

Bottle Battlers

Introduction

Many people seek experiences that elevate dopamine levels, from thrill-seeking to falling in love. However, problems arise when individuals cross the line in pursuit of this dopamine fix, often turning to harmful substances like nicotine and alcohol. These substances may offer short-term gratification but can lead to irreversible damage and addiction.

The use of immersive technologies like Virtual Reality has opened new avenues for educational and behavioural interventions. This application uses VR to address the critical issue of substance abuse by gamifying decision making in a maze-like environment. By presenting users with a choice between healthy alternatives and addictive substances, the application highlights the immediate benefits and long-term consequences of these choices. Through realistic interactions, such as grabbing and consuming virtual items, the aim is to educate users on the dangers of substance abuse in a way that feels engaging and impactful. This approach to the substance abuse issue provides a unique opportunity to promote positive behavioural change through an immersive learning experience, demonstrating that short-term gains from substance use can lead to long-term detriments in all aspects of life.

Elevator Pitch

Have you or anyone you know ever struggled to put the cask down? It is easy to let the train gain speed once it leaves the station, but sometimes you have to hit the brakes! This is exactly what this VR application intends to do; through futuristic use of such a technology, Bottle Battlers: Deliverance targets such behaviours by drilling healthy alternatives. Bottle Battlers - "Get your liver delivered!"

Description of the Application

In this application, the user finds themselves in a starting area with some text explaining the goal of the game. Near the goal is a button that will begin the game by placing them in a maze and requiring them to find their way out as quickly as possible. This endeavour will be timed, with a leaderboard displayed at the end. Inside the maze, the user will be able to find both positive and negative consumable items. Two examples of these are an apple and a beer, respectively. Upon finding one of these items, the user can decide whether or not to consume it. If they consume an item, they will take on the effects that item can bestow. For example, if the user consumes an apple by grabbing it and lifting it to their face, they will receive a minor speed boost for the duration of the playthrough, demonstrating the slow but steady benefits of a healthy lifestyle however, if they were to consume a beer in the same manner, they will

receive a large boost in speed for a little while, followed by a permanent decrease in speed afterwards. Along with the incentive and deterrent the beer offers, a nauseating dizziness effect will also take place for the player, giving the illusion of a drunken stupor, much like the effects of an overindulgence of alcohol in real life. These items are designed to tempt the user into making an unwise decision, and punish them for it, while slowly but surely rewarding good decisions. Upon pressing the button at the end of the maze to finish it, the user will be given their final time and shown the leaderboard, along with everyone's number of right and wrong decisions, to further hammer the point home.

The maze itself is designed to be a challenge that requires strategic thinking, as a player must choose between short-term ease and long-term efficiency. This will show no matter what the short-term pleasures and benefits substances can provide, healthy lifestyle choices will provide overall more pleasure from day-to-day life and a better outcome in anyone who chooses to focus on health instead of damaging themselves through substance abuse.

The goal is to provide multiple ways to complete the course, abusing the substance pickups will start you off easily with some extra boosts and a more enjoyable experience, but as time goes on the negatives of this abuse will come to light, causing the game to become much more difficult and time consuming in the long run. While on the healthy route you will not see any huge improvements straight away but with consistent healthy choices the user will achieve a time much greater than the other choice and be able to run faster, ultimately achieving a better time.

Description of the Interface Solution

The application is designed to gamify avoidance behaviours related to the use of illicit and addictive substances. As users navigate through the virtual environment, they will be presented with choices between healthy and unhealthy options, such as an apple or a bottle of alcohol. The interactions include a grab mechanism, which allows users to physically pick up objects, and a poke interaction that can perform various actions like pressing buttons to open doors, create bridges, or starting and stopping timers. These interactions provide a more immersive experience, engaging the user in their decision-making process. By physically choosing and interacting with objects, the application aims to encourage users to reflect on their choices, fostering a deeper understanding of the long-term consequences. For example, when encountering an apple, users may think about the positive, long-lasting health effects, whereas when they pick up a bottle of alcohol, they may consider the harmful consequences over time.

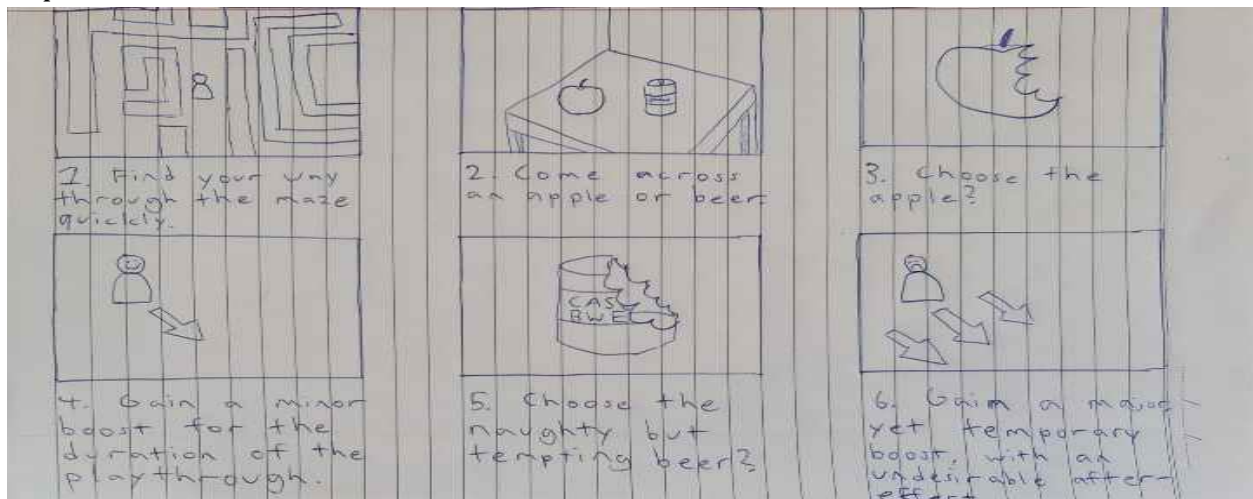
The decision to use Virtual Reality (VR) over Augmented Reality (AR) was made to enhance the realism of the experience and allow users to physically enact their decisions. In VR, users

can simulate actions such as picking up and drinking a beer, which leaves a stronger impression compared to merely seeing the objects in AR. By engaging physically, the experience becomes more impactful, reinforcing the substance avoidance behaviours through a tangible, immersive learning process.

Interaction Design

The interactions in the application are necessary as they allow the user to make the decision to engage in negative behaviours. Without the ability for the user to do this, the impact of the resulting effects would be somewhat lost, as they would not be logically tied to the user's decision.

The grab interaction is necessary in order to allow the user to pick up an object, such as an apple or an alcoholic beverage, and bring it to their mouth in order to consume it. The poke interaction is necessary as there are buttons that need to be pressed in order to interact with the environment and timer. Besides the simple mechanics that these interactions provide, having the user interact with these objects in a realistic way allows for the application to present a higher level of realism. The presented realism of this application will amplify the effect of the experience, as the tie between a *real* action and a *real* consequence is an important one.



Transcript: "1. Find your way through the maze. 2. Come across an apple or beer. 3. Choose the apple? 4. Gain a minor boost for the duration of the playthrough. 5. Choose the naughty but tempting beer? 6. Gain a major, yet temporary boost, with an undesirable after-effect."

Technical Development Planning

The development of the VR application will be based on the **Unity engine**, utilizing **C# scripting** for functionality. By doing this the application will be able to utilise some key

libraries within Unity which will allow us to implement our ideas into the creation of the application.

The application will be created in Unity will run on the Meta Quest virtual reality headset. This will allow the user to feel like they are making the decisions and allow them to experience the application to its full extent.

The libraries that are going to be used are as follows:

XR interaction toolkit: this will allow us to add the desired interactions including both grab and poke. In turn this will allow for the users to feel more immersed in the virtual world.

Unity's physics engine: will allow the user to interact with objects such as walls and obstacles in a realistic way, immersing them deeper in the application.

Initial 3D Models

The application will predominantly use low poly object models as to reduce the stress on the devices thus increasing performance. The models do, however, need to be as realistic as possible so that the user can imagine that they are actually encountering objects such as beers and cigarettes in real life.



Low poly cigarette which will be used in the game as a short-term booster with long term side effects.



A model of the beer that will add a short-term boost with long term side effects.



Model of an apple to be a healthy option.

Conclusion

In Conclusion, this VR application aims to immerse users in a gamified experience where they can explore the consequences of their decisions regarding substance use and abuse or choosing a healthy alternative. By presenting a maze with a choice of two consumables like an apple or beer, the application is trying to show the concept of short-term gain versus long-term consequences, mirroring real life scenarios with substance abuse. The use of VR enhances the user's engagement by creating a realistic environment with physical interactions which adds to the learning experience. Through this interactive platform, users are encouraged to reflect on their decisions, with the goal being to create healthier habits and understand the difference in quality of life between substance abuse and a healthy lifestyle. The use of Unity, C# scripting, and the XR interaction Toolkit ensures the functionality and realism of the interactions, while the low-poly models and immersive design make the experience accessible yet impactful.

References

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