



Dance Dance Revolution

Final Project Documentation

Group Member

Yuci Zheng

Michael Qi

Ye Zhang

Allison Zhao

Sue Liang

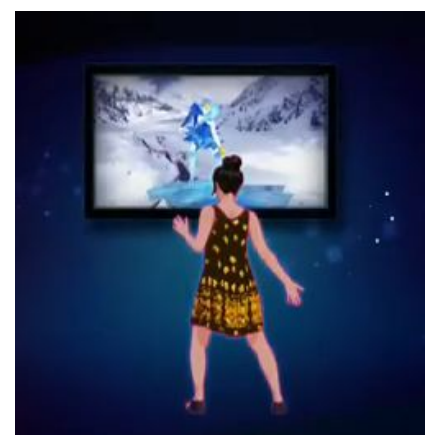
Project Proposal

For our final project, we decide to make a game that simulates [Dance Dance Revolution](#). Mackey Mackey will be used as a physical controller that tracks the player's steps in order to score, and Leap Motion hand sensor or Microsoft Kinect will be used to track the player's arm movements to switch mode or songs. We will also implement a live camera that features the player during the play. We would also like to fulfil some add-on effects such as "dressing up" the player (i.e. in costumes) by applying the face tracking functionality of the live cam.

Goals

Arrows with random directions will slide down to the screen. If the player steps on the correct arrow key, score will be added. If missed or stepped wrong, score will be deducted till the mission is failed and game over.

Sample screens:



Proposal update #2

1. Figure out group member's schedule and division of work over the break - categorizing the code we need to write and assign them accordingly (user's' hand motion, feet motion, music, arrow design, background and aesthetics)
2. Test out Kinect
3. Find music that works for our project and figure out how to design arrows corresponding to tempos/rhythms
4. Figure out if there are existing code that we can build upon

Proposal update #3

1. Finish writing code for object tracking as the first step of the project as well as assignment #7
2. Write out code for objects of fruits to randomly "fall from the sky" in order for the user to slice with both hands and get points
3. Planning to work with Spencer/Craig in terms of how to design the dynamics of the arrows (users will use feet motion with arrows)
4. Continue to find music suitable for the project - slow? upbeat? what genre?
5. Finished making the Makey Makey board - good to go

Final Documentation

1. Finish all code writing on Processing, which includes:
 - 1) A main program with 6 game states (easy mode, normal mode, hard mode, how to play screen, choose song screen and game over screen)
 - 2) Class of Arrows
 - 3) Class of an Golden State that utilizes hand motion detecting - letting users 'kill' the stars with their hands to gain extra points
 - 4) Classes of hand motion detecting for choosing albums and 'killing' the golden stars

2. Finish making the physical interface with Makey Makey boards
 - 1) Four step-ons indicating all directions of arrows (up, down, left, right) are made. Each of them consists of two cardboard with quarter coins attached in the middle as a 'touching point' for electricity to go through, and around the coins are sponges that act as a padding between the two cardboards - hence when the user steps on the cardboard, the sponges will squeeze together and the two coins will touch each other - electricity goes through and the connection to Makey Makey board is made.
 - 2) Strings of paper clips are used to as wires to connect the step-ons with the Makey Makey board

3. Challenges that we have faced including mirroring the live video when two hand motion detector are used; adding a countdown screen with an opening introduction video; adding a game over state when the song is over; having the capability of counting points and misses to trigger Golden state for users to gain extra points and many more smaller technical issues we have solved along the way.

4. Reflection: The game is hard to set up in class during presentation due to time and space limitations, but we have tried playing it on our spare time and it works perfectly with enough space - everyone had great fun during this project and we all learned a lot :)

Photos and Video Documentation

