

# Meeting Minutes

## Software Eng

Team #11, Mac-AR  
Student 1 Matthew Collard  
Student 2 Sam Gorman  
Student 3 Ethan Kannampuzha  
Student 4 Kieran Gara

Table 1: Revision History

Date	Developer(s)	Change
2023/09/12	Matthew Collard	Creation of minutes
2023/09/15	Ethan Kannampuzha	Meeting 2 Notes
2023/09/19	Kieran Gara	Supervisor Meeting 1 Notes
2023/09/25	Ethan Kannampuzha	Meeting 3 Notes
2023/09/26	Ethan Kannampuzha	Supervisor Meeting 2 Notes
2023/09/28	Ethan Kannampuzha	Meeting 4 Notes
2023/10/03	Ethan Kannampuzha	Supervisor Meeting 3 Notes
2023/10/17	Ethan Kannampuzha	Supervisor Meeting 4 Notes
2023/10/23	Ethan Kannampuzha	Meeting 5 Notes
2023/10/24	Ethan Kannampuzha	Supervisor Meeting 5 Notes
2023/10/31	Ethan Kannampuzha	Supervisor Meeting 6 Notes
2023/10/31	Ethan Kannampuzha	Meeting 6 Notes
2023/11/07	Ethan Kannampuzha	Supervisor Meeting 7 Notes
2023/11/14	Ethan Kannampuzha	Supervisor Meeting 8 Notes
2023/11/28	Ethan Kannampuzha	Supervisor Meeting 9 Notes
2024/01/10	Ethan Kannampuzha	Supervisor Meeting 10 Notes
2024/01/17	Ethan Kannampuzha	Supervisor Meeting 11 Notes
2024/01/24	Ethan Kannampuzha	Supervisor Meeting 12 Notes
2024/01/31	Ethan Kannampuzha	Supervisor Meeting 13 Notes
2024/02/07	Ethan Kannampuzha	Supervisor Meeting 14 Notes
2024/02/14	Ethan Kannampuzha	Supervisor Meeting 15 Notes
2024/02/28	Ethan Kannampuzha	Supervisor Meeting 16 Notes

# Team Meeting 1

## Details

Date	2023/09/12
Location	Thode Study Room 9
Time	3:30pm-5pm

## Attendance:

- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

## Agenda:

- Choose Projects
- Email Supervisors
- Decide group member roles

## Team Minutes

- Projects:
  - Rhombichess
  - Fitness Tracker
  - Soccer App
  - Food rescue
  - ChemFAST
  - VoiceLab
  - X-ray Ai
  - XR Game
- Group member Roles

## **Project List:**

### **Rhombichess:**

- Description:
  - Chess on a rhombus board instead of a 8x8 grid, new pieces new rules
  - competitive 2 player game, preferred to be playable online
- Source:
  - McMaster suggested list #12
  - Supervisor: Dr. Paul Rapoport
- Stakeholders:
  - People that like chess
  - People that like board games

### **Fitness App:**

- Description:
  - Fitness app that tracks the progress of the user
  - can track diet, workout, etc.
- Source:
  - Suggested by Ethan
  - Supervisor: None
- Stakeholders
  - People that want to be healthy
  - People that want to workout

### **Soccer app:**

- Description:
  - Builds soccer teams for you
  - communication with other members
- Source:
  - Suggested by Ethan
  - Supervisor: None
- Stakeholders
  - People that like soccer

**Food Rescue:**

- Description:
  - Connects non-profit food distributors to those who need food
  - Mobile application
- Source:
  - McMaster suggested list #11
  - Supervisor: Ahana Malhotra, Dr. Elkafi Hassini
- Stakeholders
  - Food Distributors
  - Families that need food

**CHEMFAST:**

- Description:
  - Study resource for students that custom tailors learning material based on their needs
  - Database with past questions from tests and assignments to pull from
- Source:
  - McMaster suggest list #6
  - Supervisor: Dr. Sharonna Greenberg
- Stakeholders
  - Students taking chemistry
  - Professors

**Improving VoiceLab:**

- Description:
  - VoiceLab is a program that can measure and manipulate voices
  - The goal is to improve voicelab by adding multi processing and APIs
- Source:
  - McMaster suggested List #5
  - Supervisor: Dr. David Feinberg
- Stakeholders
  - Data Scientists

**AI for X-ray read:**

- Description:
  - Analyzes chest X-rays and gives a diagnosis based on AI
  - Create radiology reports based on findings
- Source:
  - McMaster suggested list #3
  - Supervisor: Dr. Mehdi Moradi
- Stakeholders
  - Doctors
  - Hospital workers
  - X-ray specialists

**XR Game:**

- Description:
  - Alternate reality game
  - Communication with others is major
- Source:
  - McMaster suggested list #17
  - Supervisor: Dr. Irene Ye Yuan
- Stakeholders
  - People that enjoy VR/AR/XR
  - Gamers
  - Isolated/lonely people

### Team Member Roles

Role	Name	Responsibility
GitHub Administrator	Sam	Merge and maintain Github Branches
Final Revision Editor	Kieran	Last editor of requirements documents, makes sure we adhere to writing guidelines
Communication Director	Matthew	Communicates with the Supervisor/Prof and any stakeholders
Meeting Minute Writer	Ethan	Keeps track and writes down the meeting minutes
Lead Developer	Kieran	Leads the development process, makes sure we are on the right track to complete our goals at the agreed upon due dates
Lead UI Designer	Matthew	Makes sure the user interface is clear to the user, and functioning. Implements UI based code such as buttons
Functional Requirement Lead	Ethan	Makes sure every function requirement is met during the coding process
Non-Functional Requirement Lead	Sam	Makes sure every NFR is met during the coding process

## Team Meeting 2

### Details

Date	2023/09/15
Location	PGCLL Basement
Time	12:30pm-1:20pm

### Attendance:

- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Decide Git Workflow
- Work on Development Plan

### Team Minutes

- Decided on XR Social Collaboration Project
- Git Workflow:
  - For two primary branches (main/develop), require pull requests to resolve potential merge issues
- POC Demo Discussion:
  - Create a simple working AR program
  - Show that we have the ability to network with different devices
- Coding Decisions:
  - Going with Unity framework (C sharp coding language)
  - Using NUnit for unit testing
  - Using dotCover for code coverage
  - Decided basic coding standards (variable syntax, class names syntax, etc.)
- Decided on using Google Calendar for scheduling milestones/deadlines

# Supervisor Meeting 1

## Details

Date	2023/09/19
Location	Dr. Yuan's office: ABB C529
Time	11:30am-12:00pm

## Attendance:

- Dr. Irene Ye Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

## Agenda:

- Meet with supervisor to discuss what is expected out of this project
- Discuss stakeholders, scope, and expected features to prepare for requirements document
- Answer Dr. Yuan's questions about deadlines and deliverables

## Team Minutes

- Planned weekly half-hour meeting with Dr. Yuan, 11:30am every Tuesday at her office
- Disclosed Development Plan, Requirements, POC and Rev 0 deadlines to Dr. Yuan
- Project Goals and Scope:
  - AR game to enable social interaction from a remote environment
  - Should be usable by people who can't get to physically social events or are not comfortable/willing to do so
  - Initially only needs to sustain 2-4 people, can expand later
  - Likely for indoor usage
- Stakeholders:
  - People comfortable with technology, ages 15-30



- People who already know each other or are in pre-formed groups
  - Initially limited to the developers and friends/family
  - Dr. Yuan, on the basis of her research interest in social interactions via games
- Features/Technical requirements:
  - Use a centralized server as opposed to one person hosting
  - Must be developed for mobile phones
  - Sensors: Phone's gyroscope and accelerometer. Also camera and microphone.
- Discussed prospect of a remote AR collaborative escape room type game completed in sessions

## Team Meeting 3

### Details

Date	2023/09/25
Location	Discord
Time	3:30pm-4:30pm

### Attendance:

- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Finalize the Problem Statement and Development Plan documents.

### Team Minutes

- Updated the input and outputs sections for the problem statement, as well as the stakeholders (removed developers)
- Added more descriptions to Goals and Stretch Goals
- Added section in workflow for Development Plan explaining project management will be git project boards and git issues
- Updated PoC Demo Plan to include the actual demonstrations we plan to do as well as what will happen if we cannot achieve what we are striving for
- Added more descriptions to Technology section of Development Plan

## Supervisor Meeting 2

### Details

Date	2023/09/26
Location	Dr. Yuan's office: ABB C529
Time	11:30am-11:45am

### Attendance:

- Dr. Irene Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha

### Agenda:

- Update Dr. Yuan on current progress
- Run implementation ideas by Dr. Yuan

### Team Minutes

- Added Dr. Yuan as a collaborator on the GitHub repo so that she can see our progress and documents
- Discussed two ideas for implementation:
  - Two people work on consecutive tasks that do not have any relation to each other
  - Escape room idea: Two people work on several sub tasks that each give them a code letter on completion. When the code letters are assembled, the main task is completed
- Dr. Yuan mentioned that on final implementation we should get people to play the game and see how they interact (record their play session)

## Team Meeting 4

### Details

Date	2023/09/28
Location	Discord
Time	4:40 - 6:10pm

### Attendance:

- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Delegate SRS work for different sections
- Work on creating high level use case for system

### Team Minutes

- Discussed the current sections of the SRS that need to be worked on:
  - Project Drivers - Sam
  - Functional Requirements - Kieran (use cases/FRs), Matt (FRs)
  - Non-functional Requirements - Sam (review NFRs)
  - Traceability - Group Collab
  - Project Issues - Ethan
  - Appendix - Sam
- Delegated the SRS work for each team member
- Worked on system use case that goes over user interactions with the system

## Supervisor Meeting 3

### Details

Date	2023/10/03
Location	Dr. Yuan's office: ABB C529
Time	11:30am - 12:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress
- Go over SRS
- Discuss puzzle ideas
- Discuss needs for implementation

### Team Minutes

- Informed Dr. Yuan about current progress on SRS
- Dr. Yuan took a look at the SRS (seems fine)
- Puzzle Brainstorming:
  - one person sees something, other person has to match it with something on their end
  - people in same place, see different things, find the differences between the environments
  - Should we have users see same thing and work on puzzle together
  - Should users see different things and the puzzle connects the two environments?
- How will users interact with system?
  - tapping screen?

- dragging items on their screen?
- Server Discussion:
  - Take a look at AWS or Digital Ocean for cloud server
  - May need small server to help with data communication

## Supervisor Meeting 4

### Details

Date	2023/10/17
Location	Dr. Yuan's office: ABB C529
Time	11:30am - 12:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Discuss potential hazards for the project with Dr. Yuan

### Team Minutes

- Two types of hazards:
  - User causing Hazard
    - \* User getting injured while doing movements
    - \* Outdoor game, users must be aware of outdoor factors
    - \* if indoor and two players play in the same room, need to be careful they don't bump into each other
    - \* User getting dizzy while playing
  - System causing Hazard
    - \* Loss of connection
    - \* Syncing issues between puzzle rooms
    - \* Phone crashes
    - \* Calibration issues (want to prevent before it happens)
- Potential prevention method would be to have the app freeze when user moving too fast or too far away from their puzzle area
- Could have set of warnings at beginning when launching session
- Could have pop up during session for other warnings
- Need to think about physical waiver (perhaps apart of terms of service agreement)

## Team Meeting 5

### Details

Date	2023/10/23
Location	Discord
Time	3:00 - 3:45pm

### Attendance:

- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- List requirements for PoC
- Create tasks for PoC
- Assign tasks and deadlines for PoC
- Discuss VnV plans

### Team Minutes

- Planning to use Unity multiplayer dashboard to create project
- Using Vivox to create the communication system
- Lobby will be setup so players can join and communicate with each other in lobby before starting the game/puzzle.
- Interaction for PoC will involve two players. Player 1 presses a button in their environment causing Player 2's environment to change (or a light appears).
- Requirements for PoC:
  - Textchat using Vivox - Ethan and Kieran (Nov 10)
  - Interaction between two players - Sam (Nov 10)
  - Lobby setup - Matthew (Nov 1)
- PoC to be ready by Nov 10
- Plan to go over VnV Oct 30



## Supervisor Meeting 5

### Details

Date	2023/10/24
Location	Dr. Yuan's office: ABB C529
Time	11:30am - 12:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress
- Discuss VnV and PoC requirements

### Team Minutes

- Showed Dr. Yuan what we currently have (white cube, when button pressed changes colour)
- Discussed plan to use integrated unity frameworks for multiplayer lobby and Vivox for communication
- May not need server due to integrated unity multiplayer
- For PoC:
  - Best to do live demo
  - Plan to show interaction between two people (one person pressed button, other person's cube changes colour)
  - Form of communication (live voice & voice message/recording & text chat)
- For VnV:
  - Tough to do integrated testing in unity
  - Can automate server based testing

- Should test data syncing and communication
- Probably a lot of manual testing (test creating a session, test communication methods)

## Supervisor Meeting 6

### Details

Date	2023/10/31
Location	Dr. Yuan's office: ABB C529
Time	11:30am - 12:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress (lobby creation)
- Discuss VnV and ask about any suggestions Dr. Yuan has for testing

### Team Minutes

- Showed Dr. Yuan that lobby setup for the application works
- Regarding VnV:
  - Dr. Yuan can send general game usability survey
  - Team will walk Dr. Yuan through the SRS (at a later date) so that she can provide validation that it is correct and meets the proper requirements
  - Dr. Yuan suggests all components user interacts with should have a test case (ex. create lobby, join existing lobby, etc.)
  - Puzzles also need to have test cases (think of what one person should see vs what other person sees)
  - Make tests that trace to all requirements (including ones present in Hazard Analysis)
  - Automated testing can be used for testing pings to server/messaging system, and backend scripts/code
  - Static testing for code and documentation

## Team Meeting 6

### Details

Date	2023/10/31
Location	Discord
Time	3:45- 4:20pm

### Attendance:

- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Discuss VnV
- Delegate work for VnV

### Team Minutes

- Need to update SRS to include NFR's from Hazard Analysis, as well as feedback from TA
- For VnV:
  - Mapping Functional Requirements to tests: Ethan + Kieran
  - Mapping Non Functional Requirements to tests: Matthew + Sam
  - Complete section 4 by end of Nov 1
  - Thurs, Nov 2, work on Traceability and rest of document

## Supervisor Meeting 7

### Details

Date	2023/11/07
Location	Dr. Yuan's office: ABB C529
Time	11:30am - 12:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress
- Discuss PoC Needs

### Team Minutes

- Showed Dr. Yuan regarding voice chat
- PoC Needs
  - Button changing colours of persons cube
- Record video for PoC
- Need to merge into dev

## Supervisor Meeting 8

### Details

Date	2023/11/14
Location	Dr. Yuan's office: ABB C529
Time	11:30am - 12:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress
- Discuss additional functionality

### Team Minutes

- Show Dr. Yuan current progress on text chat
- Functionality needing to be added:
  - Remove two ready buttons from lobby page (only keep 1)
  - Make text field larger in text chat (expandable when chat opens, history transparent)
  - Add back button functionality (to exit, return to lobby)
  - Issue with rejoining lobbies need to be fixed

## Supervisor Meeting 9

### Details

Date	2023/11/28
Location	Dr. Yuan's office: ABB C529
Time	11:30am - 12:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Discuss meeting schedule moving forward
- Discuss puzzle ideas

### Team Minutes

- No more meetings after Dec 5
- Resume meetings Jan 10 (2:30pm on Wed)
- Puzzle framework
  - physical challenges
  - mental challenges (observation, noticing differences)
- 4 types of puzzles for players
  - Same puzzle that each player must solve
  - Similar puzzle but slightly modified for each player
  - Totally different puzzle for each player
  - Collaborative puzzle
- Want to have two different puzzle modes
  - Short mode (10-15 mins) (small subset of puzzles)
  - Long mode (30-40 mins) (One puzzle for each of the 4 types at least) (each puzzle solvable in 10 mins)

## Supervisor Meeting 10

### Details

Date	2023/01/10
Location	Dr. Yuan's office: ABB C529
Time	2:20pm - 2:30pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress

### Team Minutes

- MIS/modules are due on the 17th
- Not many changes over the break
- Revision 0 due soon, mainly working on puzzles
- Talk later about the content when getting into main implementation
- We can look at the puzzle types between the meetings



# Supervisor Meeting 11

## Details

Date	2023/01/17
Location	Dr. Yuan's office: ABB C529
Time	2:30pm - 3:00pm

## Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

## Agenda:

- Update Dr. Yuan on current progress

## Team Minutes

- MIS/MG almost completed
- Give Dr. Yuan access to Google Doc to review puzzles
- Puzzles should have some unified theme
- Good to have puzzles that involve communication types other than verbal (ex. non-verbal/screen flashing colours)

## Supervisor Meeting 12

### Details

Date	2023/01/24
Location	Dr. Yuan's office: ABB C529
Time	2:30pm - 3:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress
- Discuss puzzle ideas

### Team Minutes

- Dr. Yuan has given puzzle feedback on google sheets sent in email
- Think about physical interactions of users ie. pressing buttons in game environment
- Think about self-motion aspect of puzzles
- Timeline for puzzles
  - Finish puzzles for Feb 5
  - Aim for 3-4 puzzles
  - Think about if one side has more info, other side has more work (should be balanced; ie. one person shouldn't always be doing the same part of each puzzle)

## Supervisor Meeting 13

### Details

Date	2023/01/31
Location	Dr. Yuan's office: ABB C529
Time	2:30pm - 3:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress

### Team Minutes

- Showed Dr. Yuan current version of maze puzzle
  - In two player version, have maze rotate and not just ball
  - Maze should spawn on lower plane under person and a little forward
  - Could have visual aids to help guide the user (ex. Match overlay with maze to make sure it spawns in correct spot or have pop up message letting them know how to setup their phone placement)
- Showed Dr. Yuan current version of text chat
  - Make text larger perhaps (still need to test on phone)
- Talked about Simon Says Puzzle progress

# Supervisor Meeting 14

## Details

Date	2023/02/07
Location	Dr. Yuan's office: ABB C529
Time	2:30pm - 3:00pm

## Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

## Agenda:

- Update Dr. Yuan on current progress

## Team Minutes

- Showed Dr. Yuan current version of simon says puzzle
- Notes for rev 0
  - Should demo 2 people interacting
  - Have video backup
- How will puzzle distribution work?
  - For final product, puzzles should be randomly chosen, and 2 should spawn in allowing user to choose which one they want to do
  - For rev0, just have them be sequential
- Concerns for Maze/Engaging with specific puzzle
  - If phone camera not pointing at maze, might have issues interacting
  - Could have button you press when engaging with puzzle
  - Also issue with people interacting with multiple puzzles at once
  - Solution could be if your looking at a puzzle, it becomes in focus and can be interacted with
- Issue related to going too far away from puzzle

- Only allow interaction within a specific range?
  - Could have puzzle chase person to its always in range
- After reading week need to test in larger area and do usability testing to see what additional functionality is required

## Supervisor Meeting 15

### Details

Date	2023/02/14
Location	Dr. Yuan's office: ABB C529
Time	2:30pm - 3:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress
- Discuss feedback from Rev0

### Team Minutes

- Showed Dr. Yuan current progress of the app
- Feedback from Rev0 was to implement some more AR elements into puzzles
- Dr Yuan Study
  - Look for 10 groups of people to play with the app and see how they interact with each other (look at how they use different elements like voice/text to communicate)
  - Record session (install video inside of room or set up some way to observe), and have interview session afterwards asking questions about the game and to give their thoughts
  - Things to log:
    - \* Audio log, text chat log, track time taken by each group, attempts for solving puzzle, record for each puzzle who is being assigned each role, track when puzzle interacted with/when interaction stopped (when puzzle spawn in and user stops interacting to start working on a diff puzzle)

- Expo
  - Mention study/what Dr. Yuan plans to use the app for
  - Dr. Yuan can fill in the information on the board
- Send overleaf link to Dr. Yuan for VnV
- Try to have pilot session and have one group play and see how long it takes group to do the puzzle (aim 15-20 mins)

## Supervisor Meeting 16

### Details

Date	2023/02/28
Location	Dr. Yuan's office: ABB C529
Time	2:30pm - 3:00pm

### Attendance:

- Dr. Yuan
- Matthew Collard
- Sam Gorman
- Ethan Kannampuzha
- Kieran Gara

### Agenda:

- Update Dr. Yuan on current progress

### Team Minutes

- Showed Dr. Yuan the "twilight puzzle"
- Discussed the cohesive game idea (one puzzle powers up another puzzle)
- Remove requirement for Save/Load game
- Add hint/help system to guide users
- Sent Dr. Yuan overleaf to validate SRS
- Dr. Yuan travelling week of March 18 so not there for Rev 1
- Make skip button have limited skips (difficulty level, easy, medium, hard, determines amount of skips perhaps)
- For expo, have warnings about interactions/if a puzzle requires user to stand up or crouch