

Android Pong Game Design Document

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1 Game Overview

1.1 Concept

Table-tennis like competitive game.

1.2 Genre

Classic Arcade Game.

1.3 Target Audience

Your senile grandmother.

1.4 Game Flow Summary

Menu Offers single- and multiplayer Options.

Game Playing the game.

Pause Option to Resume, Restart, or Quit.

1.5 Look and Feel

Classic arcade game, complete with 16-bit sound effects.

2 Gameplay & Mechanics

2.1 Gameplay

2.1.1 Progression

As time elapses since the last point scored, the ball accelerates to ∞ . Incremental acceleration occurs upon each paddle-ball collision.

2.1.2 Objectives

Bounce the ball out of bounds on the opposing side to score a point

2.2 Mechanics

2.2.1 Objects, Physics & Movement

Ball Constant velocity except when accelerating on collision with paddle. Bounces across norm of collided surface.

Paddle Vertical movement only. Has mass \rightarrow inertia (ie. Maximum rate of acceleration).

Walls Top and bottom of screen only. Has collisions.

Score Counter Positioned on the top of the screen, on the left and right of the Vertical Divider for P1 and P2, respectively.

Vertical Divider Aesthetic purposes only. No collisions.

2.2.2 Actions

Paddles follow movement of touch. Left paddle follows touch input on left side, Right paddle follows right.

2.3 Game Options

3 Interface

3.1 Visual System

3.1.1 Menu

Text enclosed in a box.

Singleplayer Player takes P1 paddle, AI assumes control of P2. Difficulty option presented. Difficulty = Easy, Medium, Hard, Impossible.

Multiplayer Competitive multiplayer. Both paddles receive input from touch on their respective sides of the screen.

3.1.2 Pause Menu

In game, tap the option button to open the pause menu.

Resume Unpause the game

Restart Restart the game

Quit Exit the game.

3.1.3 Game Interface

Play area is entire screen. Can play in landscape/portrait, and alternate during play. Bar bisects play area along shortest edge. In landscape, score sits just under top of screen, adjacent to the dividing bar. In portrait, score lies above and below bar on right hand side. Pause menu activated by tapping pause button.

3.2 Control System

Bar bisects play area into A_1 and A_2 . Paddle P_i follows touch input in area A_i . Paddle.Y always equal to Touch.Y, so the player can tap to snap (within acceleration limits) the paddle to desired position.

3.3 Audio, Music & Sound

- Ball bounces of any object.
- Ball out of bounds.
- Any button pressed.

4 Artificial Intelligence

4.1 Opponent

$\text{Paddle.Y}_t = \text{Ball.Y}_{t-X}$ where X is a fixed time delay for some difficulty. On easy difficulty, the time delay is large. On impossible, there is no delay.

5 Technical

5.1 Target Hardware

Android