How does music affect your mind:

How visuals can affect the way people experience music

Team 40

New Mexico SuperComputing Challenge

Final Report

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Team Number: 40

School Name: Justice Code

Team Members: Chibuike Offor

Sponsor: Becky Campbell

Project Mentor: N/A

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Executive Summary

My project is about how visuals can affect the way that people experience music. On the surface level, it's basically how people would react to just music vs. a music video. I created this project to recreate an experience that I actually went through a while back. In those times, I didn't really like emo or goth themes and the music that usually went with them like heavy metal. I was introduced to a song by a relative, and when I listened to it I thought only good of it even though it already was leaned to the side of heavy metal. I saw a video on YouTube a little later for the music and while I watched it, I saw people swinging their hair around with black crows and other black things floating around. I instantly disliked the song because of the combined experience of the music and the visuals, so I want to see and test for myself how this happens.

Introduction

My Hypothesis is "How can visuals affect the way people experience music". I've done my research and I especially looked at emotions. I came up with this idea because all sorts of different emotions are created when listening to music. There's happiness, there's sadness. There's awe. All these different emotions come together to create the music experience. There are people who've done studies similar but not quite like mine. There was a group of scientists that were testing patients with a machine called an FMRI scanner and basically it looked through

their brains and helped to see certain changes in how they feel when exposed to certain types of music. In their test, they used 3 genres of music that I'll name Classical, Rock, Jazz. In the experience, they tested 30 - 50 people and their results ended up successful due to how they found what they were looking for in the people they tested. What I took from this though, was that all people's music tastes are a matter of preference, and my current understanding of when it's mixed with visuals is that it amplifies the emotions created from just music for(better or worse) by imposing the author's purpose and meaning for that song on the listener.

Computational Model

 Selection

I chose to use roblox studio for this project because it's something that I'm accustomed to, also that it has easy to use free plugins and software for many projects.

 Visualization

My model is basically an animation created by me with a music sample also created by me put to get together and shown apart.

 Modification

I don't really plan to modify my idea of what I'm going to do very much.

 Limitations

I'm limited by time due to the fact that animations take a little bit to make, especially if you want to make them good. There are also a lot of tasks that I need to finish all on my own because I'm a solo team.

Solving Method

Project Plan

I plan to execute my project plan by creating 2 music samples and two cutscene animations. I will create a survey or emulate one by other means and I'll be testing for the certain emotions that people get from that. First, I'll have them listen to just the music, then the music combined with the visuals. Then I'll receive input.

Conclusion

To conclude, This project is one that doesn't necessarily answer a question, but one that looks into a possibility for awareness. Also It's mostly a project done for the purpose of looking into a topic that I think is cool. This project is a work in progress. In the future, I plan to look further into the possibilities for this project. I promise that I will come back to SCC with a finished project.

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Appendix: Code

```lua
-- Services
local ReplicatedStorage = game:GetService("ReplicatedStorage")
local RunService = game:GetService("RunService")

local CodesOtaku = ReplicatedStorage:WaitForChild("CodesOtaku")
local CutsceneModule = CodesOtaku:WaitForChild("CutsceneModule")

repeat wait() until workspace.CurrentCamera -- Wait until camera is found
-- Constructor

local Camera = workspace.CurrentCamera
local Looping = false
local Speed = 1
local FreezeControls = false

-- Loading
local CutsceneFolder = workspace.Cutscenes:WaitForChild("Video") -- The folder that contains the cutscene data (Cameras...)
local Destroy = true -- Destroy folder after loading? you don't want your player to see your cameras floating around!
local NoYield = false -- Generally you want this to be set to false, because loading takes a little bit of time, and you don't w
local SafeMode = true -- This is adviced to be turned on, especially if the cutscene folder data is too big to load at one frame

local Cutscene = require(CutsceneModule)

local Demo = Cutscene.new(Camera, Looping, Speed, FreezeControls) -- Create cutscene
Demo:Load(CutsceneFolder, Destroy, NoYield, SafeMode) -- Load cutscene data from folder

local PlayOnPartTouch = script:FindFirstChild("PlayOnPartTouch")
local PlayOnPlayerJoin = script:FindFirstChild("PlayOnPlayerJoin")
local PlayOnCharacterAdded = script:FindFirstChild("PlayOnCharacterAdded")
local PlayOnCharacterDied = script:FindFirstChild("PlayOnCharacterDied")
local PlayOnEventFire = script:FindFirstChild("PlayOnEventFire")
local PlayOnRemoteEventFire = script:FindFirstChild("PlayOnRemoteEventFire")
local ProtectTheCharacterWhilePlaying = script:FindFirstChild("ProtectTheCharacterWhilePlaying")
local CharacterProtector = script:FindFirstChild("CharacterProtector")
local Music = script:FindFirstChild("Music")
local StopMusicWhenFinished = script:FindFirstChild("StopMusicWhenFinished")
local StopOnEventFire = script:FindFirstChild("StopOnEventFire")
local StopOnRemoteEventFire = script:FindFirstChild("StopOnRemoteEventFire")
local PlayOnce = script:FindFirstChild("PlayOnce")
local Debounce = script:FindFirstChild("Cooldown")
local OnFinishedRemove = script:FindFirstChild("OnFinishedRemove")
local bin = true
local Player = game:GetService("Players").LocalPlayer
local CutsceneGui = script:FindFirstChild("Cutscene")

-- Cutscene duration in seconds
local duration = Demo:GetDuration()
-- Check the module script for more functions and then do like this "Demo:FunctionName()" like the above example of duration

-- a better alternative implementation for the wait function
function wait_time(duration)
```