7/10/21

* Download Unity and Git Hub on Personal Laptops and computer
* Create team files and Figure out logistics
* Divide up core work amongst team members

7/23/21

* Met with Dr. Faisal
  + Discussed project and timeline
  + September- Finish with preliminary demo and first trial patient will be admitted
  + November- Students will be on Engineering Elective and will assist with 5 clinical trial patients
  + Discussed submission for Critical Care Conference in February

7/28/21

* Met with PT/OT Team members of their input (See PT/OT Notes and/or copied below)

1. *What actions do you envision patients will do for rehab*

* *Start with a CAM ICU orientation with Nurse CPU (verbally giving instructions to patients)*
* *Start very simple with games and grade according*

1. *Do you have any ideas of games you would like your patients to do? (Phone games, Puzzles? Outdoor Games?)*

* *4 piece puzzle, 8 piece puzzle, 12 piece puzzle*
* *Distraction in background (beach water waves move, trees move, coconut could fall, light rain storm)*
* *Games would be to engage the patient cognitively and physically to prevent delirium*
* *Status post liver patients should be able to neck range of motion*
* *Look left and look right basically*
* *Shoulder abduction up to 90 (Frisbee and bean bag toss). KEEP IT TO 90 degrees. NO HIGHER*
* *PING PONG :D*
* *Balloon floating and pop it (first let them pop all, second game let them only pop red)*
* *Familiar format games may help with orientation (Candy crush and angry birds)*
* *Sport event area and carnival games*
* *Graded activities with motor and attention but start with attention first*
* *Background music or carnival sound*

1. *Is there anything we should NOT create? Exclusion criteria? Has been known to aggravate patient?*

* *Most likely patients excluded from trial:*
  + *ENT patients- Will not be able to move neck*
  + *Be able to move fingers and arms and neck motions*
  + *Fresh trachea*
  + *Subluxation of shoulder can’t lift shoulders or move neck. Potentially can’t even put on the device.*
  + *Prior stroke or neuro deficits*
  + *Prior psych history: Bipolar, schizophrenia, PTSD, severe anxiety*
  + *Depression and anxiety patients?*
* *Wrist activities are OUT because arterial lines will be interfered with*
* *Don’t put aggravating distractors like birds or clowns*
* *No basketball because it will cause patients to reach above 90 degree line*

**8/8/21**

Progress:

* Working floor system and collision
* Goal- Finish floor and work on patient character

To-Do:

* CITI and Morti training for Peter and Wes
* Change PI to Dr. Faisal for Antara
* Discuss Abstract submission and writing with Dr. Faisal
* Add background
* Work on patient character
* Test upload to VR oculus

Plan:

1. Building Environment: Floor, scene and creating patient character
2. Create and Program Nurse Character to say CAM-ICU commands
3. Program mini games that build on complexity and commands

**8/13/21**

**Meeting w/ Dr. Faisal** :

12-1 PM on Monday, Tuesday, Thursday.

**Meeting with Todd Griffith**

**To Do list:**

Tentative 8/20 goal: work on NPC, work on recorded nurse audio or TV, work on weather and time

Antara: Find music-> Beach sounds, chill bird sounds, wave (anything royalty free), Add folder called git. Find balloon bubbling sounds. Work on sound effects and sounds.

Peter: Sideloading, VR publishing and uploading.

Wes: Work on sky, clouds and sun. Ensure player movement is good.

*Note:*

*Git-> Add clone repository-> VR Delirium/VR Delirium*

*Push to VR delirium which has Git Ignore*

*VR environment is backup*

*Add mesh collider, no covnvex*

**Engineering Defined Strengths:**

Wesley:

Team lead and grant award

Previous VR 

Previous coding

Game design experience

Antara:

Organizational experience

IRB experience

Grant writing, Abstract and paper writing

Previous coding experience

Peter:

Environmental and structure design

CAD experience

Coding experience

Versatility

Need to contact Sears for Software

Need rudimentary hazard risk document for patient

Device Hazard risk to software (tedious, “likelihood is low” associated risk is 1/2/3)

Rudimentary device control documents

Unit based system needed.

**8/29/21**

* Complete 15/19 IRB documents
* Added text and flow diagrams
* Described gamification of systems

**9/6/21**

Updated documents with Dr. Faisal’s comments

Wes shared all his cool updates; Mixamo

Wes- NPC and triggering and Menu; lighting

Peter- Work on hand

Antara- Work on script and popping sounds; Reach out to Dr. Amarnath Banerjee

Future updates: Add assets with Houston Methodist Logos on NPC and Hand

Script: Look at hands (orient hands)

**9/21/21- Team meeting+ meet with Dr. Faisal**

**Development:** In progress- need to make game and finishing touches for preliminary testing

* Finish hands
* Sounds

**Paper:**

**Goals:** Methods paper sometime in October (5-10 volunteers) testing feasibility

**Goals:** Paper on actual patients-waiting on it from IRB (Target: PLOS one)

**Later Goals:** Larger scale trial with additional funding from NIH

**Approvals to Move forward**

IRB approval for Methodist

NIH approval/funding application

Panel\_dialog-> previous, Next, DialogueBox

On click for sound

Environment-> background beach music (LOOP IT)

PUSH/PULL-> Collaborate-> publish

StartButton-> Inspector-> on clinck-> drag sound, Once click start= surgeon waves and starts dialogue

Canvas-> Dialog trigger-> Messages

Window package manager-? XR

**CAM-ICU is negative->** Proceed with Game

**CAM-ICU is positive->** Patient is hypo or hyperactive to not be able to play game.

Daynightcycle-> target day length-> 1440

**9/26/2021**

Meeting, Introduced Rohan to the team

Last screen of dialogue box-> Relax or Start the game

Once game-> Teleport to new stage-> Balloon pop game (non-scary popping sounds already found ☺)

IT IS LIKE FIRST PERSON SHOOTER TEEHEE

Game time: 2 min per game

1. Game staging and dialogue box
2. Make game
3. Teleport game and linkage
4. START TESTING :D

Minutia: Game clean up-> Range of motion of hands

**10/3/2021**

Meeting, Helped Rohan setup unity

Previously:

* Antara added all the dialogues
* Dialogue bugs fixed
* Versions updated to avoid issues with syncing
* Issues: Surgery schedule slowing down work output

Plan:

* Dialogues
  + Might need to add an additional panel with a new dialogue box so that the CAMICU dialogue can feature new buttons with Yes/No
  + Need to adjust dialogues to save answers from CAMICU values
    - Add array with answers
    - Yes button = 1 value, No button = 0 value Array output is list of questions with yes/no answers
    - Output array to file for data or save camicu scoring (for ourselves)
    - For Antara: save array as file, export data
  + Voice recordings of text – Antara will record
  + Something we might need to check: audio source
* Game
  + Need to use VR shooter game tutorials to make a simple game
* Link between Dialogue and Game
  + Need to figure out staging and teleportation options
  + Many ways to do this
* Minutia: Game clean up-> Range of motion of hands

**10/9/2021**

Game mostly complete, just need to change sine waveforms

Wesley, Antara, Peter, Rohan

Previously:

* Game triggers added
* Dialogue boxes added
* Paper mostly written – just needs reorganization

Plan:

* Dialogues
  + Trim audio clips
  + Play with volume
  + Recording
* Game – polishing game stuff
  + Add multiple sine waveforms
  + Instructions
  + Counter
  + Trigger limiting
  + Recording
* Link between Dialogue and Game
  + Teleport player on Game button command
  + Maybe move Steve too
* Fix hands
* Look into game publishing to headset
* Logistics
  + IRB still on hold with (Methodist)
    - Ask other Indian guy about applying to A&M IRB
      * Mainly for healthy volunteers
    - VR IRB stuff
    - Ask about licensing/copywrite
    - Find target paper requirements and fix formatting in accordance to those requirements. Edit and adjust paper as necessary
  + Dr. Sears
    - Ask about copyright
    - Ask about being our faculty advisor (really just for name)
    - Ask about when the VR studio will be setup (just to put pressure)
  + Follow up on funding
  + Record in game video
  + Record out of game video

**10/17/2021**

Game mostly complete, just need to change sine waveforms

Wesley, Antara, Peter, Rohan

Previously:

* Game triggers added
* Dialogue boxes added
* Paper mostly written – just needs reorganization

Plan:

* Game – polishing game stuff
  + Add multiple sine waveforms
  + Instructions
  + Counter
  + Trigger limiting
  + Recording
* Link between Dialogue and Game
  + Teleport player on Game button command
  + Maybe move Steve too
* Add levels to game
* Add a time limit to the game
* Add retry button
* Look into sideloading fully on the headset
* Logistics
  + IRB still on hold with (Methodist)
    - Phone call Friday to ask about this
    - Ask about licensing/copywrite
    - Find target paper requirements and fix formatting in accordance to those requirements. Edit and adjust paper as necessary
  + Dr. Faisal
    - Follow up on IRB
    - Ask about Reliant clauses
  + Follow up on funding
* Paper Stuff
  + Make figures
    - Stereoscopic views
  + Edit Game video
  + Ask CLRC if we can use a room