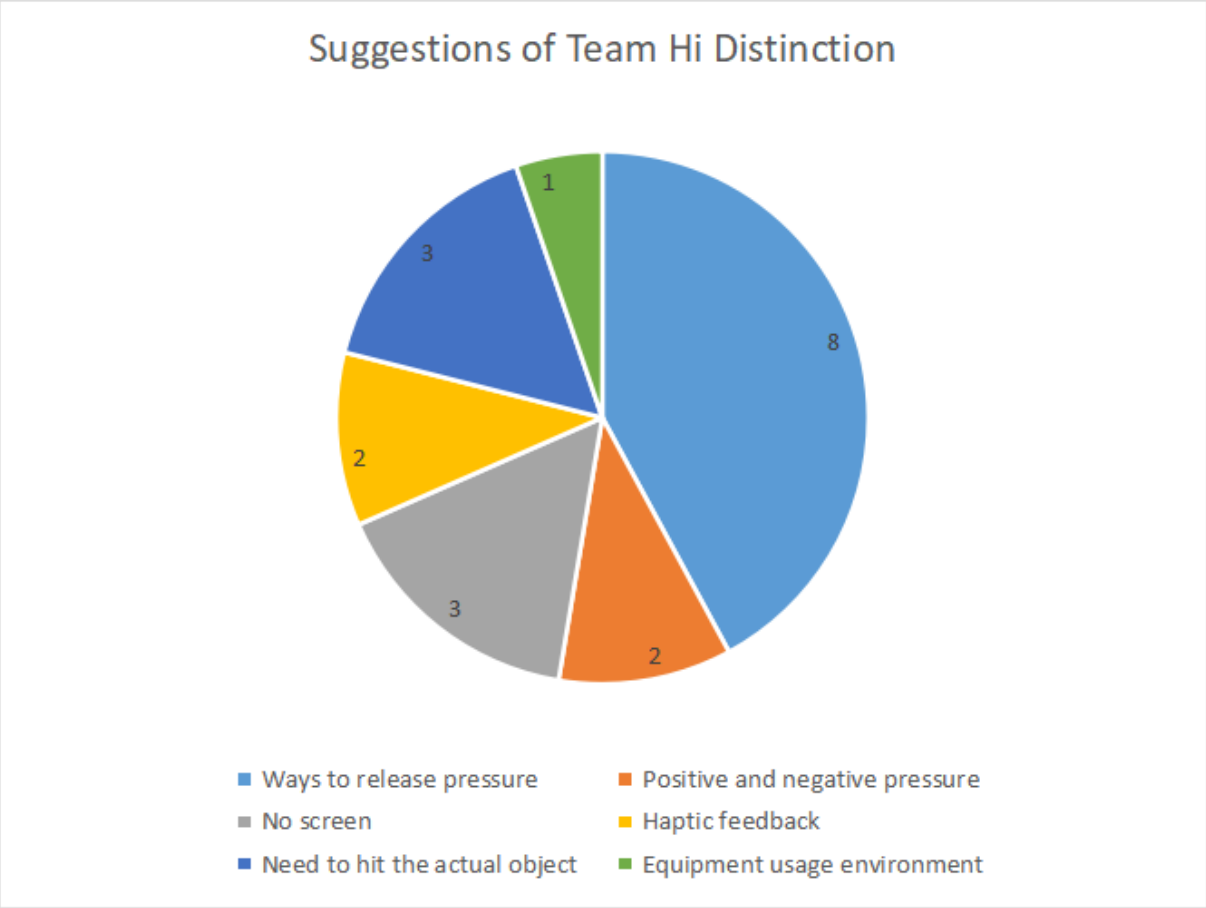
In addition to the rich game content, as mentioned in the recommendations, we can also consider adding some interesting game modes such as reward mechanisms to increase the appeal of the game to players. Also in PVZ, when players feel tired in the fixed mode of planting plants to defend the house, PVZ adds a completely opposite mode for players, playing zombies to attack the house, which undoubtedly increases the entertainment of the game. We can see that the changes to the mode under the same content increase the fun of the game. In fact, we can also add more modes in our game, such as adding some modes that can fight scores with friends, or introducing some reward mechanisms based on the scores, which may have a more positive impact on our game.

(Figure 6)

ABOUT PRACTICAL MEANING (ENHANCE THE CONNECTION OF DAILY LIFE)

There are 2 suggestions in the comments about strengthening the connection between games and real life. Through discussion and analysis, we believe that for our initial design, the purpose of the design is to increase people's awareness of environmental protection, which itself is very closely related to real life. But as I mentioned earlier, our design lacks advice and guidance for real life, and users may have environmental protection ideas after use but do not know how to do it. In the subsequent design, we may think about more ways to guide users to participate in environmental protection in reality, and add such content to our design. At the same time, if the game can be closely integrated with the user's real life and have more positive impact, we think this may have a positive effect in encouraging players to continue to play the game.

TEAM HI DISTINCTION'S PART



(Figure 7)

By sorting out the feedback received by Team Hi Distinction on slack, we have summarized all the feedback as follows.

HOW TO RELEASE PRESSURE

The vast majority of comments made this suggestion, so we focused on this aspect. Indeed, in our design, hitting items was selected for pressure relief. Based on our initial research, this may be suitable for some people. But in the comments we received, we also found more suggestions, such as touching virtual animals or meditation, which are some more peaceful ways to relieve stress. We discussed the current design principles in detail, and according to the suggestions received, there are indeed some violent factors in our plan, which may not be healthy for our target group. After discussion, we hope to find a healthy way to relieve stress. In the comments, we found suggestions for exercise to relieve stress. We quickly adopted this suggestion. First of all, sports are more suitable for our current ideas. Then, in the initial survey literature, we also found effective evidence that exercise can relieve stress. Therefore, we decided to change the direction to exercise to release pressure. In the next plan, we will conduct more investigations in terms of exercise to relieve stress.

POSITIVE AND NEGATIVE PRESSURE

This is a very worthwhile point of view. For different people, stress in life may bring positive or negative effects, which may be related to everyone's feelings about stress. In our design, our target group is the pressure group. Such a statement may not be comprehensive. Our design should be based on user needs. Therefore, the concept should be aimed at people who are stressed and uncomfortable with current stress and need to relieve stress. As mentioned in the comments, stress has positive effects, but in our concept, we should focus more on the negative effects of stress and help those who are facing the negative effects of stress to relieve stress.

NO SCREEN

In the initial design, we did not consider too many questions about interaction. We focused too much on hand interaction. After our discussion, we found that the screen does have a lot of defects in interaction. First of all, the area of the screen is fixed, no matter how big the screen size is, users can only be limited to interaction in a single direction. The second point is that regarding the interaction mode, the screen cannot give more types of interactions, and it is very single to feedback users from the perspective and sound. In our discussion, due to the lack of some theoretical support, we have no way to prove what kind of feedback is more suitable for the theme of stress relief in our sports. So we decided to find more inspiration in the same type of design or research.

HAPTIC FEEDBACK

Since our design is to hit a virtual entity to release pressure, we actually need to design more tactile feedback similar to the hand to improve the user experience. In the comments, we saw some very interesting comments. They suggested that we should distinguish the vibration mode and frequency according to the user's action strength, and give feedback to the user on different feelings. In the next plan, we must first look for some research on haptic design. We need to understand whether haptic feedback is really suitable for our final design. After determining our final concept, we will explore the possibility of increasing haptic feedback and try to make a haptic feedback system using existing materials.

NEED TO HIT THE ENTITY

For our initial design, hitting virtual items provides users with some simple vibration feedback. It is our alternative way of venting to avoid damage from real objects. In some current entertainment industries, there are incentives for people to destroy items under the premise of protection measures to achieve the purpose of catharsis. However, in the virtual environment, the weight and texture of items in real life cannot be completely restored. This kind of problem will affect the user's experience in the virtual environment. Therefore, even if we will change the theme in the next, we still have to consider the feedback from real life, improve the final effect in the design, and give users a better experience to achieve our design goals.

EQUIPMENT USAGE ENVIRONMENT

In the comments, it is mentioned what kind of environment should be shaped in use. As we all know, the use environment has a very important impact on the experience. The use of colors, light and background music in different restaurants can affect the dining experience of diners and control the dining time of diners. But in this regard, we have not done too much research. But we think that the choice of environment is equally

important. In the next design, we will look for more research to think about the design of the environment in our design.

RELATED WORK:

YOUTH INACTIVITY PROBLEM

Gray, A. and Smith, C., 2003. Fitness, dietary intake, and body mass index in urban Native American youth. Journal of the American Dietetic Association, 103(9), pp.1187-1191. https://www.sciencedirect.com/science/article/pii/S0002822303009799?via%3Dihub

Bock, B. C., Thind, H., Dunsiger, S. I., Serber, E. R., Ciccolo, J. T., Cobb, V., Palmer, K., Abernathy, S., & Marcus, B. H. (2015). Exercise videogames for physical activity and fitness: Design and rationale of the Wii Heart Fitness trial. Contemporary clinical trials, 42, 204–212. https://doi.org/10.1016/j.cct.2015.04.007

It is well known that obesity is very harmful to health. Being obese for a long time may cause many health diseases. It is mentioned in this survey that (American Dietetic Association, 2003) most young people in modern times are addicted to video games, and this entertainment is in a sitting state. If this problem is not solved as soon as possible, more and more teenagers will have health problems. This article has triggered our thinking. We will consider how to change the user's game mode and change the video game into a sport game, which can increase interest in sports while increasing the youth's exercise time. For this idea, another document demonstrates that (Contemp Clin Trials, 2015) sports interactive games can be a source of people's movement. It is an important and timely evaluation of EVG for physical activity adoption and cardiovascular outcomes among adults. This exercise mode will be more widely used in the future development. In addition, the article mentioned that most of these problems occur in the youth group, because they do not have the awareness to maintain health. This is very helpful for us to determine the target population, so we may target young people as target users

EFFECTS OF STRESS ON PEOPLE

Wang, J., Keown, L.-A., Patten, S., Williams, B., Currie, J., Beck, A., … El-Guebaly, R. (2009). A population-based study on ways of dealing with daily stress: comparisons among individuals with mental disorders, with long-term general medical conditions and healthy people. Social Psychiatry and Psychiatric Epidemiology, 44(8), 666–674. https://doi.org/10.1007/s00127-008-0482-2

This paper mainly describes the possible mental and physical effects of stress on people, and conducts in-depth research by means of group study, observation and analysis.

This paper mainly discusses the daily stress of people, and lists the commonly used ways that people can relieve daily stress by themselves. Moreover, there are detailed classifications in the literature, and the differences under each classification are obvious.

This paper is of great help to our following research. Firstly, we can have a general understanding of the sources of stress in People's Daily life, and get the data to support it. Because there is specific data in the literature on how people deal with stress on a daily basis, such as sleeping more, being alone, smoking, drinking, exercising, eating more, etc. This plays a crucial role in our choice of major stress relief methods.

In this paper, we discuss in detail the ways in which people of all ages expect stress to be reduced. In the article, it can be found that compared with older people, young people are more likely to relieve stress through physical means, rather than getting "mental help" like older people.

In this paper, it is also mentioned that young people account for a large proportion of people who effectively relieve stress through exercise, which means that we can narrow our target audience to young groups or students. This is very helpful in the selection of our target group.

Overall, the main purpose of this article is to help us analyze and understand the ways people deal with stress on a daily basis, as well as the ways in which certain people can better deal with stress.

THE INFLUENCE OF STRESS ON TEENAGERS

Yeatts, P., Martin, S. and Petrie, T., 2019. Physical fitness as a moderator of neuroticism and depression in adolescent boys and girls. https://doi.org/10.1155/2020/4696592

The aim of this study was to explore the associations between academic stress (AS) of adolescent boys and girls and their physical activity (PA) during recesses and after school and to propose measures to promote the adoption of lifelong healthy working habits. In the article of Mucci, N (2020) shows that stress and depression have adverse effects on the health of adolescents and others. However, proper exercise can have a positive effect on patients who exhibit symptoms of anxiety. This is very helpful to our project. Our work is designed for teenagers with excessive stress. The body operates sensors to achieve sports and other purposes. At the same time, exercise can relieve stress, the research demonstrated this. They also believe that adolescence and the time spent in school represent a “sensitive period” for the adoption of healthy work-related habits. This argument further demonstrates that we have chosen the right direction of the target users. Therefore, according to the above research, we will make a decompression exercise interactive program for the teenagers. Its two main functions will be decompression and fitness, thereby improving the health rate of young people. On the other hand, compared with the previous single exercise method, the interactive exercise method which we designed will be more attractive than average. Because the target users are young people, they will prefer interesting fitness methods, rather than just exercise for decompression. Therefore, we will be more inclined to increase the entertainment of physical interaction in future designs, and we will also focus on decompression.

THE METHOD TO RELIEVE STRESS

Dong, K., Jackson, Chris, DeLuna, Daniel, & Foster, Shaun. (2018). EazyTrack: Exploring Next-Gen Technology and User Experience Design to Help Relieve Stress. ProQuest Dissertations Publishing. Retrieved from http://search.proquest.com/docview/2164781599/

This document is a complete design document. This paper mainly describes that the author helps users to determine their stress level through data visualization and user interface design, and then alleviates the pressure of users through targeted scientific methods. In this paper, the author sets up an interactive prototype that can work with wearable devices. The author's goal is to find a simple and intuitive way to manage stress.

This text has the advantage that they do a lot of previous work, a lot of experience on background research, for example, the article will discuss the literature review, they discuss the related literature review, the existing stress management techniques, for example, relaxation and relief way, wearable equipment research, measure the research of user experience. The author's detailed research on the background issues provides a theoretical basis for our early work. Since our design is body as controller, there are many similarities that we can learn from this paper.

Been made in the design process of work stress questionnaire, they have been the conclusion mentioned people still hope that through the certain way to prevent and manage stress, and in their interview results also noted that most of the users of stress-reliever concentrated in exercise, listening to music, walking, meditation, reading, etc. This also helped us in our early work on the concept.

In general, the products mentioned and designed in this article are more inclined to the design of product UI and UX. They try to design from these two aspects to help people manage and control stress.

Our concept for the appearance of the requirements are not very prominent, but because of the detailed research and analysis of this article, we will also pay more attention to our concept of UI and UX design, through the two aspects and interactive combination, to help users control and manage the pressure to provide better help.

FIVE APPS FOR BEATING EXAM STRESS.

5 apps for beating exam stress. (2020). Retrieved 7 April 2020, from https://au.reachout.com/articles/5-apps-for-beating-exam-stress

This article has introduced five apps that can help students to reduce their pressure of exams. Some ways can be summarized from those apps to help students to reduce the pressure of exams. The ways are helping students to slow and maintain their breathing, giving activities to students to do in the morning to get the blood pumping, managing their study and their sleep, and using screen games to help the user to calm down respectively. Some ways are from the norm that deep breathing and doing sports can help people reduce stress. Managing student's study and their sleep is a way that manages a student's study plan to let them study more effectively to reduce their stress. The

screen game combines some elements that can help people reduce stress such as light music, bright and colorful scenes and increase people's concentration. Those ways of helping students to release the pressure can be considered to be used in our concepts, but the interact mode should be changed to physical interaction and the concept should be more novel.

THE STUDENTS' PERCEPTION OF PRESSURE

Bartholomay, E. M., & Sifers, S. K. (2016). Student perception of pressure in faculty-led research. Learning and Individual Differences, 50, 302–307. https://doi.org/10.1016/j.lindif.2016.08.025

This paper mainly discusses the students' perception of pressure, and discusses the pressure obtained by students in various aspects in great detail.

Because of our concepts about help users a way to relieve stress, we try to find a group most needs to get relief, just we are students, we are more familiar with the student with a group, can be faster and more efficient access to relevant data, on the other hand, in today's society the pressure of the students has always been the focus of attention, how to relieve the pressure on students, providing students with a safe environment in which to learn, is the social question which urgently to he solved. So we set our target users as students.

In this paper, the study on the pressure of students is very detailed, and even the division of age groups is carried out, which is very helpful for our subsequent research and exploration, as well as for us to narrow down the user group and increase the support of the theory.

In this paper, a detailed pressure on students of different cases are studied and analyzed, this to us for this group of students from different pressures can be a very good interpretation, but also allows us to be more targeted to this group of students from different pressures for targeted research.

UNIVERSITY STUDENT FACE STRESS MORE THAN NON-STUDENT

Peate, I. (2017). Easing student stress. British Journal Of Nursing, 26(7), 377-377. doi: 10.12968/bjon.2017.26.7.377

A peer reviewed article which has the same user group with us. Our target users are students, but this article focuses more on students who are in higher education. It states that university or college students face higher pressure than others. It provides information about why higher educational student's stress should be focused. The data of students suffer from stress, the impact of students with stress, the factors that cause their stress and the type of stress they will face are shown. Those data can be used in the introduction section of the target user.

USEFUL INTERVENTION TO REDUCE UNIVERSITY STUDENT'S STRESS

Regehr, C., Glancy, D., & Pitts, A. (2013). Interventions to reduce stress in university students: A review and meta-analysis. Journal Of Affective Disorders, 148(1),

1-11. doi: 10.1016/j.jad.2012.11.026

A peer reviewed article that is very relevant with our topic. The topic is to help students to release their stress. This article includes general information like why choose to do a survey of university students, list of various interventions to reduce stress, the evaluation method and the result of the effect of those interventions. The result shows that cognitive, behavioral and mindfulness interventions can reduce the stress of college students effectively. That information can inspire us to develop the concept. The methods, literature review and meta-analysis, that are used in this article can be used in our project as well.

EXERCISE VIDEO GAMES HELPS IMPROVE PEOPLE'S PHYSICAL FITNESS

Huang, H., Wong, M., Lu, J., Huang, W. and Teng, C., 2019. Can using exergames improve physical fitness? A 12-week randomized controlled trial.

The main content of this document is a 12-week comparative experiment on whether Exercise Video Games can help young people improve their health. The experiment invited 117 college students to be divided into two groups, using EVG as a variable 30 times a week for comparison. The experimental results show that EVG can effectively help college students improve their physical fitness. The main significance of this report is to help us understand a new way of exercise, and through experiments proved that EVG can replace exercise to improve people's physical fitness. The limitation of the literature is that it does not demonstrate the role of EVG in solving stress, and the number of people participating in the experiment is small, which may not be universal. For our project, we have found some alternative sports that seem to be more interesting ways to improve people's physical fitness.

AUDIENCE & INTENDED EXPERIENCE

Our domain is helping university students to release their stress. Our target user group is university students. University students always are assumed that they are happy and are experiencing one of the best periods of their life due to the reason that the social network and the skills, which can improve their competitiveness in the market including professional skills and social skills, are developed in this period(Peate, 2017). Thus, they should have good conditions for their mental health. However, some data shows that university students have high pressure. A survey at the University of Alberta in 2011 shows that more than 50% of the 1600 students have felt hopeless and overwhelmingly anxious in the past year (Regehr, Glancy & Pitts, 2013). Another survey from the National Union of Students in 2015 showed that 78% of 1093 students in further and higher education had suffered from mental health issues, 33% of them had experienced suicidal thoughts (Peate, 2017). Therefore, we believe that it is necessary to help university student's to release their stress.

University students may face stress from several areas, such as academic areas, financial areas, and social areas. In the academic area, university students may face challenging assignments and exams and may need to use different study methods especially for international students. In the financial area, university students may need to pay part of tuition fee or living fee by themselves as an adult rather than pay by their family as a minor. In the social area, they may move away from home to live alone and may face a more complicated social environment. Thus, we want to design things for providing experiences of personalized planned study and life that include sport and relax, playful and open-ended activities, or a relaxed environment with an interesting game inside for helping students who need to catch the deadlines of the assignments or fear of failing the exam, lack time to do physical activities, suffer from financial burden, or feel the stress of new social environment to release stress. The things we will design will require users to interact with physical things with a screen by using their bodies to control. To attract the user to use our product, it should be playful, open-ended and have good accessibility. It shouldn't waste the user's time to study, but should let the user relax their mind with do exercise in an interesting way in a short time and can be used anytime and anywhere.

RELEVANCE TO THE THEME (BODY AS CONTROLLER)

IMPLEMENTATION PLAN

Though we will have different end products/works generated as an individual for the course despite being in a team, since we have planned to focus on the same domain/theme, targeting the same user group(university students), the formula of our implementation will definitely somewhat share a variety of similarities with various tweaks of different implementations aiming for different approaches of physical activity to satisfy our common goal.

Since our one target user group shared among all team members is university students, one of our intended experiences is to allow students to workout and have fun at the same time in the comfort of their own home.

Considering university students generally spend more time studying and working from home compared to students of other kinds, the form of our design will be a “thing” that is customised to personal preference. In general, all designs will follow the formula of letting uni students relieve stress via fun and playful workout as the physical interaction aspect of the project.

PLAYFULNESS AND OPEN-ENDEDNESS ELEMENTS

Other than aiming to suit the theme and requirement of the course, having playful and fun elements in our design should definitely be a plus when we consider exercising at home. A lot of people, including students, refuse to go to the gym or go out to get some exercises, mainly because of the lack of time from their hectic schedules or the thought of working out being boring, especially when done alone.

Hence we are looking at various possible fun and interactive elements which we could put in our design as different approaches to offer other different user experiences apart from the main ones mentioned in the “Intended experience” section of the proposal.

As a team, we thought of quite a number of elements that could be implemented into our future creations, and we drew them in our mind map in one of our weekly meetings

Here are some of the possible elements that we considered to include in our design :

- Social
- Musical
- Undisturbed/Personal
- Exciting/Relaxing

How does it relate to people's (uni students) everyday life

Stress relief is an essential part of life as an university student, since they are a group of (usually young adult) people having to deal with stress coming from assignment deadlines, parent's expectation, school fee (even more so for international students.

Without proper ways to relieve their pressure from the aforementioned various sources, it could easily lead to not only issues that affect physical fitness and appearance, but also the mental state of one self and in fact the two of them go hand in hand with one has the potential to lead to another. (Folkins, C. H., & Sime, W. E., 1981)

Back to the topic, as stated stress relief as a subject itself is closely linked to day to day life, even more so for students because of their busy schedule (some even have other classes to attend on weekends). Having the ability to exercise without the need to go out anytime whilst having fun in the process could benefit not only physically but also mentally.

Domain & Focus of our team

Apart from having "playful and open-ended design" as our grand studio theme as well as "Body as controller" as the zone theme, our team has decided the theme to be "Stress relief through physical activities".

By physical activity, it does not necessarily translate to workout and exercise, it could be of minimum to none physical fitness value at all to the body, as long as it satisfies our main intended experience and goal of the design which is "Stress relief", of course it also needs to suit the studio and zone theme mentioned above, which are fun and includes the use of limbs or body from users as the means of physical interaction.

In a nutshell, the one sentence to conclude our concept should be "a design that allows university students to relieve their stress via different physical activities that can be done in the comfort of their own home"

There are 6 main elements of focus that each of our team member needs to pay attention to when developing our individual creation, as said in the "Implementation Plan" section, although our approaches of solution space(different kinds of physical activities) will be different, the 6 elements below are the similarities and keywords that are shared across all of our designs in the end.

1. Playfulness/Open-endedness

First foremost, as the studio theme requires and suggests, our design needs to be fun to interact with and allow for the chances of different possibilities to happen, hence why our team selected the problem domain to be "Stress relief" as it correlates with the fun aspect of the project.

2. PHYSICAL ACTIVITIES

   They do not need to be workout/exercise, but all of our design will include at least one sort or more of physical activities (bodily movement) from the users as the input.

3. STRESS RELIEF

   Stress relief is our most important research field and UX goal for our target audience.

4. BODY AS PHYSICAL INTERACTION

   Without a controller of any sort, our designs receive input directly from the user's body movements as the input.

5. UNIVERSITY STUDENTS (OUR TARGET AUDIENCE)

6. HOME

   Users are able to use/interact with the design at home or any indoor area without having the need to perform the designated activities outdoors.

MATT'S INDIVIDUAL PART

INTRODUCTION

I'm Matt, I am a master of interaction design. This is my last semester. In the past three semesters of study, I have been exposed to a lot of interaction design knowledge. In comparison, I am better at the design and evaluation parts of the design process. I am keen to generate a lot of design ideas through understanding and learning design needs. I am also very keen to communicate these design ideas with different people. I hope to get new thinking directions and new inspirations in communicating with different people. I will gain more sense of accomplishment when generating a large number of projects. For the generated solutions, I am also keen to evaluate them. In the design process, I will use concept map and other methods to screen my ideas, and finally produce a solution suitable for our team. At the same time, in the testing and evaluation part, I also have more opportunities to communicate with the target group. With reference to different usage logic and usage angles, and at the same time observing the user's tiny habits, I think this is very interesting, and at the same time it can also greatly improve our prototype.

As an undergraduate in industrial design, I have a very strong foundation for making virtual models and master several software such as Rhino, Solidworks, Keyshot, etc. Therefore, I am very confident in making virtual displays. At the same time, I still have a certain degree of hands-on ability, a certain degree of wood cutting, wood and metal grinding and metal welding experience, although we are facing a special period, these manual skills may not be useful, but I believe this is for my prototype A certain degree of help. At the same time, we studied a lot of graphic software such as PS, AI, CorelDRAW and other software during the undergraduate period, and received aesthetic education and trained hand-painting skills throughout the undergraduate period. Therefore, I am also very good at graphic design and production.

My shortcoming is that I am not good at programming languages. I passed the courses of Web Design and Digital prototyping, but programming is still very unskilled for me. For some simple prototypes, I can complete it independently, but for some more complicated For the prototype, I need a member of the team who is very good at programming to help me complete the prototype. At the same time, I am not good at planning time. I often judge the time that I need to complete some tasks, and then finish it before the deadline. This is an unhealthy habit for the team 's work. Based on immature judgment, this May affect the quality of my deliverables. Therefore, I need a role in the team that can strictly control the time.

My goal in the course is to produce my most satisfying design in the last semester by maximizing my skills.

MY FOCUS

My main concern in the team is the design with "people" as the core. I will investigate more about the relationship between exercise and stress relief, and what positive effects exercise can bring to users. I will be more concerned about the actual needs of users, and what kind of interaction can bring users the best experience. I am a person who does not like the boring process, so in my design, I hope to add the "fun, fun" factor to the user experience, which is why I am passionate about designing games. Since our final direction is to help users relieve negative stress by encouraging users to exercise, my main direction should be to combine the three

aspects of "exercise guidance", "playability" and "stress relief". I want to know more about the current situation of people's stress, the effects of games and sports, and the possibility of combining the two. I will explore more about "playability" on the basis of the team's stress relief from sports.

I will provide team members with more thoughts and references on user perspectives, research on stress relief methods, and reports on the user experience of some games and similar devices. At the same time, I will also refer to some existing Technology and sports, thinking about their design potential in terms of "playability".

RESPOND TO FEEDBACK

In our previous group, our main design direction was to increase people's awareness of environmental protection through a game. While ensuring entertainment, it brings more thinking about environmental protection to users. By summarizing and analyzing all the comments about our pitch, I found that our group's definition of environmental issues is not very clear. Natural disasters and garbage pollution are two completely different situations from a human perspective. For natural disasters, people set up more preventive measures to reduce the loss of disasters. But for garbage pollution, people can directly control and prevent behaviors at the same time. In the face of two situations, people's ability to intervene is different. At the same time, because we have investigated more about the content of the environment, so in terms of our game content, we have done very limited. Next, we reorganized the group. In the face of completely different topics (stress relief and environmental issues), I found it difficult to directly merge the two topics. The research available in public areas in these two areas is very limited. For me, relieving stress is closer to my design principle of "people" as the core. This theme is more concerned about the user's own problems. After the negotiation, our new team determined the theme to relieve user stress through exercise.

DISCOVERY

In the research process, in order to determine our user group, we first discussed the needs of users based on the theme. First of all, users must have negative pressure, which may come from various aspects of life. Secondly, we need users to have a certain degree of exercise ability to ensure the integrity of the use process. Depending on the type of sport, users may span a very large number of ages. Then I thought about my own direction. I need to add more gameplay on the basis of the team. Then my users need to have some interest in the game, or the main consumer of the game industry. Therefore, I prefer younger groups to investigate. In my survey, I found a survey about the health status of Native American teenagers. The survey pointed out that these teenagers spent more time on games and TV in their free time due to lack of exercise. The main directions are the same. At the same time, the student community can meet our two basic requirements, namely the existence of negative pressure (learning pressure) and the ability to exercise. This survey encouraged me to think about sports games, so I carried out more on this topic survey. The results of the survey show that Exercise Video Games (EVG) can be a source of people's sports. A comparative test also shows the active role of Exercise Video Games in health. At the same time, in order to contact our subject, I have carried out some sports to relieve stress The results of the survey show that people with a higher level of exercise have a lower probability of suffering from mental illness. This is also the role of side-supported sports in relieving stress.

In the initial survey, I only proved that young groups or students may become our target group, but we still need to prove that young groups or student groups do indeed have general negative pressures, so I also need to detail the pressures of student groups Research. At the same time, I will also consider more potential user groups, study the similarities between these groups and student groups, and adopt more demand information to improve my target user analysis. At the same time, I haven't determined the specific concept, so I will conduct some investigations on the design in the same field to understand how these designs solve such problems. I believe that these surveys will help to a certain extent in the design of my final concept. Finally, I also hope to find more theoretical basis for stress relief from exercise. Therefore, I will read the literature for public reference within the group to supplement the theoretical basis of my design.

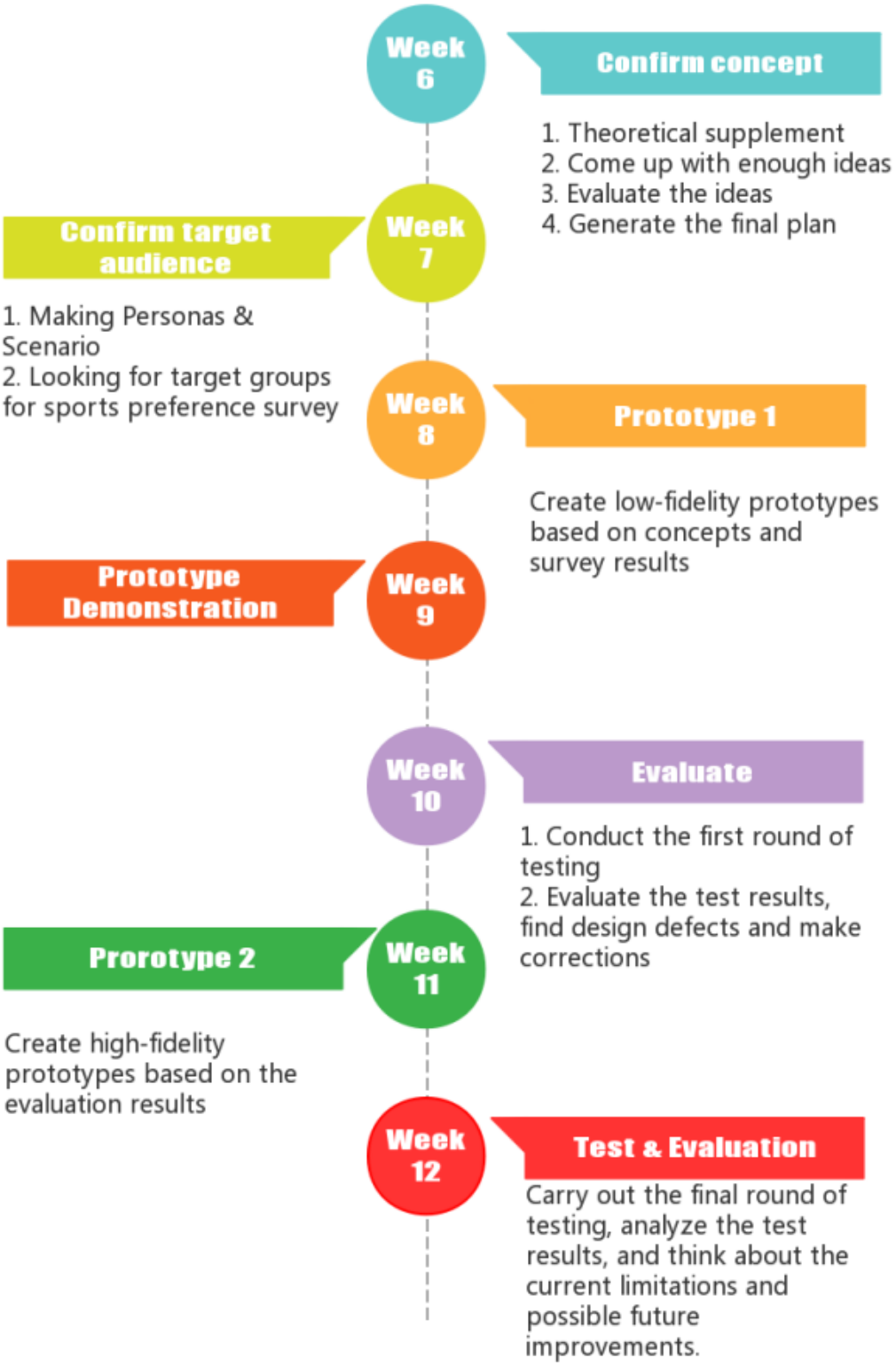
PROJECT CONSTRAINTS

As I mentioned earlier, I want to combine "playability" with exercise to relieve stress. Therefore, my expected goal is to reduce the dullness of the exercise through the game, and at the same time relieve the user's pressure through more "fun" exercise. Therefore, I should first make my game more interesting, which can not only help users participate in sports more actively, but also attract users to persevere in sports for a long time, not only to gain fun in the game, but also reduce stress during sports and maintain health. Therefore, I need to understand the content of similar sports games and determine the center of interest in sports games. Then I need to understand what kind of exercise can relieve stress. Because everyone has a different understanding of how to relieve stress, therefore, more types of sports may be provided at the same time in the design. For example, muscle training is more suitable for violent exercise to relieve Stress groups, yoga may be more suitable for quiet stress relief groups, so I may need to conduct some preference surveys. I also need to give these sports a real scientific stress relief effect, which may require more investigations about sports. Finally, because the user group may be students, there are some restrictions of different ages, so my game content needs to be suitable for young people of different age ratings, which needs to refer to more design principles of age content.

A PLAN FOR COMPLETION OF THE PROJECT

In the next stage of this semester, I will complete my final project according to the following plan.

<Exercise Decompression Method>



(Figure 8)

EUGENE'S INDIVIDUAL PART

INTRODUCTION

Multimedia Design major, a program that covers IT, software engineering and interaction design, courses provide an extensive experience of working as a part of a team to deliver or create various kinds of digital(mostly) products (usually web applications and computer games / softwares).

Courses also taught design iteration, user testing analysis, graphic design as well as theories of UX design.

Weaknesses wise, physical computing is one of them, having only one course (DECO2300) in the entire course list as the introductory course of physical computing, multimedia design students lack the hands on experience on the robotic side of development compared to that of software/website development.

In this course not only do I aim to dive deeper into the field of physical computing, but also the opportunity to create an original, unique concept/idea that nobody has created before, and learn about the steps and mindsets of doing so, by cooperating with others as a team to solve a particular challenge.

Project delivery will mostly if not all be via online especially with the pandemic situation going on lately, description and how things are implemented will be posted as blog posts on a regular basis to record everything from planning to final touches relevant to the project. Demonstration of creation will be of video form which will show the raw footage of it in action as well.

As a team considering we share the same problem space and use the same default starting tool (Arduino), I am certain that other than assignments that are of team-based nature, there will still be plenty of opportunities to work and help each other out as a team throughout the entire semester. By utilising the tools available, most if not more assistance that we would have in face-to-face setting can be provided via the internet, my team members specialise in Interaction design as master students, and because of that I am fortunate to be in such team because interaction design principles are something that I do not consider myself familiar with.

FOCUS

The aspect that distinguishes each of us individually throughout the project is the different approaches of solving the same problem. As a team we share the same problem space, specific target audience as well as the general way of approaching the solution(physical activity/bodily movement for stress relief for university students).

Personally, my focus will be addressing not only the problem of stress relief which serves as the general purpose within the team, but also the concern of the socialising aspect of university students as a whole.

Socialisation

Considering university students do spend less time with peers compared to that of students of other kinds (e.g highschool students), and more prone to experience loneliness, around 60.2% (Ugur Özdemir & Tarik Tuncay, 2008), socialising with others is a concern given there are a percentage of students do their programs remotely in universities.

How does my focus benefit the team domain?

The relationship between physical activities and stress relief is actually proven by academic research, where the study focused on the well being of international students' difficulties of adjusting to an unfamiliar lifestyle in a strange country, through recreational services offered, it was proven to be an effective means for stress relief. (Laura Graham, 2012)

Response to feedback

During week 4, where we gave our team pitch, our concept as a team focused on the environmental issues as the problem domain, the part where we wanted to solve through our future technology creation was to help people know more about the cost of fixing environmental problems through an interactive game, in which players would play the game using different hand gestures.

Our concept changed after we merged with another team due to half of our original team dropping out of the course, still there are 2 main aspects from the feedback we received after the pitch session, which made us change our decision of the project direction entirely.

Firstly, our old concept was not able to relate to people's day-to-day life, instead it was an informative, one-time gameplay experience, which did not suit the studio theme of the course (design playful and open-ended interactions in everyday life) properly, especially the "everyday" part.

Secondly, the way users would interact was not original and unique, and it was the fault of not conducting thorough research about the latest technologies in the beginning.

Therefore there was a need to change the interaction and intended experience of our concept and thus this was how we changed our team domain altogether after an inspiring discussion we had with the other half of our new team.

Discovery

By having a think about the key questions regarding the future stages of the project development, there are 2 aspects broken down where one of them puts the focus of concern on the concept itself, the other one on the challenges of implementation that we as a team or I as an individual might face.

Concept Wise:

- In comparison to the traditional ways of stress relief that our target audience (or even people in general)has been employing, where would our concept/design stand? What will be the uniqueness that distinguishes it from the others?

- People or uni students have different habits/preferences regarding stress relief, how to try to satisfy as many individuals as possible as a single design/product?

Implementation Wise:

- Will the tools we use/know of be capable of achieving what we look for in our concept?

- How will we be able to conduct user testing and design iteration in this semester where social distancing is encouraged?

Project Constraints

This part will discuss the limitation of development throughout this semester, having all the concerns at the moment broken down into 4 parts, with a possible solution after that as a backup plan.

Technical Constraints

As said in the “Introduction” section technical capability of making the project work shall be my first concern due to the lack of experience in physical computing, though, it should not be too big of a major concern since I understand DECO3850 cares about the progress of developing an idea to a working prototype rather than the technical difficulty when we make our prototype.

Besides, since fortunately physical computing is not an unpopular topic, there are plenty of resources that we are able to access through the internet and we also will get an Arduino tutorial in class as a refresher.

User Testing Unavailability

One of the challenges we face is that we will not be able to get potential users to conduct user testing as easily as it was supposed to be, yet user evaluation is one of the crucial stages in design iteration throughout the project.

Since user testing evaluation is imperative, as a team we considered the possibility of getting help from people we know in university who are willing to help conduct the analysis and testing in the later stages of the project where hopefully the pandemic situation will be relieved.

On the other hand, we are also in luck at this since our target audience are university students, which ourselves are, we could exchange our individual designs and provide useful in-depth feedback for each other in the team, or even students from the other teams.

Workshop Unavailability

Not having access to the university workshop would literally mean that we will have to make the project as homemade-friendly as possible, since what we will need is a working prototype that demonstrates functions that we intend to put into our design, we could, if we have no other choice, cut the fancy part (materials, good looking shape) and put the focus on the functionality.

Also, by planning ahead what our end-product would look and work, we could minimise the number of experiments and trials to as minimum as possible, which not only will increase the efficiency of the developing process, but will also decrease the cost of making our project come into life.

Unavailability of face-to-face communication

Whether it is communication within the team or that with the teaching team, it certainly makes it harder to ask about and resolve confusion that we encounter throughout the semester.

Nonetheless, the setting of studying from home would also mean we are going to have more time to dedicate to our project. To resolve confusion or problems that we would encounter, ideally we will want to be prepared before we make the move and enquire the tutors with our questions so as to make the process effective and get the feedback we need as clearly and as quickly as possible.

Plan of Completion

This part will discuss the limitation of development throughout this semester, having all the concerns at the moment broken down into 4 parts, with a possible solution after that as a backup plan.

Milestone 1 : Draft of the initial design (week 7)

Since we have had the concept and designed functionalities planned in the first 5 or 6 weeks of the course. I do not plan to be doing any of the repeated work and design shown in this proposal.

From this milestone, problems need to be dealt with with the consideration of the practicality and tangibility of idea implementation.

The draft will plan ahead of the project as a blueprint and be followed afterward. Which includes details such as, shape of the product, materials, components needed for the intended experience and functionalities, etc… With an estimation for the expected cost of making it.

Milestone 2 : Implementation (week 8)

The technical-focused part of the project, here functionalities will be implemented via coding and physical computing (Arduino at the moment).

This part will also be mostly likely the “time-consuming” and “hard” part of the entire project, yet, the difficulty of implementation relies on whether or not research and planning is sufficient and thorough during the time spent on milestone 1, which will also need to be assessed for the tangibility of making it come into life before moving into milestone 2. In a nutshell this part includes the work of coding, materials gathering/buying, experimenting as well as parts assembling.

MILESTONE 3 : USER TESTING (WEEK 10 - 13)

Up until milestone 3 there should already be sufficient content and functions to be tested out on potential users of the product, and here is where the loop of user testing iteration begins.
What I need/want to test is something that has yet to be decided in the early stage of the development, however the picture will become clearer soon after the base of the design is finished with functions for intended UX. Form of user testing will vary however, it also will depend on the mobility of the design that I manage to make (whether it could be taken outdoors or not).

MILESTONE 4 : CORRECTIONS/CHANGES AFTER USER TESTING (WEEK 10 - 13)

According to the feedback I will receive from my design, there will be changes that need to be made/adjusted to perfect the design until the end of the semester. This milestone definitely will then loop back to milestone 3 for user testing iteration.

VICKY'S INDIVIDUAL PART

INTRODUCTION

My name is Vicky, I am an undergraduate student of User Experience design. This is my third year in UQ. In the past two years, I have learned a lot of basic UX courses of UX, and have mastered the knowledge of interaction design. I am familiar with the process of the initial product design to the final delivery. In the team work, I prefer the design part, I can find a lot of inspiration in life and the Internet. I like to share my design proposal with the team members. Every discussion will get a more perfect idea, and every test and experiment has greatly improved my design skills. After the prototype of the preliminary design is completed, I can use the methods I have learned to conduct surveys and evaluations, finally to improve the prototype by testing different users and theoretical knowledge. In the course of physical computing, I learned Unity. I think I can provide a lot of help for scene creation. In addition, I am proficient in PS, AI, XD, ID, which I can use in further design and poster production.

However, my programming skill is not very proficient, I may encounter some small problems in the subsequent prototype practice. Although I studied web design and simple python language in the first semester, I am still not very proficient in programming languages. This semester I took the course of Java language, which may be helping me a lot. On the other hand, our project will use the physical delivery method, so we will use the Arduino software. I need to learn how to use an Arduino this semester. I hope I can be familiar with the software by learning in this semester, and that will be very helpful for the team to implement the prototype later.

FOCUS

In the team space, my focus is on ways to relieve pressure. The project designed by our team is to extract pressure through sports. There are many ways to decompress, such as listen to the music or focus on the interesting things. But our target audience is students, so I need to find some ways to decompress for students. On the other hand, sports are also something we need to mention. What kind of exercise can relieve the pressure of users more quickly, and to what extent the exercise should be reached can relieve the pressure to the greatest extent. What happens if users overdo it. I hope that through my exploration, I can find the most suitable way for students to decompress. I think it is very important for our team's project to find a suitable way to relieve the pressure. I will provide the team with my research and thinking, as well as the user experience report. At the same time, the practicality of the technology also needs to be considered.

RESPONSE TO FEEDBACK

Our group's original design was to blow off steam by hitting virtual objects. The team's previous focus was on how to maximize stress release without considering the practicality and long-term development of this approach. It has been questioned that the long-term use of this method to relieve stress may lead to violent tendencies. So we changed the direction of our design, we eliminated the motion of hitting objects. We will change to other sports to relieve the pressure,

but we have not designed the specific ways of exercise, we may add some music and soothing ways to replace the method of violent decompression.

DISCOVERY

In the research process of group discussion, we determined that our target users were students, because according to the report of Ross, S (1999), the pressure of students was that of the over-stressed people, so we needed to find the decompression method for students. Through previous surveys, it is found that students' pressure comes from their study and life, and they are unhealthy and stressed due to prolonged inactivity. However, students also have different lifestyles, such as those who like sports, those who like playing games...So we need more user surveys to further determine how to unpack. In Yeatts, P's article mentioned that exercise can relieve stress, and the report pointed out that "rest alone cannot replace exercise to relieve stress". Therefore, it is concluded that sports decompression is a more suitable way for students to apply pressure. However, we still haven't determined what kind of exercise to relieve the pressure, so I did some research in similar fields and found that most students like video games, because they are interesting and attract many students. This is also a way to relieve pressure, so I will focus on combining this kind of exercise with games in the follow-up survey, so as to attract more target users. I believe that these investigations will help the team to complete the final work to some extent.

Ross, S. E., Niebling, B. C., & Heckert, T. M. (1999). Sources of stress among college students. Social psychology, 61(5), 841-846.

PROJECT CONSTRAINTS

As mentioned in the previous work, my expected goal is to find a suitable way of exercise to relieve stress. For the target group of students, everyone has different preferences, they are interested in different things and hobbies. In order not to make users feel boring when exercising, I need to make users interested in the project and won't feel boring, finally from exercise to keep healthy. In this respect, I need to do a lot of user surveys to rank the favorite exercise method of users. At the same time, I will investigate some professional sports knowledge, because I need to know which sports can relieve the pressure. After the preliminary design is completed, I need to conduct the final user survey. The project will continue to improve according to the results of each survey to ensure that my design is appropriate and achieve a scientific decompression effect.

PLAN OF COMPLETION

Week	Main Work	Detail
Week 6	Get the idea of preliminary prototype	❖ Need more research for interact ❖ Get a idea of prototype ❖ Evaluate the idea
Week 7	Determine the preliminary prototype	❖ Make a survey of prefer exercise method ❖ Evaluate the survey ❖ Design preliminary prototype
Week 8	Prototype 1	❖ Make a survey for preliminary prototype ❖ Improve the prototype
Week 9	Prototype Demonstration	❖ Record the suggestions
Week 10	Feedback of prototype 1	❖ Summarize and analyze the results of the first test
Week 11	Prototype 2	❖ Improve the prototype(High-fidelity) ❖ Record the feedback
Week 12	Final test	❖ Evaluate the feedback ❖ Improve the prototype

（Table A)

EDWARD' S INDIVIDUAL PART

INTRODUCTION

I am a graduate student with an open mind and the ability to understand and accept new things. I have a good learning attitude, confidence and self-discipline. I have good language communication skills and a certain foundation of writing, with a good affinity, understanding, strong coordination, learning ability and adaptability. My main field of study and research during my postgraduate period is interaction design. In the learning stage, I mastered various design methods and design ideas, which enabled me to participate in product development and design, and gained good practical experience in user survey, data analysis, prototype design and design evaluation.

I have the experience of internship in an Internet company, and I know how to coordinate and cooperate with colleagues to complete the research and development of the project and the whole design process within a company, and how to contact with customers, get their opinions for modification and improvement, and how to complete the delivery of the project and the launch of the project. These series of experiences not only enable me to strictly follow the design process in the team, but also enable me to ensure that each step can be completed with both quality and quantity, and allow me to make a judgment on the work of each team member and apply the most reasonable and high-quality scheme to the project.

I am good at using professional design software such as Adobe XD, Adobe Illustrator, Adobe Audition, Adobe Premiere, Adobe Indesign, Sketch, Unity and so on, which enables me to help the team and the project to complete the relevant graphic design, prototype design and audio and video recording to a great extent. At the same time, I am also good at user survey, data analysis, prototype design, design evaluation, user experience design and other related design process operations, which enables me to help the whole team and the conception of the design ideas in the early stage of the project as well as the implementation of the project.

FOCUS

I was more focused on how to improve the user experience in the whole team. The research direction of our group is to discuss ways to make stress relief available to our specific target audience of students through exercise. First of all, as a relatively fragile group that needs the most care, the pressure on the students needs to be understood and paid attention to. Therefore, how to relieve the pressure on the students in a reasonable and efficient way has become my most concerned direction. In my design philosophy, the user experience is always higher than the product itself, so what I explore and study is how to make the product serve the user, so that the user can get experience higher than the product value itself when using the product. So I will pay more attention to improve the user experience of exercise and to exercise more interesting, makes users can immerse in the process of exercise, so I would be a fun leading in the direction of the exercise, and is a practical and effective way to

exercise, so that you can make the user can regularly insist on fitness, and the exercise will be in a funny way of bring user interaction.

My research and exploration is about what technologies can help users improve their experiences and relieve stress, and how people cope with everyday stress. Through the research on these aspects, I can help the team determine what kind of user interface can help relieve the pressure, and my research can help our team maintain a good user experience while reducing the pressure.

THE RESPONSE TO FEEDBACK

Our previous group Hi Distinction concept got a lot of feedback after the Pitch. In the previous research, we found that the method of beating was used to relieve pressure, but after the presentation, the feedback was that most people thought it might be an effective way to relieve pressure. However, such a method tends to make people prone to violence. In response to this feedback, we switched our research to explore a non-violent outlet. So in another study we decided to use exercise as an alternative to violence.

Another type of feedback we get is that some people think the way we choose is not a positive way to relieve stress. We did research on this, exploring different ways to relieve stress, and then we chose to exercise to relieve stress.

Another type of feedback says it's best not to use screens as a way to present feedback. Since what we have shown is only a preliminary concept, we have added a variety of alternatives to the use of screens at the beginning of the design, such as virtual reality technology, augmented reality technology and so on.

THE DISCOVERY

Our concept of the amount of key problems at two o 'clock, the first point is we haven't found an effective way to exercise to help users reduce the pressure, the second point to determine the user's pressure reduction is a long-term process for this process we should choose those aspects as for determining user pressure increase or decrease.

For the first point, the choice of exercise is particularly important because the main purpose of our concept is to relieve people's stress through exercise. Considering that our target audience is students, the way we exercise should be acceptable to students and a safe and active exercise activity. In addition, considering the students as a group, we don't want students to spend too much time understanding how to do this exercise. I want our exercise to be as simple as possible.

In terms of how to obtain the survey results, it can no longer be accomplished by theoretical research, searching for background knowledge and relevant materials. I hope to obtain this information through investigation and interview. In the survey, I will use videos to show how the exercise activity is carried out, and give a variety of styles for participants to choose, and then statistical results to know which exercise activity can best satisfy users and reduce pressure.

For the second key problem, because the measurement of stress requires a professional stress test to know the person's stress level, the change in a person's stress level is not a short-term and obvious process. So you need to use another way can replace the pressure differential, through reading literature, I decided to use a person's happiness to reflect a person's stress level, because a piece of literature, the most direct method of judge a person's pressure is, observe whether the person is happy, though not entirely accurate, but is a not long time watching an alternative way.

On how to get the results of the survey, I want to be able to continue to choose good think can effective relief way to exercise the interviewee to study a short diary, this diary the cycle of learning orientation for three days, let the interviewee after the exercise record mood every day, then the summary analysis, to determine whether can effectively reduced pressure to make users happy.

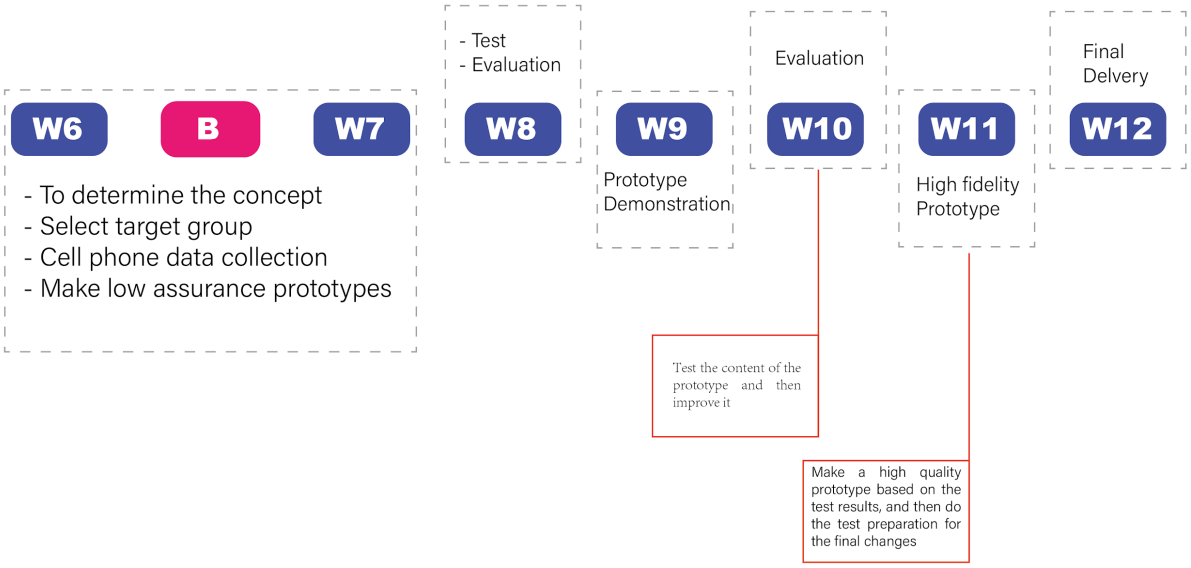
PROJECT CONSTRAINTS

I pay more attention to the user experience in the whole concept. Although this is easy to understand, there are many obstacles in the actual monitoring and investigation. First of all, I hope to set up a constraint for my project, which is that I can feel happy after the user experience and use, and I am willing to make many attempts, so as to achieve the improvement of user experience.

Another area that needs to be constrained is the age range of students, because based on the data we can gather so far, we cannot tell which group of students needs to reduce stress more. I infer according to my own situation, college students need to relieve stress under pressure, because we are facing pressure from school and graduate employment pressure, but in front of the college students have a very heavy academic pressure, the pressure of the high school also seems to be not small, but this is about to consider the different cultural background of different countries. Considering that it is now in a special period, I can only contact with college students, so I set my target users as college students.

PLAN FOR COMPLETION OF THE PROJECT

In the next time, I will complete my plan for this semester according to my plan form, and changes will be added at any time


W6
B
W7
- To determine the concept
- Select target group
- Cell phone data collection
- Make low assurance prototypes
- Test
- Evaluation
W8
W9
Prototype Demonstration
Evaluation
W10
W11
High fidelity Prototype
Final Delvery
W12
Test the content of the prototype and then improve it
Make a high quality prototype based on the test results, and then do the test preparation for the final changes

(Figure 9)

SNOW' S INDIVIDUAL PART

INTRODUCTION TO ME

I am a design background student who is good at using skills that relevant to design. I have learned Photoshop, 3D Max and CAD from my previous design degree, which is not relevant to interaction design but may help in creating a model if needed in this course. I am a master student of interaction design. I am familiar with skills relevant to the process of interaction design, such as doing user surveys, prototype design, and evaluation. I PS and AI are software that I can use to design pictures for this course. I can do the web design for the portfolio as well. I have learned Unity, what is the majority software that I will use to create the prototype of the course, however, I am not very good at it, I will keep learning it in this semester. My weakness is that I never learned Arduino before. I just use Makey Makey in the digital prototyping course. Thus, I need to use more time to learn it in the course.

I can support the team in any design skills that I have mentioned above and can join the interaction design process and report writing. But we choose to develop different ways to solve the same problem for the same target user. All of us will do different designs and create different prototypes. Therefore, as a team, we only can support others in doing research and sharing knowledge. I will deliver the project by a prototype made by Arduino and a report. After learning this course, I hope I can use Unity and Arduino well. I want to learn more about creating the open-ended concepts and more ways to do user evaluation in the course as well.

MY FOCUS

Our team topic is helping university students to release their stress. There are several types of stress that university students may face, such as catching the deadlines of the assignments, fear of failing the exam, suffering from financial burden, and feeling the stress of the new social environment. I will design things that can help students to release their study stress. Firstly, as in the course requirement, the design should be user-oriented, open-ended and playful. Students have a different life, different study methods and different study preference that include different efficient study periods of the day, relax requirements and so on. Thus, the design should be user-oriented. I will set the personalized functions in my design. For attracting the user to use the designed product, the design should be open-ended and should playful. The design should make the user's focus on itself, interesting activity or a game, to let the user relax their mind. Second, the design should involve exercise and should not use to ask the user to use a long concentration period to use it. Students may lack time to do sports, but doing sport is good for study. Doing sport can make students keeping healthy and useful in release stress. Thus, the design should involve exercise to make the user relax their mind and do sports in the same period. It is a way to save their time to study as well. Students need to use a lot of time on study, therefore, the design should have a limited operation time to make sure the student will not addict to it to ignore the study. Third, several factors that may use to help students to release their pressure can be considered to be involved in the design. Those are deep breathing, colorful and bright environment, animal, music, study and sleep management and sports. I

didn't find what I will exact to do yet, but I may create a game that fit the rules that I have mentioned above.

Response to feedback

The previous design in our group is using a boxing game to simulate smash things in the home to vent stress. It includes violence factor which may have a negative effect on the user's mental health. Thus, more healthy ways to help users to release the pressure should be explored. We have narrow down the target user group to the university student, who needs to release stress and can be found to join the evaluation easily. For feedback about interacting with the screen is a very limited interaction method, I will try to develop a more physical way of interaction. Regarding the equipment usage environment, we didn't mention in the previous group concept. I will design a relaxed environment in my individual design.

Discovery

In this early stage of the project, I am not sure what kind of functions the user expect and what can make the design more novel and open-ended. To do the discovery, first, I will do more literature review about what kinds of the method are useful in helping people to release stress. I need to know more about existing methods and existing products to see what kind of method is useful and to inspire me. Second, I will do an online interview for knowing what kind of functions the user expect. There are two questions that I will set in the interview. One, what kind of study stress you have faced? How you solve it. Two, what kinds of methods you think will be useful in releasing study stress? What kind of products or functions you expect to appear in the future that can help to reduce study stress. Third, to inspire me to create a novel and open-ended concept, I will try to search if there are some novel products of releasing stress in the film and the fiction. I will search for concept products online and will search for good interaction and physical computing design temple as well. After creating the initial concept, a video prototype will be provided to the user for collecting feedback to improve the design that makes it more user-oriented.

Project Constraints

As I have mentioned above, I will create a short game that is set in a relaxed environment, with playtime limitation and personalized settings, and can let the user do sport or exercise while playing the game. The first constraint in the project is the limitation and the personalized setting, It may hard to achieve it in my prototype base on low coding skills, but I will try to do it. If I cannot present it in the prototype, I may present it in the report as a direction of future development. I think for the student, it is important to make sure they will not be addicted to the game and the setting for their personal study arrangement is useful, however, this is just what I think. I will do an online interview to get feedback from the user to make sure whether it is necessary to be involved in my project. Similarly, I may not achieve some functions in the final prototype due to technical issues, but I can state what it should look like, what I have tried, why it cannot achieve and what the value of it for the user in the report. The other constraint is that due to the COVID-19, it's hard to do an evaluation as normal (face by face). To let the user join the evaluation, video prototype, remote

control of computer screen and some evaluation method that can support distance evaluation can be used such as online interview and cultural probes.

PLAN

Week 1 -6 team form and team concept	Finished
Week 7 concept confirm	Do literature review, online interview, and create the persona and scenario to support the concept development. Then, draw the concept card to do the evaluation. After that, collecting the user's feedback of the concept card to finally generate the concept.
Week 8 prototype construction	Base on the generated concept, create a low-fidelity prototype, create the video, write the report
Week 9 Prototype Demonstration (Individual) and Prototype Appraisal (Team)	Finish the writing sections of individual and the team assignment
Week 10 Evaluation and analyze	Collecting feedback from the users and analyze data. The online interview will be finished this week. The data should include the feedback from team critique as well.
Week 11 Prototype construction	Improve the concept design base on the feedback, begin to build the prototype
Week 12 Prototype construction	Finish the high-fidelity prototype construction
Week 13 Evaluation and analyze	Do evaluation, online interview, remote control screen or cultural probes and analyze the feedback from the users
Week 14 Final Delivery (Individual) and Final Delivery Report (Team)	Finish the individual and the team assignment
Week 15 Do the portfolio	Create the webpage of portfolio
Week 16 Critical Reflection (Individual)	Submit the assignment

(Table B)

REFERENCES

Graham, L. (2012). “Socialising through Exercise Perhaps is a Gift from Heaven”: The Relevance of a Sport and Recreation Service to the Needs of International Students. The International Journal of Sport and Society, 3(2), 191-200.

Folkins, C. H., & Sime, W. E. (1981). Physical fitness training and mental health. American Psychologist, 36(4), 373–389. https://doi.org/10.1037/0003-066X.36.4.373

Ozdemir, U., & Tuncay, T. (2008). Correlates of loneliness among university students. Child and adolescent psychiatry and mental health, 2(1), 29. https://doi.org/10.1186/1753-2000-2-29

Gray, A. and Smith, C., 2003. Fitness, dietary intake, and body mass index in urban Native American youth. Journal of the American Dietetic Association, 103(9), pp.1187-1191.

Bock, B. et al., 2019. Exercise video games for physical activity and fitness: Design and rationale of the Wii Heart Fitness trial.

Huang, H., Wong, M., Lu, J., Huang, W. and Teng, C., 2019. Can using exergames improve physical fitness? A 12-week randomized controlled trial.

Yeatts, P., Martin, S. and Petrie, T., 2019. Physical fitness as a moderator of neuroticism and depression in adolescent boys and girls.

APPENDIX

COMMENTS OF 7-11

1. Exploring human body in gaming area is a great starting point. It is interesting to see how it combine with against bushfire. But maybe, lack of physical interactions?
2. Really interesting potential for body as controller.Could shift target audience to target users with accessibility needs.Superpowers could be sense of hearing (without sight) and gameplay would revolve around how these users would react to a natural disaster
3. Gestural control is a hard nail to hit. Different gestures mean different things to different people. What might mean one thing to me will mean another thing to someone else.
4. What is the context of this concept? Will it be used for teaching fire safety in schools or higher education, or just for the individuals to use in the home? I'm not sure if I understood – is this through a VR-headset? If it is, could you perhaps look at how you can make this non-virtual, with sounds, lights, etc.
5. Interesting idea. I think the gesture could be more abundant. For example, some gestures can be added to save/protect animals in the Forest fire. In addition, it could have some links between different gestures. (edited)
6. Gesture based game. How can the takeaway be improved? Is there any reward for users that implement things they have learnt from the game. Instead of gestures the game could employ actual actions and scale them up to a super level. E.g. if you show the game you recycled it could scale up to what it would look like if the whole world recycled.
7. In what other, non-game & non-installation based contexts, could you explore body control? Don't use "easily implemented" as a measure for deciding your concept! Here you should be aiming for ideal experience, not doable experience. In future, present the concept before you present the process you took to get there - it provides context for your presentation. If this continues as an installation, what do users take away into their everyday life to enhance & reinforce the message? For VR, haptic feedback would be interesting to explore. VR is a well established technology but haptic feedback in that space is not so much.
8. Only concern I have is that gameifying a natural disaster like this could be a bit of a sensitive area. So i would keep that in mind.
9. Your idea is useful when it comes to making people pay more attention to some environmental issues. But one thing you should consider is that people may perceive the same gesture in different ways.
10. Could it be something else than a game or add it as a gamification on top of some mundane task to make it more of an everyday thing?
11. It is a really cool idea. It will be perfect to add some educational content and maybe a reward system to show the results.
12. The problems are fire and trash. Focus on one problem is better. Using the finger for related to fire only is better. Especially for crashing the plastic bag can be changed with crashing the tree to cut off the fire or something else.
13. I think people might be interested in the idea of being a superhero. But when using gestures, as it is not a traditional way of controlling the game, consistency is a crucial part to think of. You need to reconsider if these gestures are connected to the scene in the game and would players accept the connection.
14. The idea is very interesting, but I think it is too limited to one scene. If you can set more scenes, it may be a good choice. In addition, is this too demanding on the environment?

15. It would be interesting to explore how to teach people of danger signs, such as teaching users to sense dangers using electro haptic feedback. (edited)
16. I think for the purpose of teaching fire safety a more tangible approach could be better, maybe make the context more everyday, maybe in a household. Could the family somehow run drills or otherwise teach their children about fire safety in some way.
17. This is a cool interpretation of body as controller and interesting incorporation of the superhero concept. I can see potential with a younger demographic teaching them skills to avoid smaller scale disasters such as fires at school/home - the superhero concept would align well with younger users.
18. Could be an interesting game, however, maybe it would be better to think about how you can incorporate it into everyday life, rather than a game, using VR. Perhaps teach users what habits or things they need to do to always be prepared in case of bushfires coming near their house.
19. This idea seems fun and interactive, however I can see some issues that would quickly arise. You would need to factor in potential scenarios such as those who are in a rush, if the elevator is full and if people with accessibility issues are not able to complete the dance and can't walk up stairs.

Comments of Hi Distinction

1. You will first need to understand what type of stress your user is going through (good stress / bad stress). Also more research needs to be done on how different people find effective ways to relieve stress. (no one solution works for all)
2. Interesting combination of boxing and stress relief. This is very similar to wii fit's boxing game. Perhaps move away from a screen and, instead, have an arena and have user respond to light and sound to box 'ghosts' – then provide the user with haptic feedback.
3. It would help to present the concept itself first, before describing the lead up - it helps us to understand the background & lead up you describe. Should look to research about the effectiveness of "hitting" to relieve stress, while it might provide immediate relief over time it is problematic. Do you imagine this to be something people have in their home? +1 for what Clay said re good stress / bad stress. The higher level aim of providing stress relief is a good one to explore - and I think you have a lot of potential in terms of what methods can be used to do so.
4. Rewarding negative emotions such as anger can lead to poor mental health over time and can actually make the negative emotions last longer. Is there an interaction that releases stress but in a positive way? What about petting virtual animals?
5. I think this idea needs more interaction. You can make more use of the vibration sensor on your gloves. For example, when you do not hit an object, a long interval of vibration is generated; when you hit an object, a continuous vibration is generated; when you crush an object, a continuous and rapid vibration is generated. Similarly, the sound of hitting an object should change differently depending on the strength of the punch.
6. For your second persona, I think it is not very appropriate. Doing sports as a hobby is a relax way for those kind of people, which can release dopamine. If they have a pressure to compete, it might make sense in stress release. You need to reconsider your target audience. (edited)
7. Hitting the air with boxing glove will not give you the pleasure. Adding something like the sandbag will make different feelings. Besides, usually, people not hit the glass, plate, etc. They throw it to the wall.

8. An intersting thing to explore if this is a healthy way of relieving stress and if it solves the problem of being stress in the first place. Could be interesting if it forced people to face their sources of stress so it can help with self improvement as well
9. This seems like another boxing sports game, just with a slightly different controller. Consider ways where the screen can be removed, such as having the punched objects be physically present in the room. Also, it seems that you are saying the game is good for quiet spaces, but that users will shout as part of the interaction. That doesn't seem to match properly. Which one is it meant to be?
10. Could you move away from the screen to make it less similar to consoles with motion sensing? Could boxing output some interesting artwork such as being interpreted as different hues and saturations to colour in an image and hitting certain areas to colour in that area?
11. I think this is a cool way to mimic real life versions of this that are aimed to relieve stress. These stress relief rooms are often for entertainment purposes and only used very infrequently as they are not the best way to relieve stress and can encourage violence. I think you could add additional methods of stress relief that are more calming would benefit the concept and the users.
12. This concept is very interesting to explore, however, for stress relief, it may be a bad thing if they rely on the boxing glove to relieve their stress thus it can promote violence which wouldn't be the best way, maybe even doing something us yoga poses with meditation may be an option to explore and it is a more calmer experience
13. Interesting idea, perhaps think about how you can go beyond a screen. Could use boxing as an exercise activity rather than smashing virtual things. People would probably not interact with this everyday as this is probably a sometimes interaction.
14. People could feel release after punching, but I think at least they have to hit something. The kinetic energy transform to internal energy, and thats where the relief come from. You can't feel relief if you just hit the air. So there might need something to let the user hit on.