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| Student Name: Andrew Daly | Student Number: C11710699 |
| Project Title Home-based rehabilitation system using motion capture with Serious Games | |
| Summary (approx 200 words) Home based rehabilitation system using the Xbox Kinect 2.  Exercises suited for patients with Cardio-Vascular Diseases  User must perform exercises in front of the Kinect, Exercises are played out on the form of a game, different exercises are provided and patient’s heart rate is monitored.  System is also connected online to the cloud for patient’s doctor to view, Doctor views how well exercises are performed and also keeps up to date with the patient without the need of continuous doctor visits.  Serious games can be thought of as any game based interfaces that have been designed for any purpose other than entertainment.  Rehabilitation in areas of Cardio-Vascular Diseases and Monitoring Heart-rate  Exercises may include: Squats, Jumping Jacks, Various Stretches and Basic Body Movements, etc. | |
| **Background (and References)**  Full body interaction for serious games in motor rehabilitation  http://dl.acm.org/citation.cfm?id=1959830 | |
| Proposed Approach I plan to use the Unity Game Engine, to implement the Game Play Part of the Game, using the Kinect 2 SDK for the motion capture of the player, written in C#.  I then plan on Using Visual Studio to create a Graphical Application for Doctors to view to check on patient’s progression and connect it to the cloud with Windows Azure | |
| Deliverables Patient Rehabilitation Game, Doctor Patient Check System | |
| Technical Requirements Hardware: PC, Kinect 2  Software: Unity, Microsoft Kinect 2 SDK, Visual Studio, Windows Azure | |

## Project Reviews – Please include reviews of two of LAST years projects from your programme.

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| **Project 1**  **Title:**  Virtual Reality Self Defence Simulation  **Student:**  Ríana Roche  **Description (brief):**  Using the Oculus Rift along with Motion Capture to simulate a Self Defence Scenario  **What is complex in this project:**  Motion Capture, Gesture Recognition  **What technical architecture was used:**  Oculus Rift  Kinect For Windows  OpenNI  **Explain key strengths and weaknesses of this project, as you see it.**  Oculus Incorporation, Gesture Recognition | |
| **Project 2**  **Title:**  Irish Sign Language with Xbox Kinect  **Student:**  Aisling Orr  **Description (brief):**  Using the Kinect to incorporate sign language  **What is complex in this project:**  Sign Language Gesture Recognition  **What technical architecture was used**  Kinect  Processing  **Explain key strengths and weaknesses of this project, as you see it.**  Gesture Recognition  All Hand Gestures of Sign Language | |
| Proposal Sign off:Lecturer Comments | |
| **Student Signature** | **Date** |
| **Lecturer Signature** | **Date** |