Project Charter
CSE 4316: Senior Design I
Fall 2017

Team APT
Automated Personal Trainer

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Revision History

Revision	Date	Author(s)	Description
0.1	09/20/2017	KJM	Document creation
0.2	10/02/2017	KJM, IS, CN, KJ	Complete draft

Contents

1 Vision

The Vision of this project is to provide people with a proper form and technique for each workout. It is very important to maintain a proper form during workout exercises to prevent injury. A proper form also ensures correct muscle targeting and breathing techniques during reps and sets. This is essential for weight training exercises because it helps to generate more force and reduce the chance of heart problems, aneurysms and severe increases in blood pressure.

2 Mission

The Mission of this project is to build an affordable automated fitness trainer for commercial as well as personal household use that utilizes a 3D camera to analyze the form of the person working out and provides them feedback based on video and application data.

3 Success Criteria

The success criteria of this project will depend on the functionality of the trainer that can be boiled down into points.

1) Functional skeletal tracking to provide accurate feedback of workout form.
2) Successfully analyze recorded data and provide progression statistics.
3) Allow users to track their progress through intuitive U.I.

4 Background

An iOS and Android Application that utilizes cameras for skeletal tracking in order to analyze and provide feedback to user during their specified workouts.

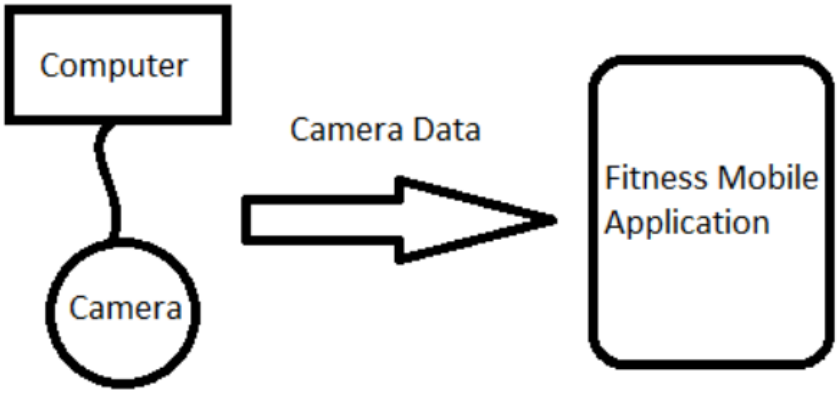
5 Related Work

Reflection Health (http://reflexionhealth.com/) is a company that provides skeletal tracking for therapy reasons using the Kinect. Reflection Health only

deals with therapy related work so they lack the application abilities of more mainstream activities such as recreational weight training.

Jintronix (http://www.jintronix.com/) is a company offering therapeutic services based on skeletal tracking with the Kinect. Instead of traditional real time feedback this app provides feedback in the form of a video game to be more engaging. This product lacks the real time feedback that a mainstream user would require and is also not geared to the mainstream crowd.

6 System Overview



7 Roles & Responsibilities

Product Owner: Cuong Nguyen
Scrum Master: Kristoffer Jorge-Munoz
Developmental Team: Issac Sanchez & Kritika Jaine
Stakeholders: Alex Nunnally, Team APT, Dr. McMurrough
Sponsor: Alex Nunnally
Mentor: Dr. McMurrough

8 Facilities & Equipment

The project will be built and worked on at the Engineering Research Lab building in the University of Texas at Arlington.

9 Cost Proposal

9.1 Preliminary Budget

Mini PC: 200 - 300
Microsoft Xbox One Kinect Sensor: 50.00
Microsoft Xbox One Kinect Adapter: 40.00
Product Material: TBD

9.2 Current & Pending Support

The spending limit for this project is $800, supplied by the university. In addition to this, any money will be provided by the sponsor, to which the limit has not yet been discussed.

10 Documentation & Reporting

10.1 Project Charter

The project charter will be actively updated.

10.2 Product Backlog

The product backlog will be updated every sprint.

10.3 Sprint Planning

The team will have a meeting at the beginning of every sprint to plan the for next sprint.

10.3.1 Sprint Goal

Each goal will be decided at the sprint meetings.

10.3.2 Sprint Backlog

The sprint backlog will be created during the sprint meetings.

10.3.3 Task Breakdown

The team will assign tasks to each team member at the sprint meetings.

10.4 Sprint Burndown Charts

The sprint burndown charts will be analyzed after every sprint.

10.5 Sprint Retrospective

What did we get done?
what should we keep doing?
What should we change?

10.6 Individual Status Reports

These aren't necessary, are they?

10.7 Engineering Notebooks

Each team member will be responsible for his/her engineering notebook. Team members will sign off each others notebooks every week.

10.8 Closeout Materials

Materials.

10.8.1 System Prototype

This will be completed at a later stage.

10.8.2 Project Poster

This will be completed at a later stage.

10.8.3 Web Page

This will be completed at a later stage.

10.8.4 Demo Video

This will be completed at a later stage.

10.8.5 Source Code

This will be completed at a later stage.

10.8.6 Source Code Documentation

This will be completed at a later stage.

10.8.7 Hardware Schematics

This will be completed at a later stage.

10.8.8 CAD files

This will be included at a later stage.

10.8.9 Installation Scripts

READ ME will be created at a later stage.

10.8.10 User Manual

This will be completed at a later stage.