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# Free Skies

## Autism Virtual Reality Project

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# Recap

- VR training application
- Client - The Scott Center for Autism Treatment
- Faculty Sponsor - TBD
- We are using Unity and the Oculus Go

# Goal and Motivation

- The goal is to create an training system to assist the training of the scott center therapist. The ultimate goal is to provide a more efficient and comprehensive way in aiding the children with autism.
- Our motivation is to assist with the progression of autistic treatment by using a serious gaming platform. The advancement in technology can now provide training on monitoring and aiding disabilities better.

# Key features (Trainee)

- **Keeping Patients 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
- **Training Plan Access** - The Trainee will be able to access the training plan their Trainer assigned to them in a gamified form.

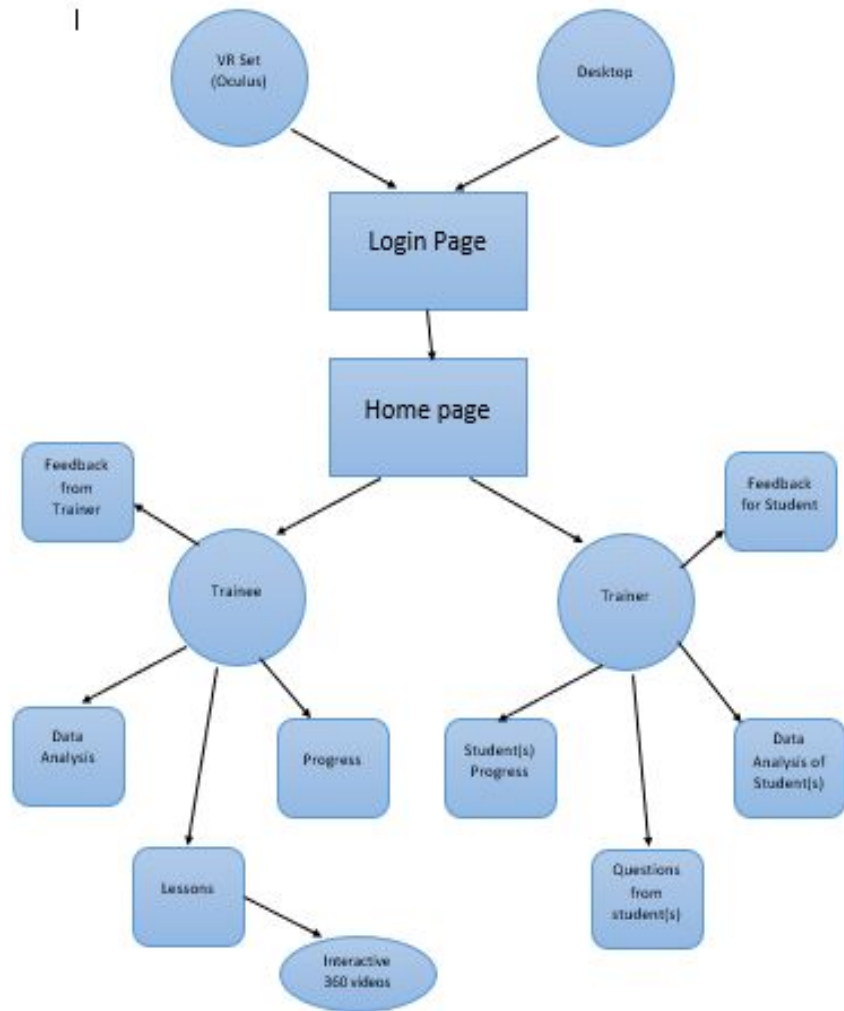
# Key features (Trainer)

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

- Individual Profile
- Comparing Profile, eg: 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 categorizes: 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

# Novel Features

- Virtual Reality feature
  - An immersive 360 experience.
  - Includes:
    - 360 video
    - interactive button(s)
    - trainer's feedback
    - learning progress
    - data analysis.



# System Architecture Diagram

# Evaluation

- Our success is for the trainee to actively learn from the training videos
- To measure that we can administer two tests:
  - A test before using the training videos
  - A test after using the training videos



# Progress Summary

Module/feature	Completion (%)	To do
Work on System Architecture	100%	Nothing
Work on putting buttons in oculus	50%	They are currently in the environment but refuse to show up so have them show up
Makes questionnaires to ask	65%	Need to finish up the rest of questionnaires
Have timer code for questionnaire	100%	Have the buttons show up so we can test it
Work on database	30%	Currently Cannot find a current feasible way so might change platform,

# Technical Challenges

- Database
- Buttons showing up where they are anchored
- Linking both the VR system and desktop system

# Milestone 4

- Consider changing platform from oculus to samsung as technical challenges with both database and images showing up
- Get the buttons that are placed in the 360 environment to show up whether it be on unity oculus or samsung vr set
- Talk to the scott center about the changes
- Create desktop application
- Put questionnaires in the video
- Continue to work on the application of Database

# Milestone 5

- Continuing working on training aspect
- Finish trainee aspect to have a small demo ready
- Talk to the scott center about the changes
- Start working on poster
- Start working on final presentation
- Test filter on data
- Work on user accounts

# Milestone 6

- Ensure Senior design poster is done
- Finish up any small bugs in systems
- Test oculus platform with willing participants
- Submit to the scott center
- Have senior design presentation set up

# Task matrix for Milestone 4

Task	Gavin	Alanah	Jiaqi
Create the user screen	Review and adjust (20%)	Create the trainer screen (40%)	Create the trainee screen (40%)
Put questionnaires in the video	Review and adjust (20%)	Make sure the questions show up on the oculus (40%)	Put the questions in the video and make them pop up on a certain time (40%)
Continue to work on the application of Database	Work on the database component (33.3%)	Work of gaining all resources for testing (33.3%)	Working on coding the platform for the testing (33.3%)
Create desktop application	Review and adjust (20%)	Work on creating the app and work on the trainee's version (40%)	Work on creating the app and work on the trainer's version (40%)

**Question?**

**Thank you!**