Dance^2 Circumvolution: Game Design Document

'Will you become a disco demon, a b-boy boss, or a freestyle freak?' – **Roland Salvador**

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1 Game Overview

Title: Dance^2 Circumvolution
Platform: PC
Genre: Rhythm Game
Rating: (E for Everyone) ERSB
Target: Casual gamer (aging from 5+) or serious gamers
Release date: December 2021
Publisher: rol& Studios

Dance^2 Circumvolution is a single-player rhythm game where the player must press the corresponding arrow key at the correct timing. Typically, these arrows or "notes" are pressed to the beat of the song that is playing and difficulty will vary from map to map. Beware, if the player misses too many notes or is off beat for too long, they will fail the stage! Traditionally, this game is played at arcades with the player using their whole body and feet. However, Dance^2 Circumvolution is meant to be played on the keyboard in the comfort of your own home!

2 High Concept / Genre

Dance^2 Circumvolution is a rhythm game that sets the player into an arcade-inspired screen where many arrows (notes) will travel down the screen, and the player must hit the corresponding arrow key at the bottom of the screen at the correct time. It may sound simple at first, but as you progress through the game, the song and notes will get faster and faster! Choose from a variety of songs to play! Your favorite arcade game is now, quite literally, at your fingertips!

3 Unique Selling Points

➢ Catchy songs that will be stuck in your head
➢ Tons of re-playability as you and your friends try to beat each other's high score
➢ Classic and nostalgic gameplay

4 Platform Minimum Requirements
PC: A functional PC is required

5 Competitors / Similar Titles
This game is directly inspired (a rip-off of) Dance Dance Revolution and StepMania.

6 Synopsis

Deep inside of us, we all have the urge to jam out to our favorite songs. Are you too busy to go to the arcade? No problem! Launch Dance^2 Circumvolution on your PC and vibe all night long!

7 Game Objectives

The objective of the game is to hit the arrow as close as possible to your arrows at the bottom.
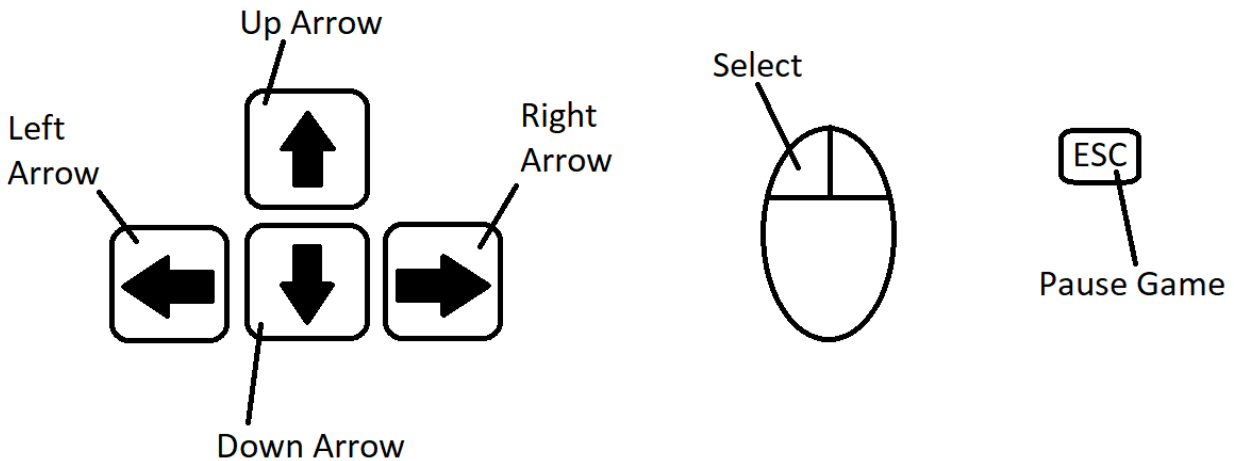
8 Game Rules

The player must try their best to stay on beat and not miss too many notes. The window for error depends on the difficulty of the current stage. The better your timing, the higher your score. The more notes in a row you hit, the higher your combo, and the more you score.

9 Game Structure
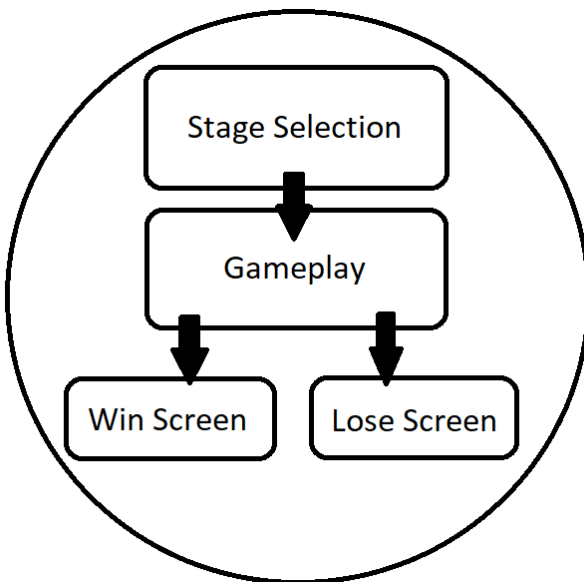
10 Game Play

Game Controls

HUD

The player's input name will be shown in the top-left corner in the color that they chose. If the player did not choose a name, it will default to "Player." If the player did not choose a color, it will default to white. The red bar at the top-left corner is the player's health bar.

In the middle of the screen at the top, there will be four arrows indicating left, down, up, and right. This is where you must match the arrows/notes and hit the corresponding button.
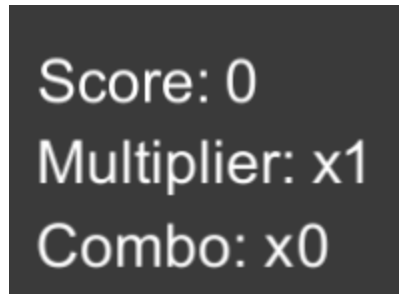
In the bottom-left corner of the screen, the player's score, their current score multiplier, and their current combo will be displayed.
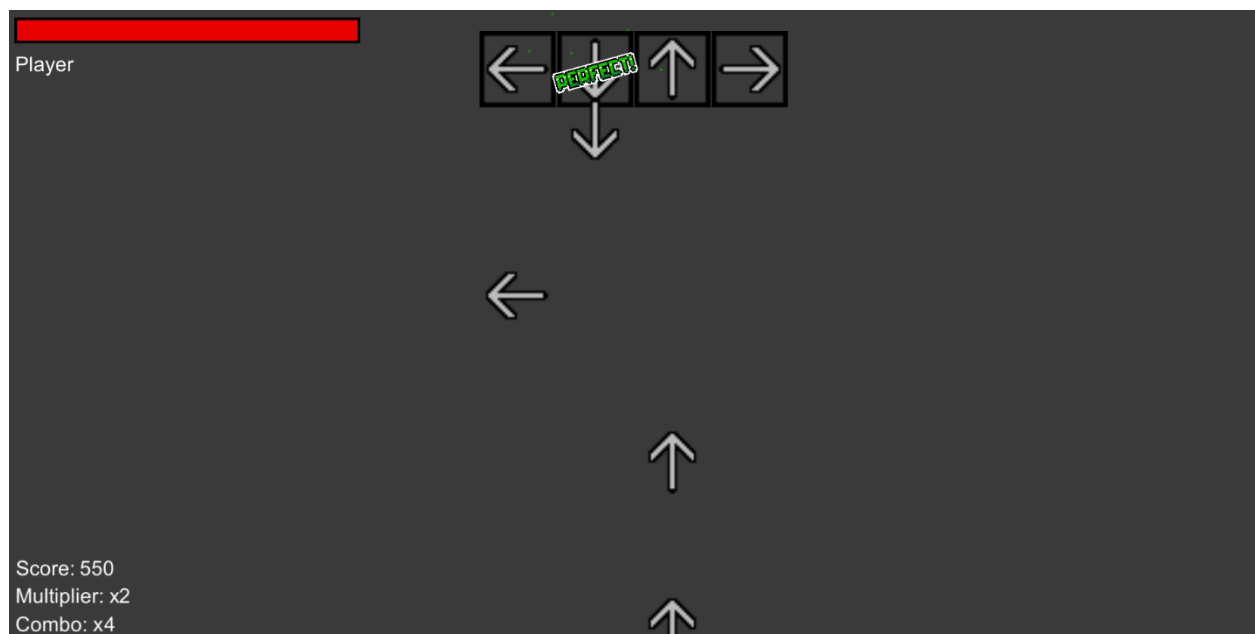
11 Art

Each arrow has a pressed and unpressed sprite.

Each type of hit (Hit, Good, Perfect, and Miss) have a sprite.

Level Design

The level is a simple screen with the HUD elements outlined above.
The notes (arrows) will spawn from the bottom of the screen and scroll up to the player's own arrows.

Audio

StreetLove.wav – Background music, plays during Easy stage
Stupid_Dancer.wav – Background music, plays during Hard stage
Zephyr.wav – Background music, plays during Medium stage
mixkit-player-jumping-in-a-video-game-2043.wav – Note hit sound

12 Wish List

Note storage
In a future update, it would be nice to implement a way to store notes instead of generating them randomly (.MIDI or .sm file). This would help other players create their own note maps and easier tailor the notes to the beat.

More difficulties per song
Currently, there is only one difficulty per song. In a future update, it would be nice to add multiple difficulties for each song (Easy, Medium, Hard) for more diversity of play.

13 Bibliography

Made by me (Roland Salvador):
Sprites:
Arrow.png
Arrow_Down.png
Arrow_Left.png
Arrow_Right.png
Arrow_Up.png
Button_Down.png
Button_Down_Pressed.png
Button_Left.png
Button_Left_Pressed.png
Button_Right.png
Button_Right_Pressed.png
Button_Up.png
Button_Up_Pressed.png
Game controls.png
Gamecompanylogo.png
whitePixel.png

Made by Rizwan Ashraf (Unity Asset Store):
Audio: https://assetstore.unity.com/packages/audio/music/free-music-tracks-for-games-156413
StreetLove.wav
Stupid_Dancer.wav
Zephyr.wav

Made by mixkit.co (external website)
Audio: https://mixkit.co/free-sound-effects/game/
mixkit-player-jumping-in-a-video-game-2043.wav

Made by geralt on pixabay.com (external website)
Background: https://pixabay.com/illustrations/cheers-pleasure-poor-community-204742/
cheers-gedaf36996_1920.jpg

Made by gamesplusjames on youtube.com (external website)
Sprites: https://www.dropbox.com/s/o7v67gjjohwx999/RhythmTutorial.unitypackage?dl=0
effects.png
Code Tutorial Videos:
https://youtu.be/cZzf1FQQFA0
https://youtu.be/PMfhS-kEvc0
https://youtu.be/dV9rdTlMHxs
https://youtu.be/Oi0tT7QnFhs

https://youtu.be/Usuh7WUAPbg

The code for scripts ButtonController, EffectObject, NoteObject, and many
parts of GameManager are from gamesplusjames tutorials.
All the code that was taken or inspired from the tutorials are in the videos themselves.
Hitting the notes and configuring their hitboxes, playing the music and missing notes,
calculating and displaying score and their multipliers, timing hits for better scores,
and showing results and ranking are the prominent aspects of the game that were taken
or inspired by the tutorial.

However, everything else, such as the UI, SceneController, PrefabScroller, PlayerData,
HealthBarController are things that I have created myself and figured out. This includes
the pause menu, stage select, and main menu and title screens.

It is worth mentioning that instead of gamesplusjames way of displaying and holding notes
was not used. Instead of putting all notes directly onto the scene, I instead configured
my own way of spawning note/arrow prefabs randomly every 1 second.

Please let me know if I am required to cite the exact code that I used from gamesplusjames
tutorials, as I am not deliberately trying to pass off most of the game's mechanics as
my own.