
Emerging Trends

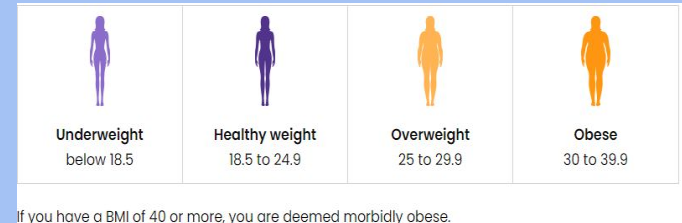
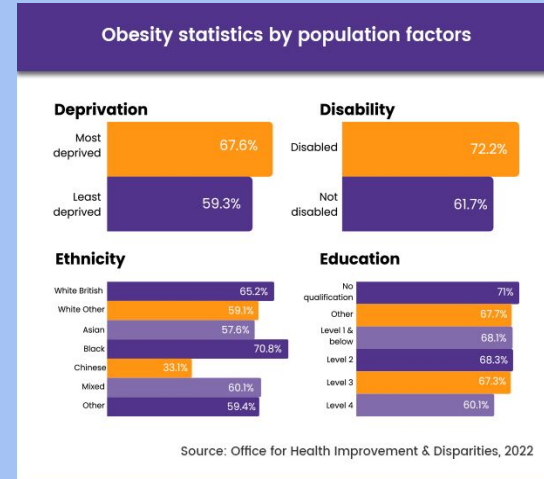
FIVE GUYS

Introduction

- Over two billion adults around the world are overweight or at high risk of becoming obese
- 26% of adults in England are obese.
- Further 38% are overweight.

Between 1975 and 2014

- obesity in adult men increased from 3.2 to 10.8%
- obesity in adult women increased from 6.4 to 14.9%



Team Members

Alex Jenkins



Cian West



Joshua Piecko



Tom Cahill



Phoenix Webb



Roles and Responsibilities

Alex Jenkins - Researcher: User Interface Design

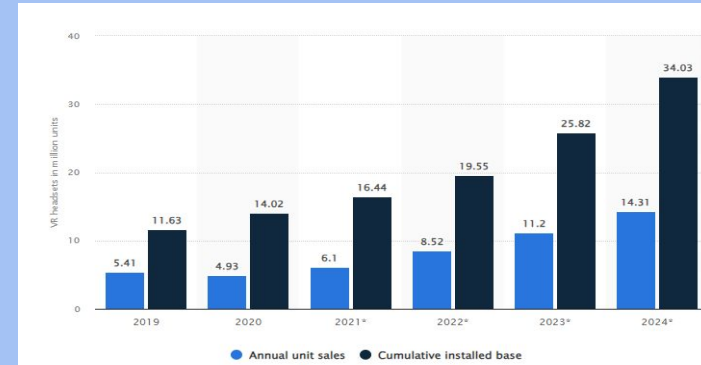
Cian West - Designer: Fitness Diagrams

Josh Piecko - Researcher: Statistics

Phoenix Webb - Researcher: Solution / Emerging trends

Thomas Cahill - Designer: Companions

VR Health and Fitness Application



[1]

We have identified Virtual Reality as an emerging trend to combat obesity due to the increasing market demand of it and the increase of availability/accessibility over the years [1].

We intend to use this to our advantage: a free to use, all in one VR fitness application that gives the best aspects of each of your favorite fitness apps to streamline, simplify and make healthier living more accessible and enjoyable.

Proposed solution

A virtual reality software that gives you a virtual companion to motivate, guide and assist you, providing valuable information on how to achieve specific goals, such as weight loss or muscle gain, as well as creating a healthy diet.

The app offers stimulating challenges and rewards that unlock new workouts and meal plans. In addition, it offers the possibility of connecting with friends and training together in shared virtual environments.

Setting goals is essential to achieving positive change, and as you achieve your goals, you earn rewards that keep you motivated.



Proposed solution

Accessibility: Many individuals in the United Kingdom may encounter difficulties accessing gyms or exercise programs due to time constraints, location limitations, or financial resources. Our virtual reality software offers them the opportunity to exercise from the comfort of their own homes, thereby eliminating access barriers.

Motivation and commitment: Lack of motivation and abandonment are common challenges when attempting to lose weight or gain muscle mass. By providing a virtual companion that offers support, positive feedback, and personalized goals, our software can help individuals stay committed to their long-term objectives.

Nutritional education: Many individuals struggle to maintain a healthy diet due to a lack of knowledge about nutrition and dietary habits. Our software can incorporate educational tools that teach users about balanced nutrition, how to read food labels, and how to plan healthy meals.

Variety and customization: Monotony in exercise and diet can lead to boredom and abandonment of health goals. Our software can offer a wide range of exercise routines and healthy recipes, tailored to the preferences and individual needs of each user.

Why is this an Emerging Trend?

First, an emerging trend refers to a new or developing pattern, innovation, or practice that is gaining traction and showing potential for significant impact or growth in the near future.

Reasons:

- **Innovative Technology:** Virtual Reality (VR) is an innovative technology that continues to evolve rapidly. Integrating VR into the realm of fitness and health is a novel application that aligns with the increasing adoption of VR across various industries.
- **Changing Consumer Behavior:** There's a growing interest in health and wellness, coupled with the desire for convenience and accessibility.
- **Personalization and Engagement:** our software's ability to provide personalized exercise routines, nutritional guidance, and interactive experiences enhances user engagement. Personalization is a key aspect of emerging trends as consumers seek tailored solutions that cater to their individual needs and preferences.



Research

Competitors



There are numerous competitors offering similar solutions to ours. However, our product stands out as we have integrated the best features of these competing VR applications, along with top elements from non-VR platforms, to create a universally accessible, free-to-use product that caters to everyone's needs.



Console Exergames

Console Exergames are technologies that combine video games and exercise to promote healthy behaviour. [1] In the last ten years, active video gaming has been used in the prevention and treatment in obesity as a tool to increase an individual's physical activity. [2] Offered across Nintendo Wii Fit, Nintendo Ring Fit, Xbox Kinect and PlayStation Move consoles.

Advantages

- Helps with engagement in exercise.
- Created to fit the individualised needs of the player.
- Very much scalable and economically viable, given the range of compatibility in devices, which allows for more marketability.

Disadvantages

- Isn't done that often because of the high **development** cost.
- Interaction with a console may require handheld motion sensors. This allows the player to easily cheat; the console may believe they are moving, when in they are actually stationary.
- Does not have the capacity to keep players interest over longer periods of time. This comes from the poor variety of the content that is available. [3]



Virtual Companions in Other Media



[1]

The Vital Bracelet from Bandai Namco is a Virtual Pet device combined with a heart rate and step tracker, where the User can raise characters with branching evolutionary trees. [2]

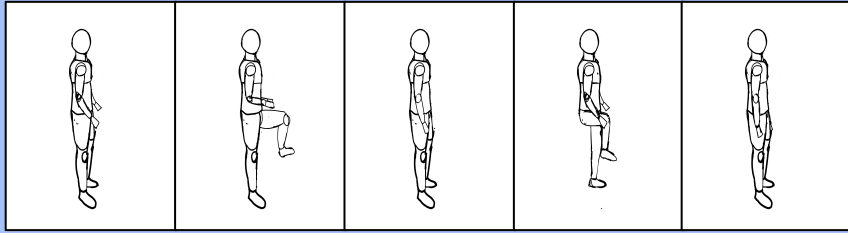
[3]



Pokemon GO is mobile game that uses the player's real world location as a map [4], encouraging players to physically explore their local area [5]

Design

Step by Step - Image based/video instructions



Users are prompted to complete workouts that are demonstrated via pictorials and instructional videos

- Performance is monitored and the app is able to score your form and provide feedback on your technique with potential for bonus points based on this rating.
- Users can unlock more content and explore fresh levels as they score more points and reach greater heights of personal fitness.

- You can choose between step by step image and video instructions
- Get scored for your performance. The app is able to track how good your form and technique is, earning you extra points the better your performance is.
- The higher the points and the better you do, the more content you unlock. Encouraging the player to keep going
- Points can be used to unlock additional companions. On top of that, additional workouts can be unlocked too.

Step by step - Image/video based instructions integration

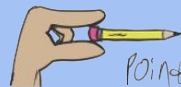
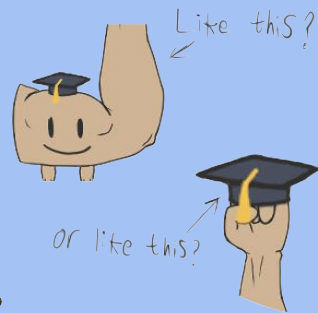
The step by step instructions will be integrated in with the companion system. Having them interact in a variety of ways. This gives personality, character and an attention grabbing aesthetic.



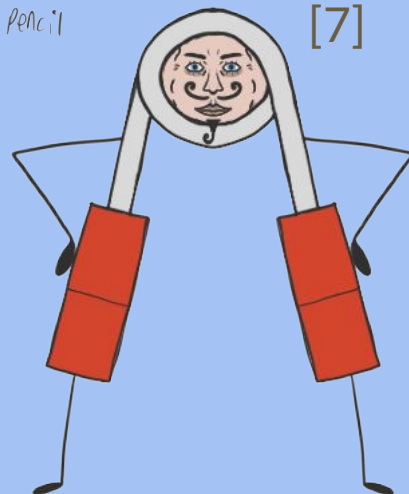
Companion Designs



Would they wear a hat?



Points using pencil



- Users can choose from a selection of critters
- Earned points can be used to unlock additional characters
- They present data on the User Interface and encourage/provide commentary on the user's performance

UI

Hologram instructor

Have the ability to toggle on or off.

showcases the form and technique of the exercise.

The hologram does not speak.

The companion presents the hologram instructor and describes each step in both spoken and written form.



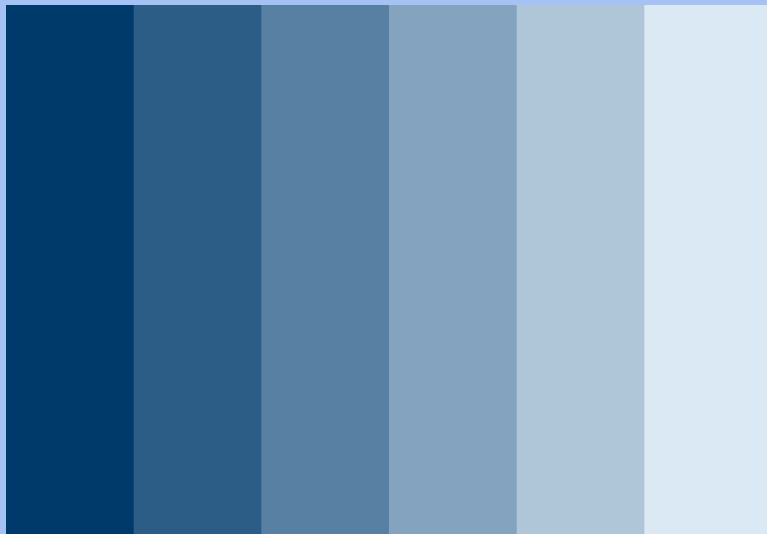
[1]

UI

Default Colour

The default colour palette consists of shades of blue and white. In relation to fitness blue represents focus and concentration [2] [3]

The UI is minimalist by default but can be customised by the user.

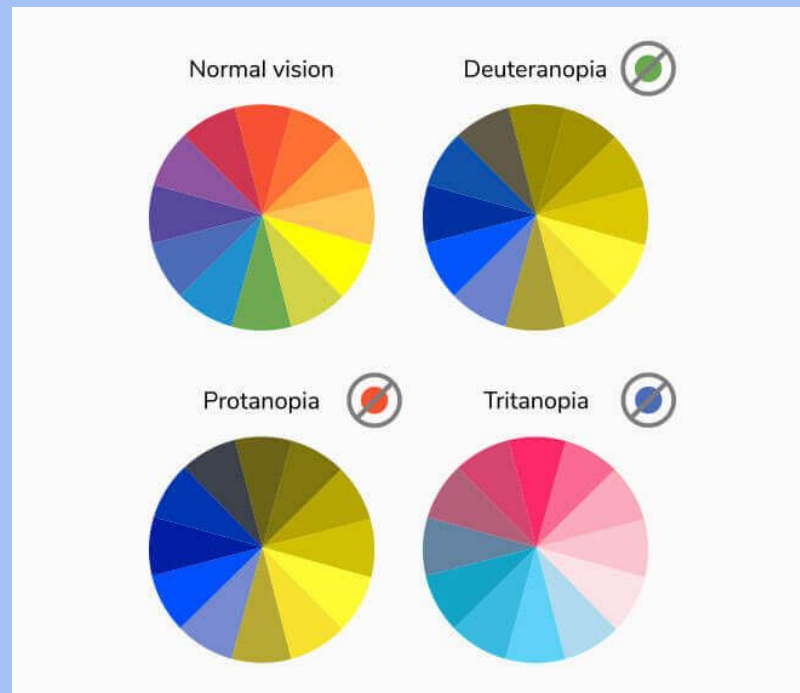


[4]

Colour Customisation

If the user would prefer a different colour for the environment, they can select from a variety of preset colour templates

There are also options for players with colour blindness



Accessibility

Colour blind settings

Adjustable contrast settings [1]

Screen reader setting

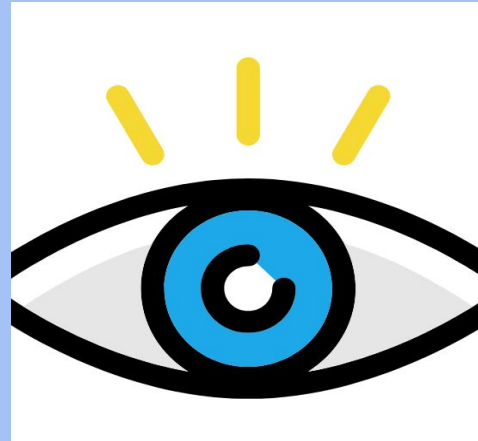
Mono Audio -

Closed Captions

Voice controls



[4]



[3]

Customisability

Change the size of different aspects of the UI

Change font colour and size

Separate volume controls for different aspects such as effects, music, dialogue [1]

Language settings



[2]

Conclusion

While there is already an existing market for exercise games, our team believes that these can be taken steps further beyond the features of those already available expanding on and taking inspiration from other similar applications and further refined using Augmented/Virtual Reality technologies.

Reflection

Assuming we were to tackle this project again some things we think we could and would do differently next time would be...

Group Meetings

Group Meetings were difficult to coordinate and arrange due to conflicts in schedules.

Next time we could work around this by holding more group meetings with fewer of the group members presently available and making more of an effort to properly document work being produced utilizing the appropriate channels to prevent us from hitting as many brick walls during our research - thus allowing progress to be made quicker and more rapid iterations on design.

Team Dynamics

While generally the group suffered from no conflicting personalities and could be considered to have worked quite well, coordination and delegation of assignments and tasks was made more difficult considering we all shared similar skill sets and knowledge.

Next time we have agreed that we could improve on this by assigning roles to individuals from the group that both played on their strengths but also their weaknesses allowing them potential to develop themselves and become more comfortable in practice when completing whatever the assigned task that typically makes them uncomfortable may be.

Coordination and Delegation of Tasks

Next time tasks can be more easily delegated and monitored utilizing a project management tool such as a KanBan board.

Some suitable KanBan tools available:



[1]



[2]

Research

When researching the project the group found difficulty in finding sources that were directly relevant and appropriate to us being located in the United Kingdom.

Next time we have considered that the utilization of the search engine could be improved by:

- **Better Refining the Search Question**
- **Using Date Filters**
- **Using Location Filters**
- **Using more Scholarly databases i.e. Google Scholar**
- **Using Key Word Filters - “ ”**
- **Exclusion of Search Terms**

References

Introduction

**[1] Obesity statistics - House of Commons Library,
<https://commonslibrary.parliament.uk/research-briefings/sn03336/> (accessed May 9, 2024).**

**[2] A. Al-Rasheed et al., “Virtual reality in the treatment of patients with overweight and obesity: A systematic review,” MDPI,
<https://www.mdpi.com/2071-1050/14/6/3324#B28-sustainability-14-03324> (accessed May 9, 2024).**

VR and Fitness Application

**[1] T. Alsop, “VR headset unit sales worldwide 2024,” Statista,
<https://www.statista.com/statistics/677096/vr-headsets-worldwide/>
(accessed May 9, 2024).**

Console Exergames

[1] N. Gaming, “Wii sports - a blast from your past,” Red Bull , <https://www.redbull.com/in-en/wii-sports-%E2%80%93-a-blast-from-your-past> (accessed May 9, 2024).

[2] J. Bakalar, “Microsoft Kinect Review: Microsoft Kinect,” CNET, <https://www.cnet.com/reviews/microsoft-kinect-series-review/> (accessed May 9, 2024).

[3] S. S. “PlayStation Move: The ultimate FAQ,” PlayStation.Blog, <https://blog.playstation.com/2010/09/07/playstation-move-the-ultimate-faq/> (accessed May 9, 2024).

[4] Google image result for <https://cdn.benzinga.com/files/imagecache/1024x768xup/images/story/2023/06/29/xpof.png>, <https://images.app.goo.gl/SHCaNM3GD9Fh36586> (accessed May 9, 2024).

[5] “VRWorkout Launches a Future-of-Fitness Experience, Revolutionizing Workouts with Controller-Free Gameplay,” Google image result for <https://mma.prnasia.com/media2/2037173/xrworkout.jpg?p=publish>, (accessed May 9, 2024).



[1] Tampatra, “Human model on blue background in technology concept, artificial...,” iStock. [Online]. Available:

<https://www.istockphoto.com/photo/human-model-on-blue-background-in-technology-concept-artificial-intelligence-3d-gm969085484-264163734>. [Accessed: 08-May-2024]

[2] D. Salcumbe, “How to use color psychology to create the perfect fitness website,” My Personal Trainer Website. [Online]. Available:

<https://www.mypersonaltrainerwebsite.com/blog/how-to-use-color-psychology-to-create-the-perfect-fitness-website>. [Accessed: 22-Apr-2024]

[3] E. Hogan, “Can different colors affect your workout?,” Les Mills, 29-Sep-2023. [Online]. Available:

<https://www.lesmills.com/uk/fit-planet/health/color-psychology/>. [Accessed: 22-Apr-2024]

[4] chaboineil, “Light blue theme color palette,” Color Hex Codes. [Online]. Available:

<https://www.color-hex.com/color-palette/81189>. [Accessed: 22-Apr-2024]

[5] R. Cravit, “How to use color blind friendly palettes in your design,” Venngage, 02-Apr-2024.

[Online]. Available: <https://venngage.com/blog/color-blind-friendly-palette/>. [Accessed: 08-May-2024]

Companion references

- [1] Bandai Namco, “NT82569 | Bandai | Vital Bracelet BE | Digimon Ghost Game | Digimon Ghost Game Set | Device”, *Bandai*. [Online]. Available: <https://shop.bandai.co.uk/brand/bandai/vital-bracelet-be/collection/digimon/digimon-ghost-game/nt82569-bandai-vital-bracelet-be-digimon-ghost-game-digimon-ghost-game-set-device/>.
- [2] “A Complete Guide to the Digimon Vital Bracelet and Dim Cards,” *ONE MAP BY FROM JAPAN*, Feb. 15, 2022 [Online]. Available: Guide to Bearbrick: The origins, how to buy, where to buy and much more! | One Map by FROM JAPAN.
- [3] Niantic, “Pokemon GO FEST 2024”, *gofest*. [Online]. Available: <https://gofest.pokemongolive.com/global>.
- [4] Pokémon, “Pokémon GO,” *Pokémon*, Jul. 14, 2016 [Online]. Available: Pokémon GO | Pokemon.com.
- [5] M. Kamzina et al “Impact of Pokémon Go on Physical Activity: A Systematic Review and Meta-Analysis,” *American Journal of Preventive Medicine*, vol. 58, Feb. 2020.
- [6] Cornell University, “Black-billed Magpie,” Celebrate Urban Birds. [Online]. Available: <https://celebrateurbanbirds.org/learn/birds/focal-species/black-billed-magpie/>.
- [7] RPM Power Store, “Power Gripper Metal Series - Professional Grip Strengtheners (50lbs - 400lbs) for Grip, Wrist & Arm Training,” Amazon, Sep. 18, 2019. [Online]. Available: Power Gripper Metal Series - Professional Grip Strengtheners - (50lbs - 400lbs) for Grip, Wrist & Arm Training (200lbs Red) : Amazon.co.uk: Sports & Outdoors

Customisability and Accessibility

[1] “Full list,” Game accessibility guidelines, <https://gameaccessibilityguidelines.com/full-list/> (accessed May 9, 2024).

[2] L. Fuhr, “The 7 CPQ key features. (don’t just get any proposal software),” iQuoteXpress, <https://www.iquotexpress.com/blog-entry/2016-6-the-7-cpq-key-features-dont-just-get-any-proposal-software> (accessed May 9, 2024).

[3] “Visual stress: What is it? - sight support,” Sight Support Worthing, <https://sswcharity.org.uk/visual-stress-what-is-it/> (accessed May 9, 2024).

[4] K. Sangani, “How we test smartphone audio recording,” DXOMARK, <https://www.dxomark.com/how-we-test-smartphone-audio-recording/> (accessed May 9, 2024).

Coordination and Delegation of Tasks

**[1] “Trello brings all your tasks, teammates, and tools together,” Trello,
<https://trello.com/> (accessed May 9, 2024).**

**[2] “Kanban boardthe #1 way to improve the efficiency of your team,” Kanban Tool,
<https://kanbantool.com/kanban-board> (accessed May 9, 2024).**