

Free Sky

*The sky is not the limit but your
playground*

Autism Virtual Reality Project

Membes

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Faculty

Sponsor

Dr. Lucas Stephane

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Client name

Affiliation: The Scott Center for Autism
Treatment

Goal

The goal of the project is to create a system to assist in the training of the Scott Center therapists. With the use of our system as a training platform, the ultimate goal is from them to provide a more efficient and comprehensive way in aiding autistic kids. While some attempts to monitor individuals with autism were carried out, there are few that aim to train individuals with the right

Motivation

Our motivation is to assist with the progression of autistic treatment by using a serious gaming platform. As we realize with the increase in technology we can now provide training for monitoring and aiding people with disabilities better.

Features:

Trainee

- Keeping Therapist Engaged - Based on the treatment needed by autistic patients the game levels which will change and provide unique challenges to keep interest
- Positive Reinforcement - A grading system will be included for trainee to see improvements and area of improvements
- Trainee Plan Access - The Trainee will be able to access the trainee plan their Trainer member assigned to them in a gamified form.

Trainer

Accessing and analyzing Trainee data is important for caregivers, so it is equally important that they have several options such as:

- Individual Profile
- Comparing Profiles, e.g. How is Gavin doing compared to Alanah

Progress assessment

- Feedback from the Trainee : How much they are enjoying the process
- Lowest Mean test scores for different categories: e.g. why is everyone scoring low in Hand gesture recognition? is it too hard...
- Highest mean test scores: Is this measurement method too easy?
- Have Trainers be able to put notes on trainees account to help future trainers and trainee move forward better

Technical Challenges: Discuss three main CSE-related challenges:

- The learning curve associated with developing a serious game related to healthcare. We all currently have limited experience in Unity
- We have no experience as it relates to database management and have to learn as we develop using an agile development framework, e.g. Scrum
- This is the first user-driven system that any of the team members are facing; therefore, we need to perform an in-depth state of the art related to users, patients and technology in order to identify the best way to build our system

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Milestones :

Milestone 1 (Sep 30): itemized tasks:

- Have a sit-down meeting with both our faculty sponsor and the Scott center to create full requirements documents outlining exactly how each aspect of the platform is supposed to work
- Have a development platform be chosen and have a small simple animation environment be setup in Unity where the user can look around
- Have an Entity relationship diagram created to have a physical layout for the database
- Select all the tools needed for animation and ensure that it is compatible with the game development platform
- Create a test plan for testing all aspects of each game level focusing on user interactions
- Create a design document with our faculty sponsor
- Host a test run with the Scott Center therapists and consolidate the requirements document, making changes where necessary

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Milestone 2 (Oct 28): itemized tasks:

- Create and test writing and retrieval queries to/from a database, and specifying and implementing the caregiver forms for patient assessment linked to the game
- Create and implement customized accounts that adjust user experience for each user, e.g. name display,
- Create and test avatars in the game development environment
- Outline requirements for grading scheme and possibly have a focus group with the Scott Center therapists trainee's

Milestone 3 (Nov 25): itemized tasks:

- Create a Functional level and be able to test the data collection aspect and Reward system
- Host a test run with the Scott Center therapists and consolidate the requirements document, making changes where necessary
- Create and test filter options for data on each patient information, as requested by the therapists
- Create a simple individual platform for the therapist that is linked to the

patient database

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Task Matrix

Task	Gavin	Alanah	Jiaqi
Requirements Document with Scott Center for each aspect	Focus and write the Therapist and Main Database aspect of the document	Focus and write the Rewards System Avatars aspect of the document	Focus and write the Child user aspect of the document
Choose Development platform	Unity research	3d vista research	Copper cube research
Developing a test demo	Working with the creation of the camera for the user looking around the area	Creating and Importing test environment plugin	Importing and testing sprite/avatar plugin
Database ER diagram	Design	Review and Adjust	Review and Adjust
Create a Design Document	Write 40 percent of the design document	Write 20 percent of the design document and review for any adjustment	Write 40 percent of the design document
Deciding on Animation Tools	Look into photoshop and other adobe products offered by adobe	Talk to an expert in the field on other alternatives	Research any other animation tool not mentioned
Creating a Test Plan	Responsible for 20 %write up and	Responsible for Writing 40 % of	Responsible for Writing 40%of

	review and adjustment	the test plan	the test plan
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Approval from Faculty Sponsor

"I have discussed with the team and approve this project plan. I will evaluate the progress and assign a grade for each of the three milestones."

Signature: _____ Date: _____

Approval from Client

"I have discussed with the team and approve this project plan. The requirements meet my required needs of the software"

Signature: _____ Date: _____