Team Project – Ddong Game

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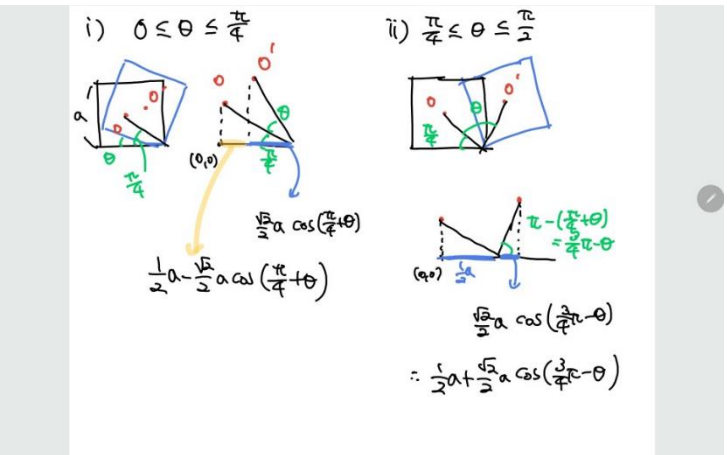
My team name is “Bonin Teamone Saengkinun Sangsangham”, which means I thought I have a team member but it never happened. I named my game as “Ddong Game” as it is so hard to complete perfectly.

1. Game explanation

This game is rhythm game. Through the music, the square goes forward automatically. But there are some obstacles, some boxes and footsteps not replaced horizontally. So, delete boxes by space bar and replace footsteps horizontally with arrow key and get score! Going step by step, if there’s no obstacles, you get 200 points and if not, you lose 500 point.

2. Implementation



As square is going forward by rolling, I need to calculate the points. Calculating is similar with calculating points of cycloid. Translation_matrix changes along that points and rotation_matrix also

changes through angle. If square enters next step, square's z and step's z goes slightly down to represent moving.

While square moving, steps' translation also changes. I used only 8 steps. The steps which square passed moves forward by changing translation_matrix.

To make obstacles, I first read map data from map.txt. In map.txt, there are two digits numbers and they are separated by blank. The first digit refers step's angle, and the last digit refers obstacle box's size (2 is bigger one, 1 is normal one and 0 is none). Through that data, I placed obstacles.

The most difficult thing of this project was synchronizing music and the game. The music I chose is NCS(No copyright sound) and cut to appropriate length. That song's bpm(beats per minute) is 174. So, every 0.17 seconds, square should go forward (8-bit rhythm). My program updates and renders every 0.005 second. So I made one cycle to 35 ticks.

There are some actions in each tick. When the tick is 3, check whether there are any obstacles in now footstep. The actions at 0,1,6 is for natural moving of square. If tick is 34, which is the last tick of a cycle, check whether map data is empty. If not, place foot step forward, and set data to keep moving.

3. Difficulty

Although my implementation is based on time, not frame, there are several differences in music timing. And sometimes the synchronization not fit so well.