Square Circle

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March 19, 2015

Game Description

Square Circle is a simple game where the user has to avoid the square by moving the circle. The user can tap on the screen or drag the circle to move it. The user has 3 lives. The longer he/she is able to stay alive the more points they get. There are 4 places were a square can spawn from. The top, right, bottom or left sides of the screen. There are 15 different stages of the game. In each stage there is a different combination of active spawners. Those we arrived at 15 stages by some simple combinatory.

Even though there are 15 different stages, this game is never ending. If the user some how manages to reach the last stage the game will repeat itself but with the same difficulty as the previous stages.

The difficulty of the game will be calculated using a mathematically function.

This function is the sum of the difficulty of each spawner.

The difficulty of each spawner depends on the sum of 2 variables. These are the velocity of a square and the spawn rate of each spawner.

The velocity and the spawn rate are both a function of time that includes an extra user variable that is calculated by learning from previous game attempts.

The user variable is used to increase or decrease the change in rate of the function to make a more playable game. For examples some users may be very good at the game so they may want a more challenging experience. Whereas some users may not be good at the game so they may want less of a challenge. By adding this variable every user’s game experience will be different and suited for that user.

Problem 1:

This problem arises when the stages of the game changes. Throughout the game we want to increase at some constant rate, but we may not want to always be increasing. For example, stage 5 is the first stage where 2 spawners are active at the same time. If at stage 4 spawner is active with a difficulty , and stage 4 changes to stage 5 where spawners and are active, then must decrease so that is close to zero. We do not want to increase immediately to because then would double, which could cause the game to be all the sudden very difficult.

Problem 2:

This problem is like problem 1 but instant involves and . We do not want to be a huge difference because this could lead to a lot of squares that are spawning but moving very slowly. This causes an increase in the density of squares, which decreases the empty space making it very hard to avoid squares, even if they are moving very slowly.