Technical University of Denmark

02515 Health Care Technology

1st Group Report

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November 4, 2014

Progress

Things that are going well

The brainstorm has been going good and we have decided on an idea that is within our competence and timeframe to implement. We have created the basis for the main scene in the game and are preparing to incorporate the kinect.

Things that are not going so well

We have no person with a health care background in our group. We would like to do a fitness project that helps people do the exercises properly, but this is hard to do since there are no specific rules for the exercises in the sense that the knees for example should be at a certain angle during squat.

Any changes in the project

We may change the requirement and test specification during further development of the project. Our current requirements and test specification are satisfying, but they might not be thorough enough.

Brief summary of what has been done since last report

Nothing since this is the first report.

Description of application

The application is a game where the player has to avoid certain obstacles. The obstacles will come at the player and then the player has to jump or duck to avoid hitting these obstacles. Hitting an obstacle would end the game. The speed of obstacles to avoid would become faster and faster during the game.

Benefits of application

The application has an exercise purpose. The squatting down and jumping would cause the player to have a higher pulse as these are hard exercises.

Short litterature study

"The evaluation of physical activity recommendations: how much is enough", May 2004, Steven N Blair, Michael J LaMonte, and Milton Z Nichaman

"Comparison of loaded and unloaded jump squat training on strength/power performance in college football players", November 2005, Journal of Strength & Conditioning Research.

Requirements specification

Requirement	Need	Nice
Start & setup time	1 min	30 seconds
Performance measurement	Report performance	Adapt level of difficulty to performance
Room requirements	Room with no furnitures	Does not matter with furniture
Recognize jumping	Recognize a jump	Recognize the jump's height
Recognize ducking	Recognize a squat	Recognize the player laying on floor

Test specification

Test	Need	Nice
Start & setup time	1 min	30 seconds
Pulse	20% higher pulse than by start of game	35% higher pulse
Performance	Performance is reported	Difficulty of performance is adapted to the performance
Jumping	Jumping is recognized	Height of a jump is recognized
Ducking	Ducking is recognized	Lying down is recognized
User interface	User is instructed and can play	User can play without instructions

Split of workload

We are both studying computer science and have therefore experience with programming. Therefore we will both work on the implementation of the game. The data analysis and the theoretical parts are also divided 50/50 between us.

Ideas on what group the applications should be tested on

We were thinking on testing this game on groups of kids in elementary school, middle grade (3rd to 6th), higher grade (7th to 9th) and also a group of teachers. Daily exercises are being incorporated into the elementary school, we therefore believe that supplying games where the kids can compete and improve, could be beneficial and increase their interest in the exercises. We know a teacher that has agreed to help us gather these groups. The setup and user interface of the game will also be tested on all the groups, this can help us identify if there are certain areas that need to be more intuitive for some of the groups.