Stressless Galaxy

An interactive space for stressful emotion relief!

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Related Work:
Stress Coping Solution: Squeeze Toy & 3D Music & Massage Gun

Related Work:
Galaxy Exhibition

Prototype Showcare

Problem Space:
Stress can cause harm to people's mental and physical health and reduce the overall happiness of society (1). We focus on young adults who stress out in their lives and want to escape for a moment.

Concept:
The galaxy-schemed zone (6) was intended to drive the user away from the stressful earth. This private space, only allowing one person to get in at one time, will shut down the user's outer stress (2).
Here, various interactive celestial bodies give out positive emotions (3,4). The user can nudge, hug or even squeeze (7) them and receive multi-sensory exposure treatment (5) like a dynamic light show, surround sound and vibration.

Video:
https://youtu.be/UDLXOxcMBXo

Related Work:

1. Higher levels of stress lower the levels of happiness in people. (Schiffrin & Nelson, 2008)
2. Distraction that shuts down one emotion (Verduyn et al., 2015)
3. Positive emotions can help adapt stress level by sustaining coping efforts, providing a "breather," and restoring depleted resources.(Folkman & Moskowitz, 2000; LAZARUS et al., 1980)
4. Positive emotions can be generated in three ways: Positive Reappraisal, Problem-Focused Coping methods, and Creation of Positive Events. (Folkman & Moskowitz, 2000)
5. Multi-sensory Exposure Therapy, which uses 3D Visualisation, Surround Sound, and Synthesised Music can help anxiety healing. (Argo et al., 2014)
6. Galaxy Exhibition: Musical pieces are played throughout the venue that change in sequence depending on where the audience member is standing.(Galaxy of Records, 2017)
7. Stress ball enables ventilation by squeezing. (18 Fidget Toys for Anxiety, 2021)

Design Process

Brainstorm (W3): For our project, brainstorm is the first method to choose the most suitable idea for our team. Every team members provided their ideas of our topic, chosen one of these ideas to start our project. We decided on the theme of "Don't bring stress home" because we found that our friends were often in a state of stress and we came up with the idea of making it possible for people to decompress themselves. This is a product will be allows people to calm down and release stress quickly in the future.

Define (W4): The main goal of the project is to allow people in today's society to reduce stress and relax. The final interoperability of the product will be geared towards the working population (25 to 45 years old).

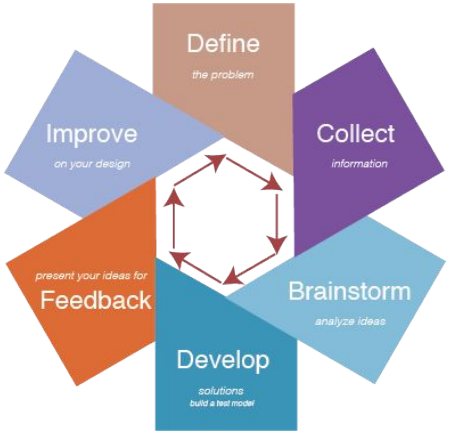
Collect (W5): In the initial project we chose to analyze how people react when they are stressed and how they want to vent by reading literature. In the second step of the project, we conducted street interviews, mainly selecting people between 25 and 45. Among these people, their responses were roughly similar to the survey we did between them. For example, all liked the idea of being in a dimly lit room, most liked our project idea, and agreed with the idea of sound. Finally we collected this information and summarized it.

Interview (W6 & Mid-break): first we asked everyone in the group to write down as many ideas as possible in a set amount of time. Then ideas were shared or responses were collected. Eventually we settled on ideas. The group starts preparing interview questions.

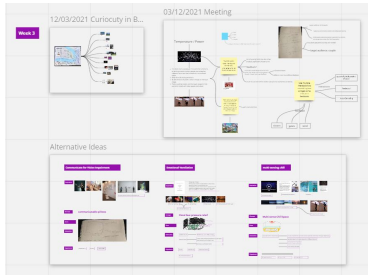
Feedback & Interview:
During this stage, we conducted random street interviews and targeted users at people aged 25 to 45. During the interviews we put the purchased stress balls in their hands for them to use (unconscious use allows for better feedback). The end result was that most users liked the way the stress ball was used, and they thought it would be better if the stress ball could make a sound. In addition, for the idea of color the vast majority of people like bright colors, such as LED lights bright blue. For the material, users really enjoy the reboundable (such as rubber or memory pillow), and think it is decompression.

Improve:

1. We will changed the shape of product (from flowers to soft sphere)
2. Material must be malleable / soft / can rebound (memory pillow)
3. Changed the music style, they prefer light music to ASMR



Design Process



MId-break interview feedback from Yawen Deng

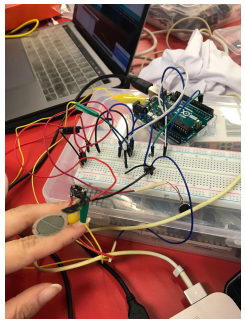
MId-break interview feedback from Zhanmei Zhao

Yawen Deng during an interview

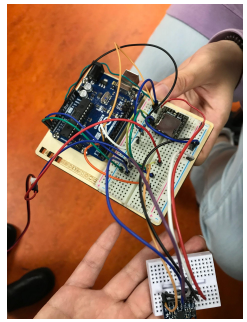
Design Process

Develop (W7, W8 & W9): Mockup sketch

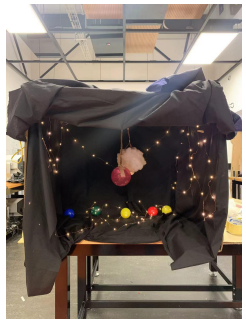
1.From previous research and interview, we combined all the information and feedback to make a mockup. Basic on the original design, we want people can play with our stressed balls in a private room, therefore the main product was created by a paper box, black clothes covered the box, which will provide a dark space for users.



2. A pressure sensor, vibration motor and neopixel are included in one of two stressed balls, they connected an Arduino.



3. A gravity sensor and an external speaker are placed in the other ball



4. Final mockup visualization

Feedback (W9) : Interview+SUS (user testing)

In this stage, our team has chosen interviews and SUS to obtain users' experiences. SUS will display the usability scale of the product. On the other hand, interviews provide us users' feedback from testing. Our team members can analyze problems in the original mockup. We prepared SUS questions and set 5 different levels from strongly disagree to strongly agree. Interview questions involved functionalities and improvements. One person asked users questions and another one record people's feedbacks by sheets and smartphones.

Interview feedback and SUS scale

For the SUS testing, we invited 6 users to experience the original mockup, they have filled the form of the SUS testing, scales were calculated as 67.5, which lower than the average score of 68 and which means that our mockup is not very easy for users to use. The interview feedbacks illustrate the problems during people using this mockup. The feedback given by the user after using the mockup is that people need to inform the usage method to understand how to use the product (the usage instructions). The sensing device of the pressure ball is not very sensitive, which is another problem of feedback. Users also like background music in the small space. For the shapes of the stressed ball, a user suggested we create a starry sky scene. The spherical shaking amplitude changes too much, which will affect the convenience of users.

	Question	User 1	User 2	User 3	User 4	User 5	User 6
1	I think that I would like to use this product frequently.	3	2	3	3	3	3
2	I found the product unnecessarily complex.	1	1	1	1	1	1
3	I thought the product was easy to use.	4	3	4	4	4	3
4	I think that I would need the support of a technical person to be able to use this system.	5	5	5	3	2	4
5	I found the various functions in this product were well integrated.	3	2	2	3	1	3
6	I thought there was too much inconsistency in this product.	2	2	2	1	5	1
7	I would imagine that most people would learn to use this product very quickly.	5	4	5	4	5	4
8	I found the product very cumbersome to use.	4	4	3	3	1	2
9	I felt very confident using the product.	5	4	5	5	5	4
10	I needed to learn a lot of things before I could get going with this product.	1	2	1	1	1	1

SUS testing

User testing

Future improvements (W9)

1. Changed prototype scene and make the final work in the form of starry sky
2. Work with teammates to update the code to meet the users desired trajectory of the sphere as much as possible
3. Adding background music, users believe that a background sound should always be present in the scene, which will make them more relaxed

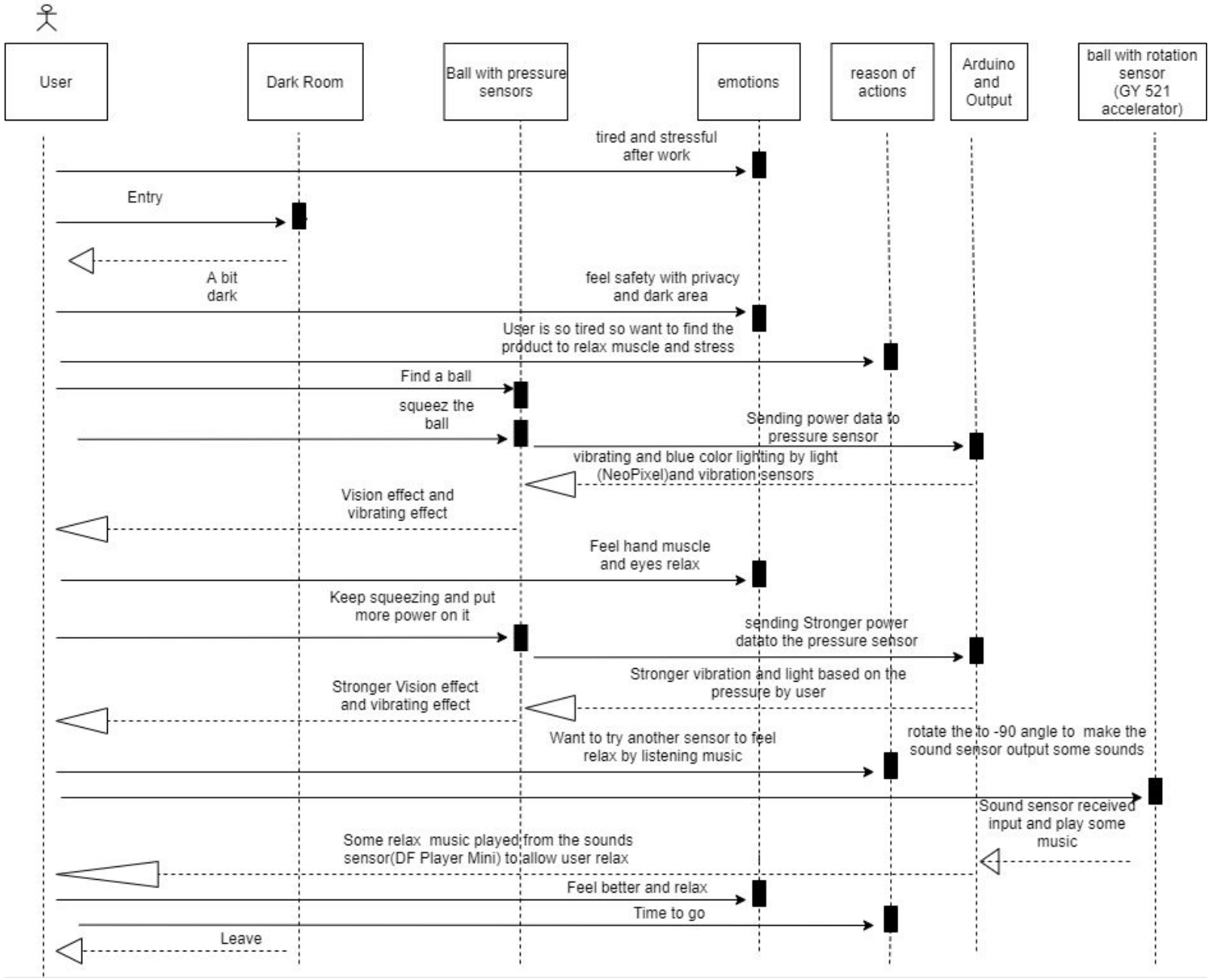
Interaction Plan

Interaction paradigm:

•Embodied Interaction
Using hand squeezing or pressing on the prototype to recreate some senactions which is lighting, vibration and sounds effect to the user.

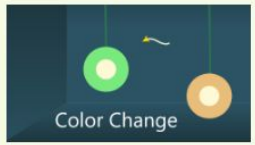
•Manipulating and Navigating
User can control the power of lighting and vibration by their squeezing power on the pressure sensor. Moreover,
User can rotate the prototype to different angle to play some relax music.

•Exploring and Browsing
Combining dark and privacy area to create a safety and relax experience to the user. In addition,
the lighting function by the Neopixel sensor can also browsing the vision effect to the user

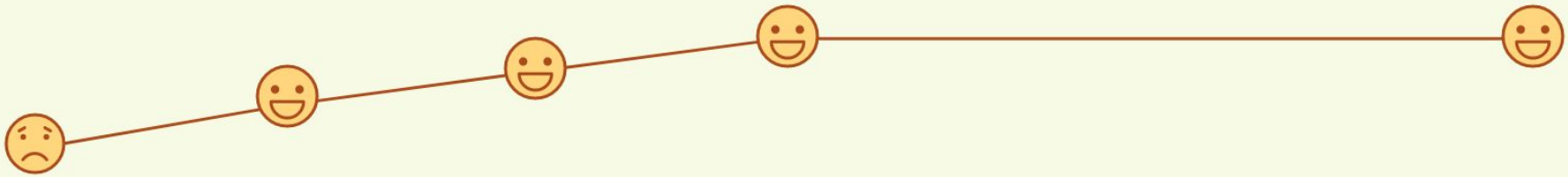


Interaction Plan

User Journey map

Stage Point	Enter the room	Notice the weak light	Squeeze	Get Responses	Response 1	Response 2	Response 3
Image							
experience & Touch Points	1.David gets so tired after he finishes work and she is thinking about how to deal with the customer tomorrow. He is in a deep sad mood and need to relax himself..He notices a room beside him. And a board on the right shows “don’t brings troubles back home. He walks into the room to have a experience.	It is a dark room with some weak spots lights. He walk towards them. He saw touchable balls nearby and feels curious about them.	He finds balls are soft and try to squeeze one of them. It is flexible and shapeable. He found products of different shapes and sizes in the space which is a big surprise. Its flexibility makes him try to squeeze it.	He can get multiple sensory responses while squeezing. These interaction feedbacks make him feel that he was being embraced, and he was comforted in his heart.	Response 1: Vibration When he squeeze the ball, the ball began to vibrate. The harder the user pinches the ball, the faster the vibration.	Response 2: Color Change The ball would change different light colors while squeezing.	Response 3: Color Change The ball would can release music to help people adjust mood while squeezing.

Emotions points & Explanation



At the beginning, the user was in a mood of depression and high pressure. Then he received constant new sensory feedbacks which can make him to relax and arouse the mood and help him get back to a healthier condition.

Project Objectives & Success Criteria

Aspect (Weight)		Unsuccessful (-1)	Mediocre (0)	Success (1)
Project Delivery (50%)	**Fit the Purpose of Stress Relief (10%)**	The delivery of the project has little evidence to help decrease people's stress.	Most parts of the project plays the role to release, but a few aspects degrade the purpose.	The delivery of the project gives high performance in solutions with high respect to destressing.
	Emotional Design: Brings Positive Emotions (10%)	The project does not prove any evidence that has applied emotional design principles to help create positive emotions.	The project has taken into account of emotional design, but miss some sights of the problems or solutions.	The project focuses on emotional design, applies highly related design principles to deliver positive emotional designs.
	Fun: Recreating Sensations (10%)	The project does not prove any evidence that goes beyond the basic visual and auditory sensories.	The project combines multiple sensories to give a hybrid experience, but no one smile or laugh during the interactions.	The project employed multiple sensories cautiously with considerations to fit the purpose of use, and get multiple times of laugh.
	Build Functionality (10%)	Less than 50% of designs are built throughout the course.	Less than 75% of designs are built throughout the course.	No less than 95% of designs are built throughout the course.
	Creativity (10%)	The Project has little evidence to go beyond the basic physical computing tutorials.	Partially innovative, with other parts stay normal, no one 'WOW's.	The Project gives people the sense of refresh for its idea and implementation. More than 5 users 'WOW's.
Design Process (40%)	**Reasonability (20%)**	The conduct of design process has very little evidence of necessity.	The design process is conducted with reasons, but not every reason is reasonable.	The design process is necessary but concise, to fit the purpose and time limitation.
	Criticality (20%)	Very few critics happened during the design.	The project evolves with limited critics.	The project evolves with critics at every stage.
Team Collaboration (10%)	**Team meeting: Effectivity (5%)**	Long hours team meeting with no agenda	Reasonable time range under agenda but little risk management	Excellent time arrangement and effective use of meeting time, allow risk happen but under control
	Punctuality of Delivery (5%)	Late delivery, which is overdue	On-time delivery but needs to be revised	On-time delivery with highly thoughtful outcomes

Score = ∑ Weight * Each Mark > 0.5 means overall success!