Sprint Reports

Sprint	Duration (planned)	Timeline (actual)	Goal
Pre-Sprint / Sprint 0	6 weeks	Ended 13/05/20	Requirements analysis and design decisions
Sprint 1	4 weeks	13/05/20 - 07/06/20	Initialise frameworks, development/deployment environments and implement basic functionalities: starting and joining games
Sprint 2	3.5 weeks	15/08/20 - 30/08/20	Further implement some foundations for the game and implement more functionalities: concurrent role selection
Sprint 3	4 weeks	08/09/20 - 30/09/20	Be able to play a full round of the game
Sprint 4	4 weeks	13/10/20 - 06/11/20	To deliver a well-tested, completed and playable product.

Sprint 0 Report

Summary

The pre-sprint / Sprint 0 work included the requirements analysis process, such as understanding the user, creating personas, motivational modelling, prototyping and making design decisions and designing the architecture of our software. The work performed is reflected throughout our Confluence space.

Retrospective

A retrospective meeting was held on 15/05/20.

Overall our team has worked well and we identified some positive attributes to keep up, including effective communication, ownership of tasks, keeping a good pace and the high quality of the documentation on Confluence.

A key are identified to improve included more clarity on who was working on what - which will be improved by more frequent and effective use of Jira. Additionally, this will allow for better distribution of the work across the team.

Appendices

Appendix 1 - Tasks completed in Pre-Sprint / Sprint 0

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
CE90013-98	review design		10 May, 2020	14 May, 2020		Akhmetzhan Kussainov	Lu Lei		DONE	Done
CE90013-75	Explain choice of front-end tool and justify		09 May, 2020	09 May, 2020		Rainer Selby	Rainer Selby		DONE	Done
CE90013-72	Break down User Story 14-20 into specific and attainable tasks		08 May, 2020	10 May, 2020	10 May, 2020	Chenling Huang	Chenling Huang		DONE	Done

CE90013-70	Conduct meeting to estimate story points for user stories		07 May, 2020	15 May, 2020	Chenling Huang	Rainer Selby		DONE	Done
CE90013-69	Update digital prototype to align with user stories		07 May, 2020	10 May, 2020	Rainer Selby	Rainer Selby		DONE	Done
CE90013-68	Sequence Diagram		06 May, 2020	09 May, 2020	Chenling Huang	Chenling Huang		DONE	Done
CE90013-67	Database & Tools Research		06 May, 2020	11 May, 2020	Angus Hudson	Angus Hudson		DONE	Done
CE90013-66	Research on Frontend Tools		06 May, 2020	09 May, 2020	CHRISTINA XU	CHRISTINA XU		DONE	Done
CE90013-65	Business Logic Design		05 May, 2020	11 May, 2020	Yu Guo	Lu Lei		DONE	Done
CE90013-64	Data Source Design		05 May, 2020	11 May, 2020	Lu Lei	Lu Lei		DONE	Done
CE90013-63	Write documentation for Git branching model		05 May, 2020	10 May, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE90013-62	Review Back-end technology choices from Dev-ops standpoint		05 May, 2020	10 May, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE90013-61	Review Front-end technology choices from Dev-ops standpoint		05 May, 2020	10 May, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE90013-60	Database Design		04 May, 2020	11 May, 2020	Angus Hudson	Lu Lei		DONE	Done
CE90013-59	Research on Database Options		04 May, 2020	11 May, 2020	Yu Guo	Lu Lei		DONE	Done
CE90013-58	Research on Different Languages		04 May, 2020	11 May, 2020	Yu Guo	Lu Lei		DONE	Done
CE90013-56	Entity-Relation Diagram		04 May, 2020	11 May, 2020	Unassigned	Chenling Huang		DONE	Done
CE90013-55	Domain Diagram		04 May, 2020	10 May, 2020	Yuhen LI	Chenling Huang		DONE	Done
CE90013-54	Activity Diagram		04 May, 2020	09 May, 2020	Chenling Huang	Chenling Huang		DONE	Done
CE90013-53	Class Diagram (Backend)		04 May, 2020	11 May, 2020	Yu Guo	Chenling Huang		DONE	Done
CE90013-52	Class Diagram (Front end)		04 May, 2020	10 May, 2020	PEIWEN JIN	Chenling Huang		DONE	Done
CE90013-51	High-level architecture diagram		04 May, 2020	10 May, 2020	Yuhen LI	Chenling Huang		DONE	Done
CE90013-48	Research tools for CI/CD		04 May, 2020	08 May, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE90013-47	Back-end Design		04 May, 2020	15 May, 2020	Angus Hudson	Angus Hudson		DONE	Done
CE90013-46	Component Diagram		04 May, 2020	04 May, 2020	Chenling Huang	Chenling Huang		DONE	Done
CE90013-45	Back-end Research		04 May, 2020	09 May, 2020	Yu Guo	Angus Hudson		DONE	Done
CE90013-43	Dev-Ops		04 May, 2020	10 May, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE90013-40	Acceptance criteria		04 May, 2020	04 May, 2020	Angus Hudson	Rainer Selby		DONE	Done
CE90013-39	Acceptance tests		04 May, 2020	04 May, 2020	Angus Hudson	Rainer Selby		DONE	Done

CE90013-38	User stories		04 May, 2020	04 May, 2020		Chenling Huang	Rainer Selby		DONE	Done
CE90013-37	Personas		04 May, 2020	04 May, 2020		CHRISTINA XU	Rainer Selby		DONE	Done
CE90013-36	Digital prototype		04 May, 2020	04 May, 2020		Rainer Selby	Rainer Selby		DONE	Done
CE90013-35	Paper prototype		04 May, 2020	04 May, 2020		CHRISTINA XU	Rainer Selby		DONE	Done
CE90013-34	Architecture Design and Diagrams		03 May, 2020	15 May, 2020		Chenling Huang	Lu Lei		DONE	Done
CE90013-33	Front-End Research		03 May, 2020	09 May, 2020		Rainer Selby	Lu Lei		DONE	Done
CE90013-13	Background		24 Mar, 2020	04 May, 2020		Yuhen LI	Yuhen LI		DONE	Done
CE90013-11	Character persona - FAA official:		24 Mar, 2020	04 May, 2020		Unassigned	Rainer Selby		DONE	Done
CE90013-10	Character persona - Aeronautical engineer		24 Mar, 2020	04 May, 2020		Unassigned	Rainer Selby		DONE	Done
CE90013-9	Character persona - Airline pilot		24 Mar, 2020	04 May, 2020		Unassigned	Rainer Selby		DONE	Done
CE90013-8	Character persona - Software developer		24 Mar, 2020	04 May, 2020		Unassigned	Rainer Selby		DONE	Done
CE90013-7	Character persona - Boeing executive		24 Mar, 2020	04 May, 2020		Unassigned	Rainer Selby		DONE	Done
CE90013-6	Plot		24 Mar, 2020	04 May, 2020		Chenling Huang	Rainer Selby		DONE	Done
CE90013-5	Gameplay document		24 Mar, 2020	04 May, 2020		Unassigned	Rainer Selby		DONE	Done
CE90013-4	Requirements analysis		23 Mar, 2020	04 May, 2020		CHRISTINA XU	Lu Lei		DONE	Done
CE90013-3	Research		23 Mar, 2020	04 May, 2020	30 Mar, 2020	Lu Lei	Lu Lei		DONE	Done
CE90013-2	Game design		23 Mar, 2020	04 May, 2020	30 Mar, 2020	Angus Hudson	Lu Lei		DONE	Done

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Sprint 1 Report

Timeline

- 12/05/20: Sprint 1 Planning Meeting
- 13/05/20: Start Sprint 1
- 07/06/20: End Sprint 1
- 12/06/20: Sprint 1 Review
- 12/06/20: Sprint 1 Retrospective

Sprint planning

We conducted a Sprint Planning meeting on 12/05/20 (minutes).

With our requirements all prepared, decision decisions made and planning completed including a digital prototype and architectural design, the purpose of this first sprint is to lay the foundations for our software.

This included initialising and deploying the frameworks used by our app, initialising the database used, configuring the deployment environment and pipeline, and implementing some core functionalities to allow a user to start or join a game.

User stories

The following user stories were planned for Sprint 1. Only three stories were chosen, given these break down into a significant amount of work in order to initialise the technology used and actually implement the foundations of our game software.

User story ID	As a...	I want...	so...	Priority	Sprint	Completed
US_02	Student /Teacher	To be able to join a particular game session of my choosing.	I can join a game with any other users in it.	Must have	1	✓
US_03	Student /Teacher	To be able to initialise a game session.	I can create a session for other users to join and play.	Must have	1	✓
US_06	Student	To be introduced to some game background information before game start.	I can understand the general game.	Must have	1	✓

Tasks

Refer to Appendix 1 for a list of all tasks completed in Sprint 1, as per Jira.

Sprint review

At the end of Sprint 1, we had met our sprint goal, with the frameworks successfully implemented, the app deployed, and the ability for a user to start a game, and four other players to join the game using the game ID. A Sprint Review meeting was performed on 12/06/20 (minutes), where we discussed the current status of the project and summarised the work performed by the team.

The three user stories were delivered as at the end of the sprint. Nearly all tasks were completed, with a couple of minor items to be completed over the break.

We note that the burndown chart produced by Jira for this Sprint 1 did not meaningfully reflect our progress. This is because nearly all the tasks for this sprint were created as 'subtasks' of top-level user stories in Jira. In many cases the task was only somewhat related to that user story. As Jira only uses the top-level tasks when visualising the progress in the burndown chart, this meant the chart appeared not to burndown much at all, because some user stories were still waiting for one or two (relatively minor) subtasks to be done. For the next sprint we will find a solution for this, so that our burndown chart meaningfully shows our progress.

Deployment

The app was deployed to the following links as at the end of the sprint:

- Front-end: https://swen90013-ce-frontend-staging.herokuapp.com/
- Back-end: https://swen90013-ce-backend-staging.herokuapp.com/

GitHub release tags

- Front-end: https://github.com/eric-sciberras/SWEN90013-2020-CE-Frontend/releases/tag/v1.0.0
- Back-end: https://github.com/eric-sciberras/SWEN90013-2020-CE-Backend/releases/tag/v1.0.0

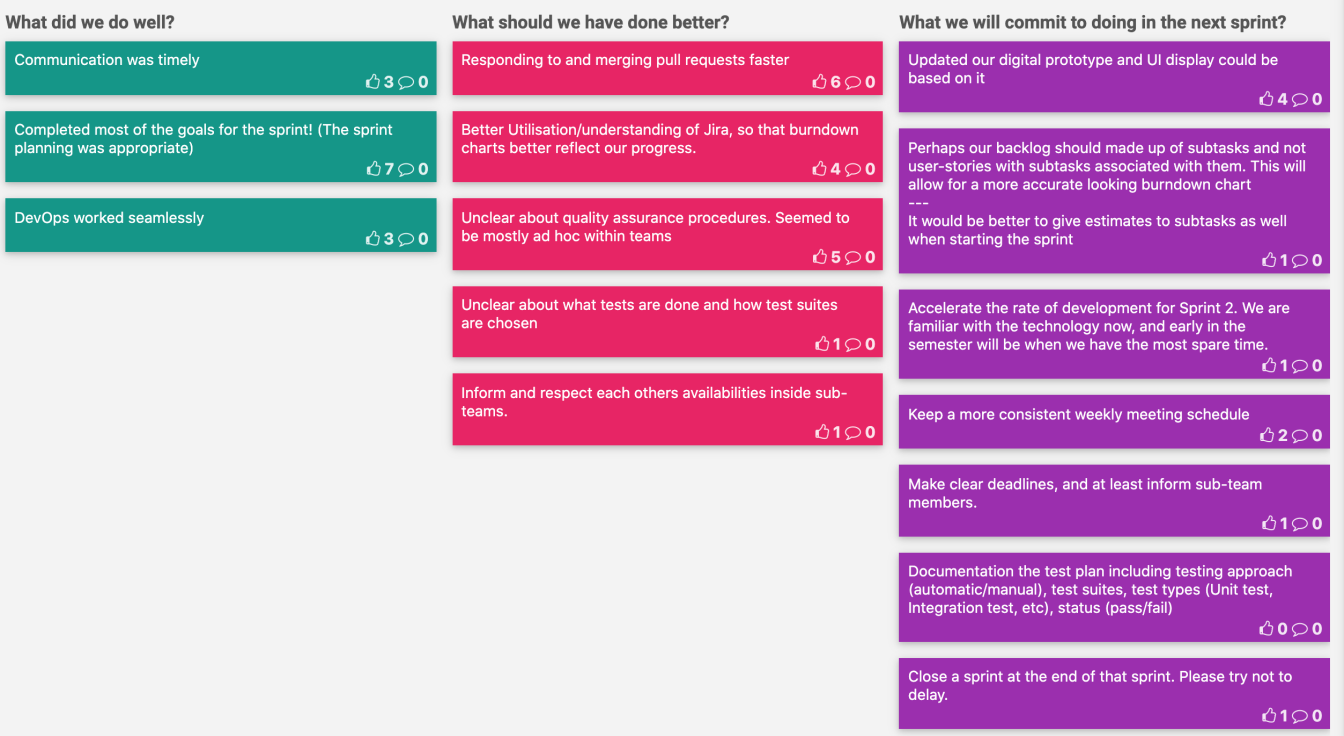
Sprint retrospective

The sprint retrospective meeting was also held on 12/06/20 (minutes).

Overall, we reflected that the team worked well together, with good collaboration and communication. We also identified that our planning for the sprint was appropriate given we met most of the goals of the sprint.

Being our first sprint, there may have been some unfamiliarity with certain tools and processes, which will be improved going forward as team members begin to master these processes. This included, the use of Git (pull requests), better using Jira, and the need for formal quality assurance and testing procedures.

Going forward, we will use Jira differently in relation to subtasks, communicate deadlines and meetings more clearly, and implement formal quality assurance and testing procedures.



Appendices

Appendix 1 - Tasks completed in Sprint 1

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
CE90013-154	Create API specification for requests between front- and back-end		01 Jun, 2020	07 Jun, 2020		Rainer Selby	Rainer Selby		DONE	Done
CE90013-153	US03_Fronted_08: Create Help page		30 May, 2020	06 Jun, 2020		PEIWEN JIN	PEIWEN JIN		DONE	Done
CE90013-151	US03_Frontend_08: Home Page		23 May, 2020	28 May, 2020		CHRISTINA XU	CHRISTINA XU		DONE	Done

CE900 13-150	Set up the cloud mongodb environment		18 May, 2020	25 May, 2020	Chenling Huang	Chenling Huang		DONE	Done
CE900 13-149	Investigate what services the deployment server need and create dockerfile		18 May, 2020	01 Jun, 2020	Chenling Huang	Chenling Huang		DONE	Done
CE900 13-148	Build the staging deployment pipeline for backend repo		15 May, 2020	07 Jun, 2020	Chenling Huang	Eric Sciberras		DONE	Done
CE900 13-147	Build the pull request workflow for backend repo		15 May, 2020	15 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-146	US03_Frontend_00: Choose Vue version and build the environment		15 May, 2020	20 May, 2020	PEIWEN JIN	Yuhen LI		DONE	Done
CE900 13-145	US06_Frontend_03: Connect with back-end		15 May, 2020	10 Jun, 2020	Rainer Selby	Rainer Selby		DONE	Done
CE900 13-144	US05_Frontend_02: Connect with back-end		15 May, 2020	15 Jun, 2020	Rainer Selby	Rainer Selby		DONE	Done
CE900 13-143	US02_Frontend_03: Connect with back-end		15 May, 2020	10 Jun, 2020	Rainer Selby	Rainer Selby		DONE	Done
CE900 13-142	US03_Frontend_07: Connect with back-end		15 May, 2020	10 Jun, 2020	Rainer Selby	Rainer Selby		DONE	Done
CE900 13-141	US06_Frontend_02: Implement in-game menu		15 May, 2020	02 Sep, 2020	Rainer Selby	Rainer Selby		DONE	Done
CE900 13-140	US_06_Backend_01: Create API of game background for frontend		15 May, 2020	12 Jun, 2020	Angus Hudson	Lu Lei		DONE	Done
CE900 13-139	US02_Frontend_02: Implement validation on Game ID and Name		15 May, 2020	02 Sep, 2020	Unassigned	Rainer Selby		DONE	Done
CE900 13-138	US_05_Backend_03: Create API of role backstory for frontend		15 May, 2020	12 Jun, 2020	Angus Hudson	Lu Lei		DONE	Done
CE900 13-137	US_05_Backend_02: Test mongodb model for role in Node.js		15 May, 2020	07 Jun, 2020	Yu Guo	Lu Lei		DONE	Done
CE900 13-136	US03_Frontend_06: Implement UI/stylesheets		15 May, 2020	02 Sep, 2020	Unassigned	Rainer Selby		DONE	Done
CE900 13-135	US_05_Backend_01: Create mongodb model for role including the backstory		15 May, 2020	12 Jun, 2020	Angus Hudson	Lu Lei		DONE	Done
CE900 13-134	US02_Backend_03: Create API of join a game for frontend		15 May, 2020	12 Jun, 2020	Angus Hudson	Lu Lei		DONE	Done
CE900 13-133	US03_Frontend_05: Create waiting page		15 May, 2020	06 Jun, 2020	PEIWEN JIN	Rainer Selby		DONE	Done
CE900 13-131	Investigate reverting to old version if deployment fails		15 May, 2020	07 Jun, 2020	Chenling Huang	Eric Sciberras		DONE	Done
CE900 13-130	US03_Frontend_03: Implement "hello world" in Vue.js		15 May, 2020	24 May, 2020	PEIWEN JIN	Rainer Selby		DONE	Done
CE900 13-129	Investigate adding security /authentication to web service		15 May, 2020	07 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-127	US03_Backend_07: Create API for front end		15 May, 2020	12 Jun, 2020	Angus Hudson	Lu Lei		DONE	Done
CE900 13-126	US03_Backend_06: Design decision tree		15 May, 2020	02 Sep, 2020	Akhmetzhan Kussainov	Lu Lei		DONE	Done

CE900 13-125	create duplicate staging environment to host as tempory production environment		15 May, 2020	07 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-124	US03_Backend_05: Create controller for initialisation to use mongodb model in Node. js		15 May, 2020	11 Jun, 2020	Lu Lei	Lu Lei		DONE	Done
CE900 13-123	US03_Backend_04: Generate Mongodb models for initialisation of the game		15 May, 2020	06 Jun, 2020	Angus Hudson	Lu Lei		DONE	Done
CE900 13-122	Build the staging deployment pipeline for frontend repo		15 May, 2020	07 Jun, 2020	Chenling Huang	Eric Sciberras		DONE	Done
CE900 13-121	US03_Backend_02: Connect Node.js to Mongo DB		15 May, 2020	06 Jun, 2020	Yu Guo	Lu Lei		DONE	Done
CE900 13-120	US03_Backend_01: Build Node.js Environment		15 May, 2020	06 Jun, 2020	Lu Lei	Lu Lei		DONE	Done
CE900 13-119	Build the pull request workflow for frontend repo		15 May, 2020	15 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-118	setup infrastructure		15 May, 2020	07 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-116	Investigate integration of tests into pipeline		15 May, 2020	07 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-115	Initialise the repository using gitflow methodlogy		15 May, 2020	19 May, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-114	Investigate cloud services to use		15 May, 2020	02 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-113	Create docker-compose file and usage documentaion		15 May, 2020	29 May, 2020	Chenling Huang	Eric Sciberras		DONE	Done
CE900 13-112	Investigate what services the frontend and backend need		15 May, 2020	19 May, 2020	Chenling Huang	Eric Sciberras		DONE	Done
CE900 13-97	Create workflow for pull requests		10 May, 2020	15 Jun, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-96	Create workflow for staging deployment		10 May, 2020	12 Jun, 2020	Chenling Huang	Eric Sciberras		DONE	Done
CE900 13-94	Create Staging environment		10 May, 2020	30 Aug, 2020	Eric Sciberras	Eric Sciberras		DONE	Done
CE900 13-93	Create Docker configuration for development environment		10 May, 2020	25 May, 2020	Chenling Huang	Eric Sciberras		DONE	Done
CE900 13-85	US05_Frontend_02: Role introduction page		09 May, 2020	06 Jun, 2020	PEIWEN JIN	Chenling Huang		DONE	Done
CE900 13-84	US06_Frontend_01: Story background page		09 May, 2020	06 Jun, 2020	PEIWEN JIN	Chenling Huang		DONE	Done
CE900 13-83	US03_Frontend_01: Create a new game page		09 May, 2020	26 May, 2020	CHRISTINA XU	Chenling Huang		DONE	Done
CE900 13-82	US03_Backend_03: Test MongoDB Connection		09 May, 2020	06 Jun, 2020	Yu Guo	Chenling Huang		DONE	Done
CE900 13-81	US02_Frontend_01: Create join the game page		09 May, 2020	10 Jun, 2020	CHRISTINA XU	Chenling Huang		DONE	Done
CE900 13-80	US02_Backend_02: Test join the game in Node.js		09 May, 2020	12 Jun, 2020	Unassigned	Chenling Huang		DONE	Done
CE900 13-79	US02_Backend_01: Create mongobd model for user and update the model for game		09 May, 2020	06 Jun, 2020	Angus Hudson	Chenling Huang		DONE	Done
CE900 13-19	US_05 Role Backstory Introduction		03 May, 2020	15 Jun, 2020	Unassigned	Lu Lei		DONE	Done

CE900 13-18	US_06 Game Background Introduction		03 May, 2020	02 Sep, 2020	Unassigned	Lu Lei		DONE	Done
CE900 13-16	US_03 Initialise a Game		03 May, 2020	11 Sep, 2020	Yu Guo	Lu Lei		DONE	Done
CE900 13-15	US_02 Join a Game		03 May, 2020	11 Sep, 2020	Yu Guo	Lu Lei		DONE	Done

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Sprint 2 Report

Timeline

- 10/08/20: Sprint 2 Planning Meeting
- 15/08/20: Start sprint
- 30/08/20: End sprint
- 02/09/20: Sprint 2 Retrospective
- 04/09/20: Sprint 2 Review (with client)

Sprint planning

We conducted a Sprint Planning meeting on 10/08/20 (minutes).

As of the end of the previous sprint, we had a functional front- and back-end deployed, with the functionality to start a game implemented, allowing five different players on different devices able to join a live game.

The goal of this sprint then was to implement the remaining foundations of the game, namely:

1. Ability for all five players to select a role and proceed
2. Design and set up the database to run the game and track decisions

User stories

The following user stories were planned (and completed) for Sprint 2:

User story ID	As a...	I want...	so...	Priority	Sprint	Completed
US_04	Student	To have an option to choose which character I play in the game.	I can more easily play unique characters, or characters I'd prefer over others.	Must have	2	✅
US_05	Student	To have access to a detailed backstory for a character, as well as their character in the company before the game start.	I can empathise with and adopt the perspective of this character more easily.	Must have	2	✅
US_09	Student	To be presented with an intuitive and clear UI for any decision-making.	I can clearly understand all of the options that are available, as well as the current game situation.	Must have	2	✅
US_20	Student	The UI to be user friendly.	I can clearly and effectively navigate the game, making for a quicker and more decision-oriented game.	Should have	2	✅
US_21	Student	The game to be highly reliable.	I don't need to worry about losing my game session during a game.	Must have	2	✅

Tasks

Refer to Appendix 2 for a list of all tasks completed in Sprint 2, as per Jira.

Sprint review

At the end of Sprint 2, we had met our sprint goal, with the ability for all five players to select a role and proceed into a game, and the initialisation of the dat abase to run the game and track decisions. Additionally, as part of this sprint we achieved further goals such as overhauling the front-end user interface using Vuetify to create a much nicer and responsive look and feel, better error handling and error messages, and implementing test suites.

A Sprint Review meeting was performed on 04/09/20 with our client in attendance (minutes), where we discussed the current status of the project and showcased the app as currently deployed. Our client gave a positive view of our progress, approving the look and feel of the app, and validated our work so far and the plan for the next sprint. We will collaborate further with the client to produce some content, and will investigate a possible bug that we revealed during the live demo.

Deployment

The app was deployed to the following links as at the end of the sprint:

- Front-end: https://swen90013-ce-frontend-staging.herokuapp.com/
- Back-end: https://swen90013-ce-backend-staging.herokuapp.com/

GitHub release tags

- Front-end: https://github.com/eric-sciberras/SWEN90013-2020-CE-Frontend/releases/tag/2.0.0
- Back-end: https://github.com/eric-sciberras/SWEN90013-2020-CE-Backend/releases/tag/2.0.0

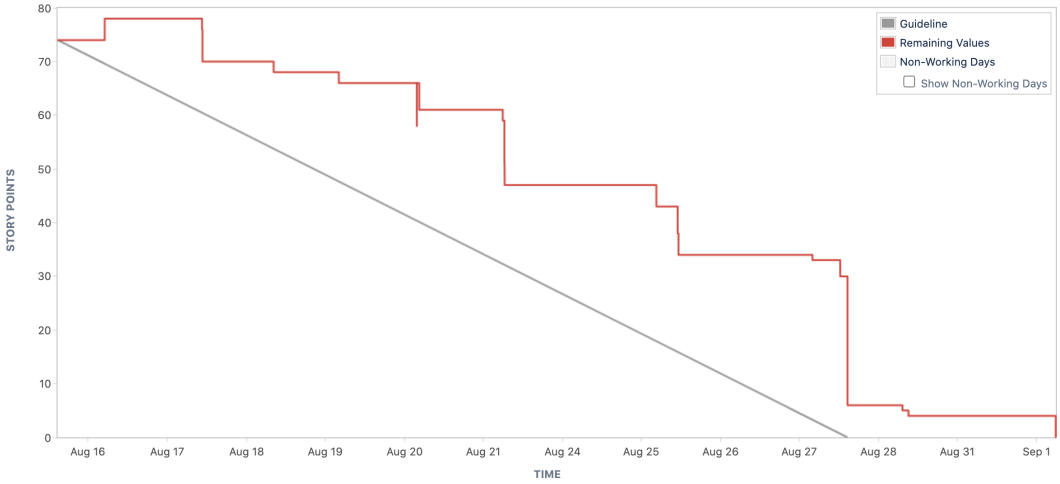
Burndown chart

The burndown chart for Sprint 2 has shown that the team worked consistently throughout the sprint, which matches our perception of the teamwork.

We have a much meaningful burndown chart compared to last sprint, thanks to the fact we broke down the user stories into smaller tasks at the top-level of Jira.

We note that the red line has a large drop at the end of the sprint, as a large amount of work that was in 'Review' was finally reviewed and moved to 'Done'. This was not any practical issue for the team in this sprint, however in future sprints we could consider trying to review tasks more consistently during the sprint so as to not risk creating a backlog of items to be reviewed.

The reason our red line extends for a few days past the guideline is that the guideline finished two days early (as it did not include the weekend due to Jira settings) and also as there was a delay in us updating some task statuses and officially 'closing' the sprint.



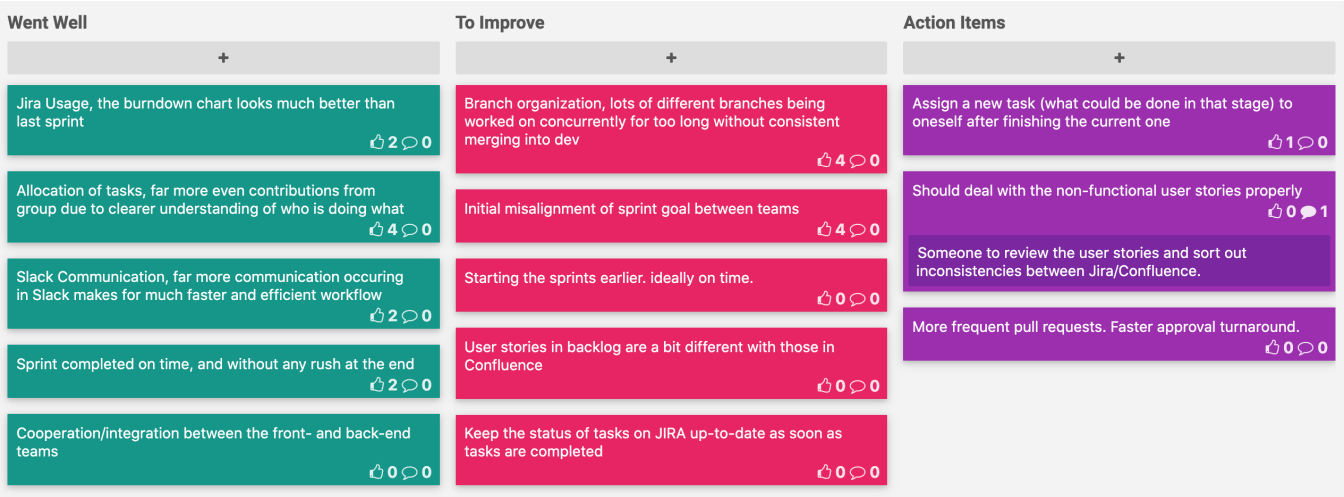
Sprint retrospective

The sprint retrospective meeting was held on 02/09/20 (minutes).

We identified that the team worked even more effectively and collaboratively in this sprint, both within and between the subteams. The organisation and use of Jira had greatly improved, better allowing for group members to more easily contribute and grasp the work. (As a consequence, the burndown chart was meaningful.) The sprint was completed on time without much rush or pressure towards the end - and this was also reflected by a consistent burndown.

Communication was more efficient through more frequent use of Slack, compared to requiring meetings. This was a 'to improve' item in a previous retrospective, which the team have successfully overcome.

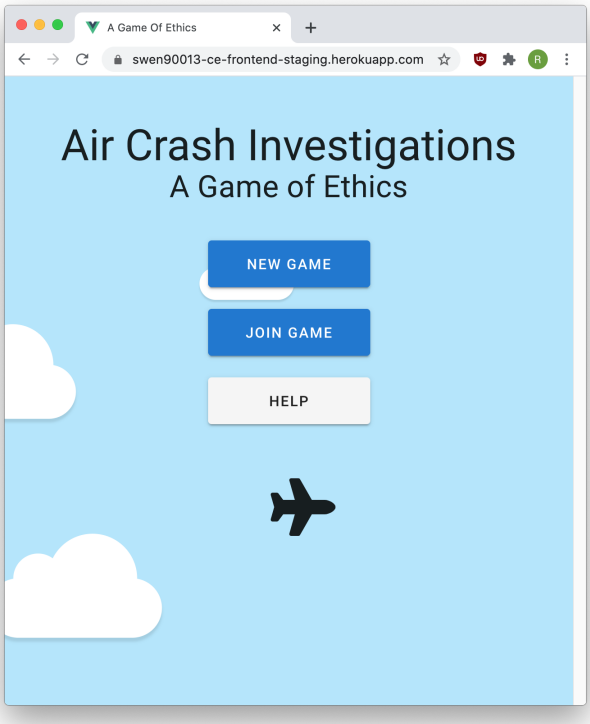
Some items to improve from this sprint included: ensuring there is clarity and no misunderstanding on the sprint goal, to be tidier with branches in the repositories (more frequent pull requests/approvals/merges), a need to deal with some misalignment of user stories between Jira and Confluence, and continuing to more frequently use Jira to track the work.



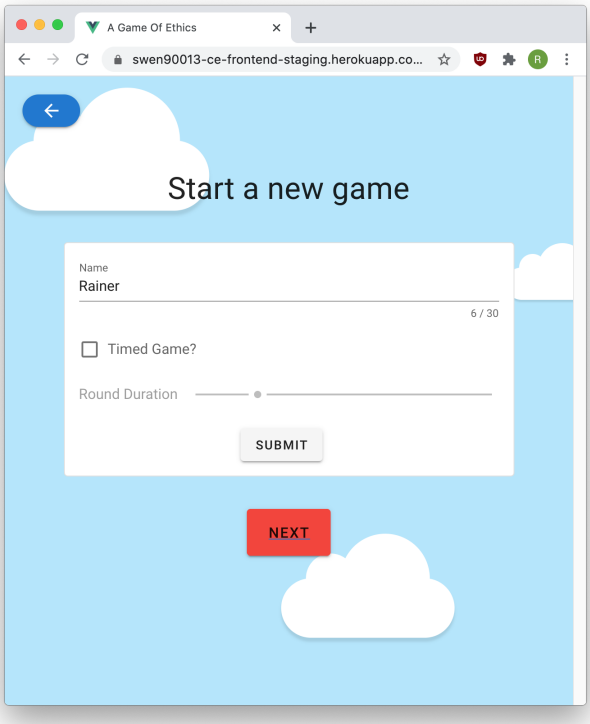
Appendices

Appendix 1 - Illustrative screenshots

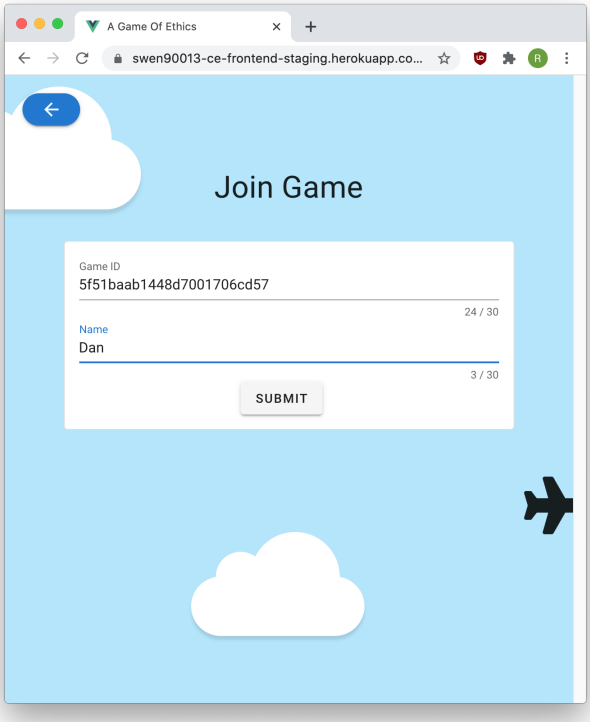
New user interface



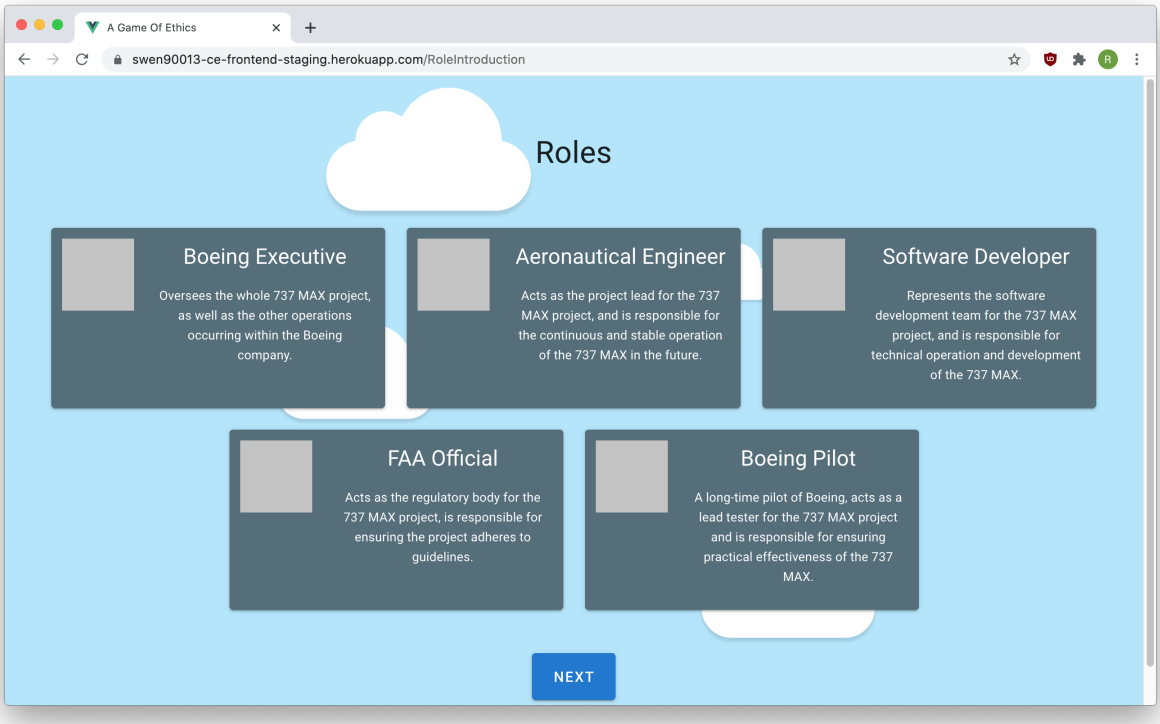
Starting a game



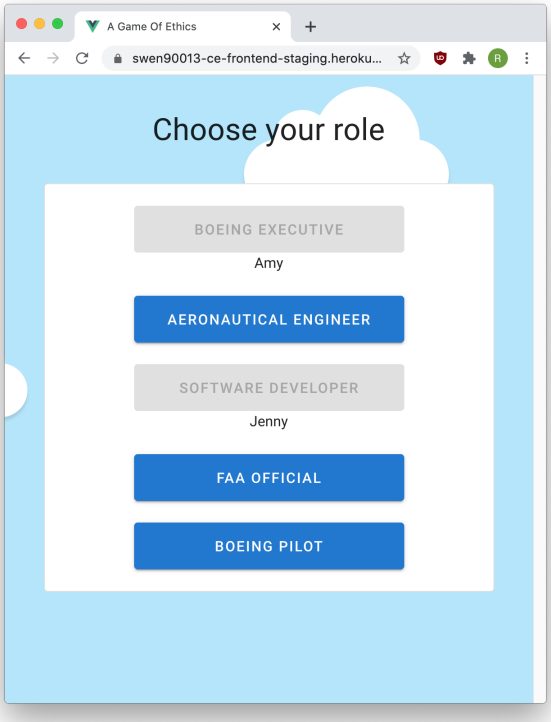
Joining a game



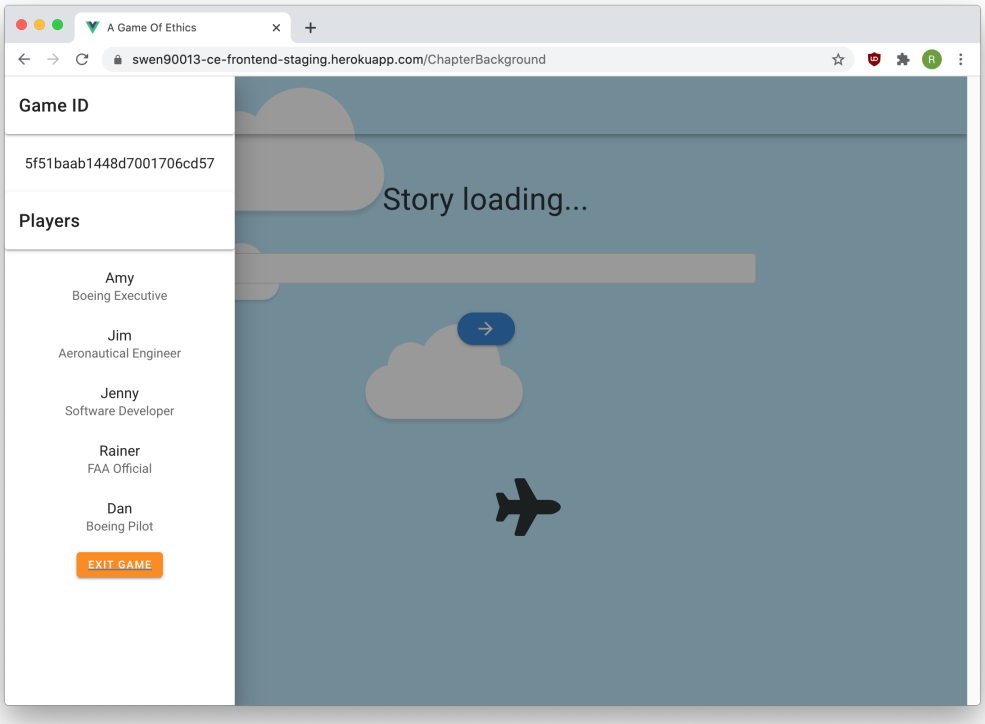
Role information



Choosing a role



In-game status



Appendix 2 - Tasks completed in Sprint 2

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
CE90013-201	Document Review Process	☑	17 Aug, 2020	24 Aug, 2020		Akhmetzhan Kussainov	Akhmetzhan Kussainov	⏫	DONE	Done
CE90013-200	Document Project Coding Standards	☑	17 Aug, 2020	24 Aug, 2020		Akhmetzhan Kussainov	Akhmetzhan Kussainov	⏫	DONE	Done
CE90013-198	US08_Frontend: Chapter information page	☑	15 Aug, 2020	30 Aug, 2020		CHRISTINA XU	Rainer Selby	⏫	DONE	Done
CE90013-197	US21_Backend_01: Initialise testing frameworks	☑	14 Aug, 2020	21 Aug, 2020		Yu Guo	Rainer Selby	⏫	DONE	Done
CE90013-195	US20_Frontend: Investigate sockets and connect functionalities with back-end	☑	14 Aug, 2020	30 Aug, 2020		Rainer Selby	Yuhen LI	⏫	DONE	Done
CE90013-194	US21_Frontend_05: session handling	☑	14 Aug, 2020	26 Aug, 2020		Rainer Selby	Yuhen LI	⏫	DONE	Done
CE90013-193	US21_Frontend_04: prompt Error messages	☑	14 Aug, 2020	30 Aug, 2020		Yuhen LI	Yuhen LI	⏫	DONE	Done
CE90013-192	US21_Frontend_03: Add test cases to test current functionality	☑	14 Aug, 2020	30 Aug, 2020		PEIWEN JIN	Yuhen LI	⏫	DONE	Done
CE90013-191	US21_Frontend_02: Add git hooks	☑	14 Aug, 2020	30 Aug, 2020		PEIWEN JIN	Yuhen LI	⏫	DONE	Done
CE90013-190	US21_Frontend_01: Initialise Testing Frameworks	☑	14 Aug, 2020	18 Aug, 2020		PEIWEN JIN	Yuhen LI	⏫	DONE	Done
CE90013-189	US12_Frontend: see all decision page	☑	14 Aug, 2020	30 Aug, 2020		Yuhen LI	Yuhen LI	⏫	DONE	Done

CE900 13-188	US09_Frontend_02: Refactor UI using Vuetify UI Framework	☑	14 Aug, 2020	18 Aug, 2020	Eric Sciberras	Yuhen LI	⏫	DONE	Done
CE900 13-187	US09_Frontend_01: Add In-game menu	☑	14 Aug, 2020	30 Aug, 2020	CHRISTINA XU	Yuhen LI	⏫	DONE	Done
CE900 13-186	US19_Frontend: Discussion page with time counter	☑	14 Aug, 2020	30 Aug, 2020	Yuhen LI	Yuhen LI	⏫	DONE	Done
CE900 13-185	Document our testing approach	☑	14 Aug, 2020	19 Aug, 2020	Rainer Selby	Rainer Selby	⏫	DONE	Done
CE900 13-180	US_04_Frontend: Choose your role page	☑	14 Aug, 2020	20 Aug, 2020	CHRISTINA XU	Yuhen LI	⏫	DONE	Done
CE900 13-179	US05_Frontend: Add all role description page	☑	14 Aug, 2020	24 Aug, 2020	CHRISTINA XU	Yuhen LI	⏫	DONE	Done
CE900 13-178	US04_Backend_04: Test role choosing in backend	☑	13 Aug, 2020	31 Aug, 2020	Chenling Huang	Lu Lei	⏫	DONE	Done
CE900 13-177	US04_Backend_03: Enable start the game after finishing roles choosing	☑	13 Aug, 2020	02 Sep, 2020	Lu Lei	Lu Lei	⏫	DONE	Done
CE900 13-176	US04_Backend_02: Disable the unavailable role	☑	13 Aug, 2020	26 Aug, 2020	Chenling Huang	Lu Lei	⏫	DONE	Done
CE900 13-175	US04_Backend_01: Fetch avaliable roles from database	☑	13 Aug, 2020	26 Aug, 2020	Chenling Huang	Lu Lei	⏫	DONE	Done
CE900 13-174	US12_Backend_04: Testing of "See All Decisions"	☑	13 Aug, 2020	28 Aug, 2020	Yu Guo	Lu Lei	⏫	DONE	Done
CE900 13-173	US12_Backend_03: Response to the request for all decisions from frontend	☑	13 Aug, 2020	02 Sep, 2020	Lu Lei	Lu Lei	⏫	DONE	Done
CE900 13-172	US12_Backend_02: Fetch decisions in the game from database	☑	13 Aug, 2020	28 Aug, 2020	Akhmetzhan Kussainov	Lu Lei	⏫	DONE	Done
CE900 13-171	US12_Backend_01: Create database scheme for decisions	☑	13 Aug, 2020	28 Aug, 2020	Angus Hudson	Lu Lei	⏫	DONE	Done
CE900 13-166	Deployment: Investigate and add process managers to Front and Backend Projects.	☑	12 Aug, 2020	26 Aug, 2020	Eric Sciberras	Eric Sciberras	⏫	DONE	Done
CE900 13-165	US15_Backend_01: Reasonable database structure to store the decision tree	☑	12 Aug, 2020	24 Aug, 2020	Angus Hudson	Lu Lei	⏫	DONE	Done
CE900 13-156	Deployment: Create Deployment DIagram	☑	10 Aug, 2020	31 Aug, 2020	Eric Sciberras	Eric Sciberras	⏫	DONE	Done

28 issues

Sprint 3 Report

Timeline

- 02/09/20: Sprint 3 Planning Meeting
- 08/09/20: Start sprint
- 30/09/20: End sprint
- 09/10/20: Sprint 3 Review with client
- 12/10/20: Sprint 3 Retrospective

Sprint planning

We conducted a Sprint Planning meeting on 02/09/20 - refer to minutes.

As of the previous sprint, five players can simultaneously join a game using their own device and choose a role. Some groundwork had also been done to facilitate the rounds and decision tree of the game.

The goal of this sprint then was to allow players to play multiple rounds of the game. This includes the ability to, for each round:

1. See some general information for the round, shown to all players
2. See some player-specific information
3. Be prompted to discuss a certain decision with the other players
4. Enter a choice for the decision, based on the player's personal preference
5. Determine the group outcome for the decision and show this to the players

Further goals included:

1. Further unit/integration testing, and acceptance testing
2. Start outlining the content for the decision tree and developing some sample content to demonstrate a couple of rounds

User stories

The following user stories were planned and completed for Sprint 3:

User story ID	As a...	I want...	so...	Priority	Sprint	Completed
US_07	Student	To receive a set of goals outlining what objectives my character needs to achieve by game end.	I have some guiding direction in terms of how I approach key decisions in-game.	Must have	3	✅
US_08	Student	To receive prompts where necessary to facilitate discussion or personal decision-making.	I am clearly aware at all times of exactly what is required of me at that time during the game.	Must have	3	✅
US_09	Student	To be presented with an intuitive and clear UI for any decision-making.	I can clearly understand all of the options that are available, as well as the current game situation.	Must have	2, 3	✅
US_10	Student	To be able to frequently discuss decisions with other characters in the game.	I can communicate decisions with classmates, and negotiate for better outcomes related to my goals.	Must have	3	✅
US_12	Student	To be able to see all chosen decisions made for all of my personal and group decisions.	I can get some insight into what other group members decided, and recall any forgotten decisions made earlier in the game.	Should have	3	✅

The following two qualitative user stories are considered done from a **functionality** point of view - the software work has been completed to allow these requirements to be met, and we have created some sample content used for demonstration purposes.

However these user stories may be further worked on in the next sprint, with further content to be crafted in consultation with the client.

User story ID	As a...	I want...	so...	Priority	Sprint	Completed (functionality)
US_15	Teacher	For the decision-making process to be relatively complex, in that there should be no clear-cut 'correct' decision.	I can feel confident that students who play won't follow the same line of decision-making, and will enjoy unique experiences depending upon their own decision-making habits.	Should have	3, 4	✅
US_16	Teacher	For the game to present asymmetric information and distribute asymmetric power, based upon the characters for each player.	The game more closely mimics the reality of a working industry environment, which should improve student engagement and outcomes.	Should have	3, 4	✅

The following user story was originally planned for this sprint. However, we discovered that implementing timer and ensuring that it is synchronised between players would add a significant amount of complexity. As this is a 'nice-to-have' feature, we decided not to implement in this sprint, and to check with the client if it is something we should consider in the final sprint.

User story ID	As a...	I want...	so...	Priority	Sprint	Completed
US_19	Teacher	To limit the discussion time for each decision in game	I can make students put more focus on the contradictive information and force them to make decisions, which will improve their critical thinking of whether their decisions are right to do.	Could have	3	

Tasks

Refer to Appendix 2 for a list of all tasks completed in Sprint 3, as per Jira.

Sprint review

A Sprint Review meeting was held with our client on 09/10/20 (see Sprint 3 Review minutes), where we demonstrated the deployed software to the client, and asked the client to interact hands-on with the software to get usability feedback. We received positive indications from the client.

We met our sprint goals, with the ability to play rounds of the game. For each round, the program will now allow the 5 players to:

- See some general information for the round
- See some player-specific information
- Be prompted to discuss a decision with the other players
- Enter an individual choice for the decision
- See the outcome for the collective group decision

We also made some improvements to the user experience, based on our informal end-to-end testing and feedback received in the prior sprint.

- The role selection page was overhauled, combining the description of each role with the role selection functionality
- User sessions are now better handled, with game session information kept in local storage, allowing the user to seamlessly continue the game even if they close or reload the page
- The main menu now provides the ability to re-join a game
- The game ID has been shortened to just 4 alphanumeric characters (previously 24 characters) - which is important as players must each manually type this code in to join a game!

Testing

The following testing was performed in Sprint 3, and results can be viewed at the following pages. See also our Testing Approach.

- Front-End Unit Testing
- Back-End Unit / Integration Testing
- Acceptance Testing

Deployment

The app was deployed to the following links as at the end of the sprint:

- Front-end: https://swen90013-ce-frontend-staging.herokuapp.com/
- Back-end: https://swen90013-ce-backend-staging.herokuapp.com/

GitHub release tags

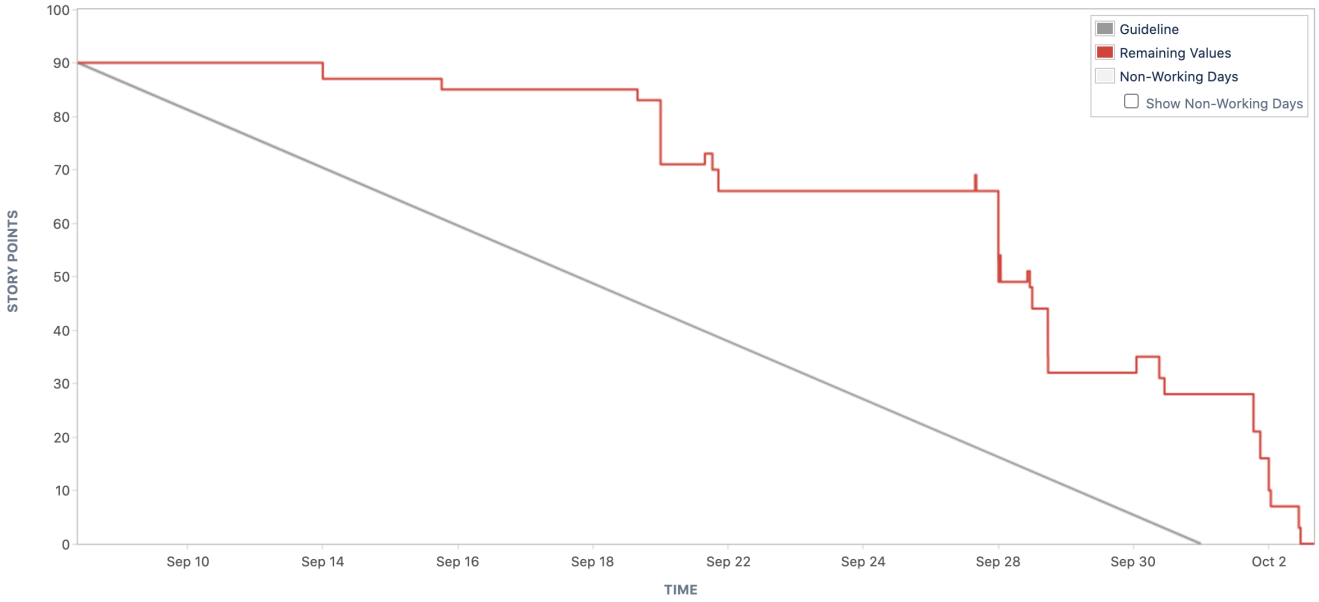
- Front-end: https://github.com/eric-sciberras/SWEN90013-2020-CE-Frontend/releases/tag/3.0.0

- Back-end: https://github.com/eric-sciberras/SWEN90013-2020-CE-Backend/releases/tag/3.0.0

Burndown chart

Our burndown chart reflects how we completed the planned task over the course of the sprint, and shows some progress in the first half of the sprint, with the pace accelerating in the second half. As in the previous sprint, some large drops occur particularly in the second half, as a large amount of tasks are finally closed off and reviewed (these tasks can finally be marked as 'Done' and be reflected on the chart).

As can be seen on the graph, a couple of tasks relating to integration/merging and deployment still had to be finalised as at the end of the sprint, however these were completed within two days of the sprint end date.



Sprint retrospective

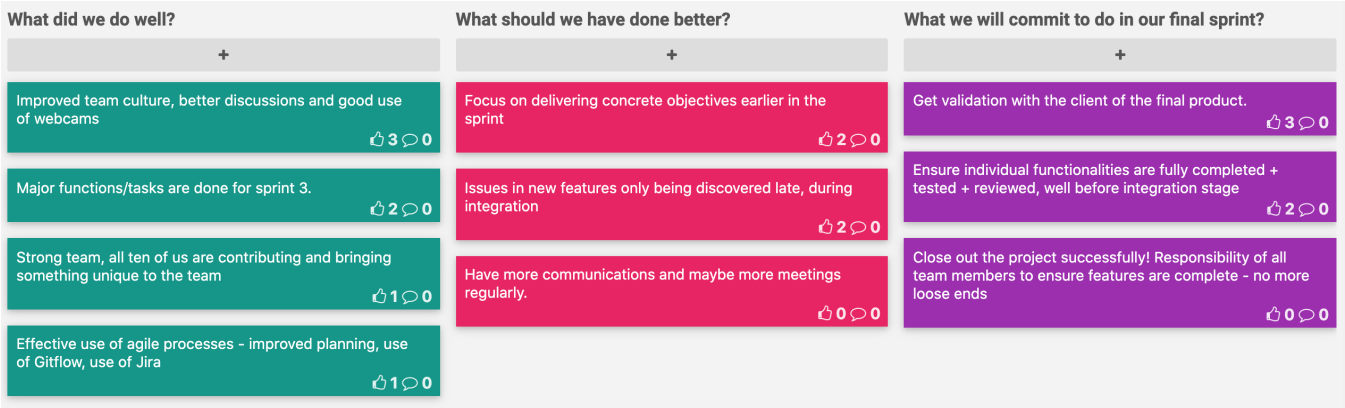
The sprint retrospective meeting was held on 12/10/20 (minutes).

The team were proud of their success so far and how the team culture and participation has become even stronger as the project has progressed. We noted how all team members are now using webcams, and how this has helped improve the level of interaction and discussions in meetings.

Some items to have done better were having more concrete objectives during the sprint, and also some occasions where new features contained issues that were only revealed late in the sprint.

To overcome this, in our next and final sprint, we will commit to ensuring functionalities are fully completed, tested and reviewed earlier on, well before integration.

We also commit to getting final validation from the client as to our final product, and aiming to tie up all loose ends in order to have a successful conclusion to our project.



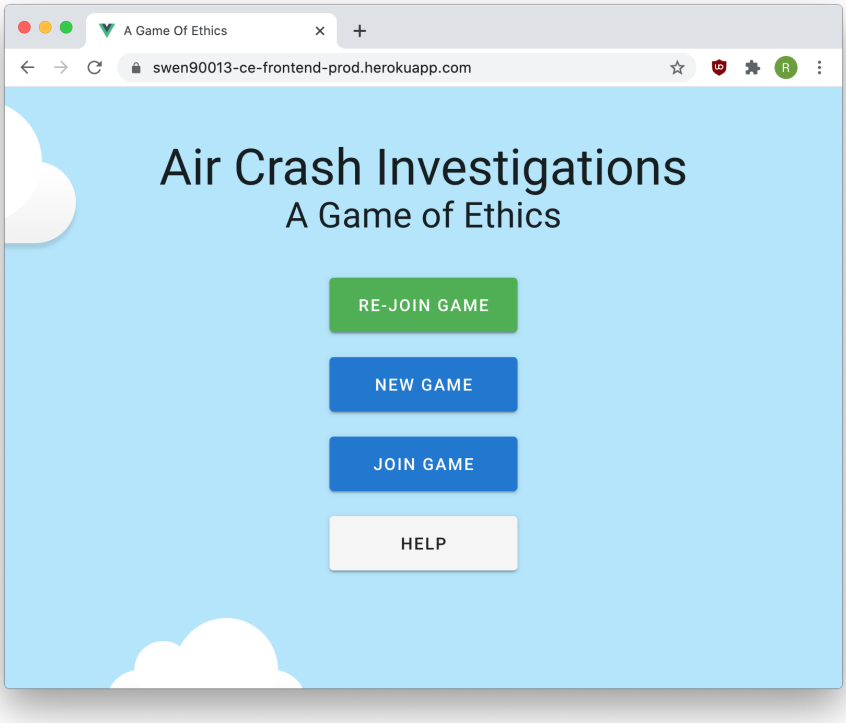
Appendices

Appendix 1 - Illustrative screenshots

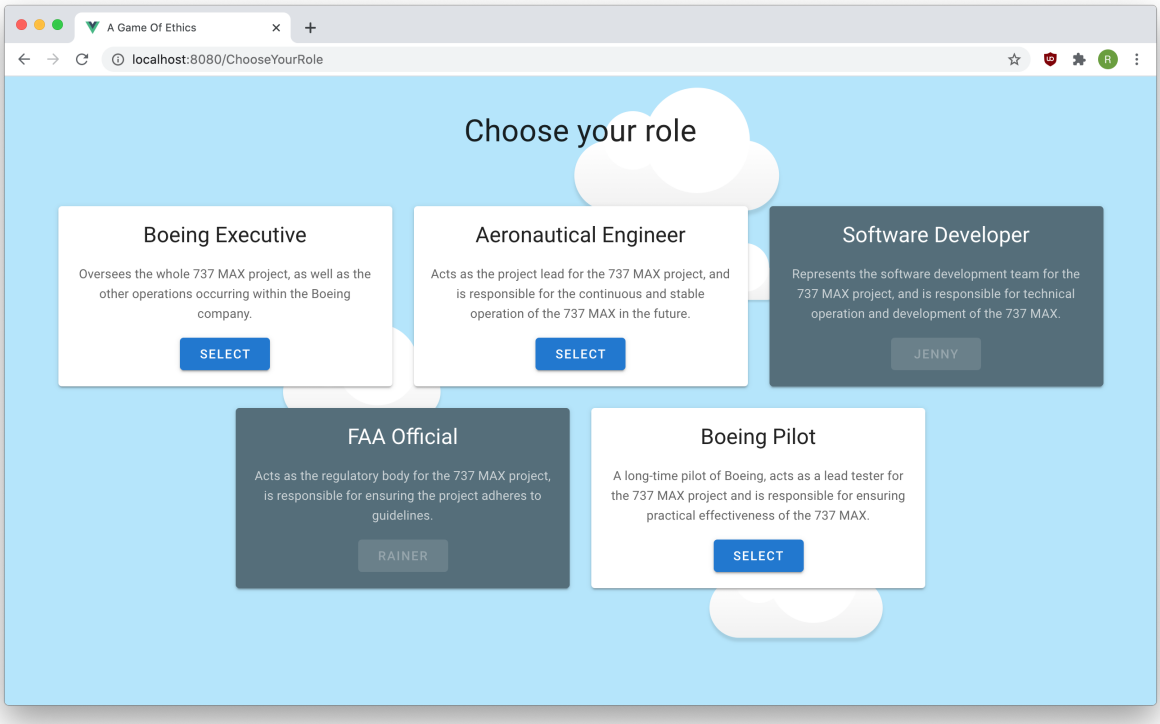
Note the content displayed within the game is indicative; it is for demonstration purposes. The focus of our work has been on the functionality, with the content to be further worked on in consultation with the client.

Re-join game

Button is available when a game session is still in the browser's local storage.

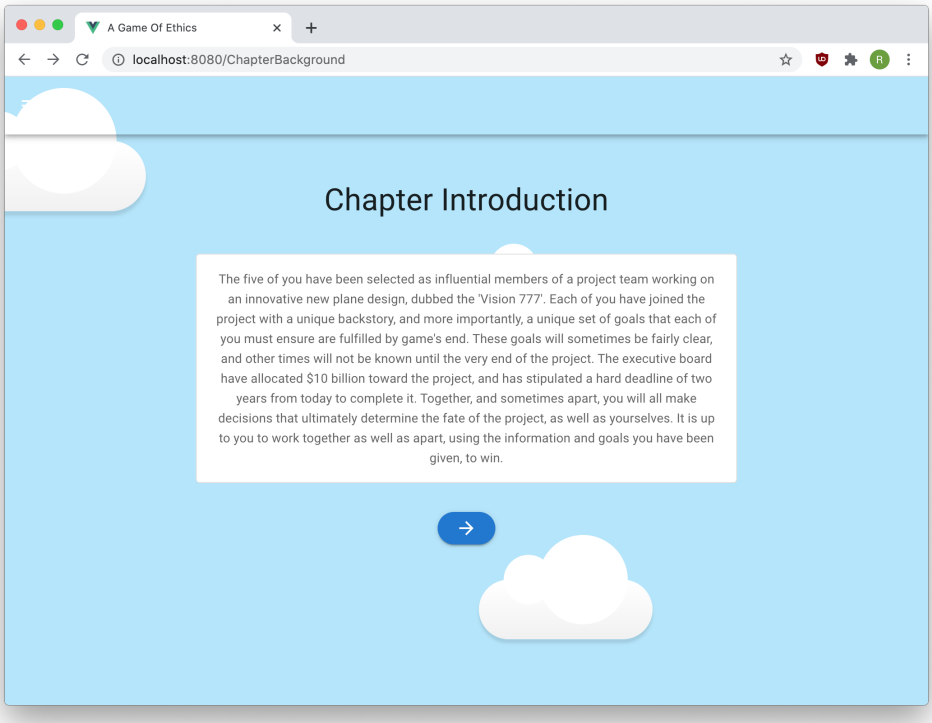


Improved role selection screen



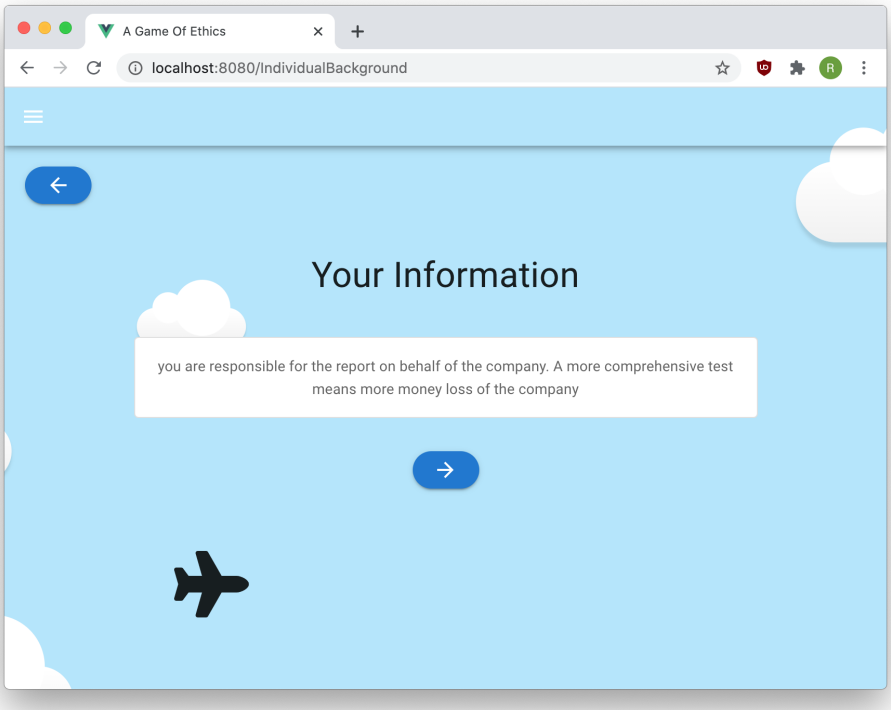
Chapter introduction

Shown to all players.

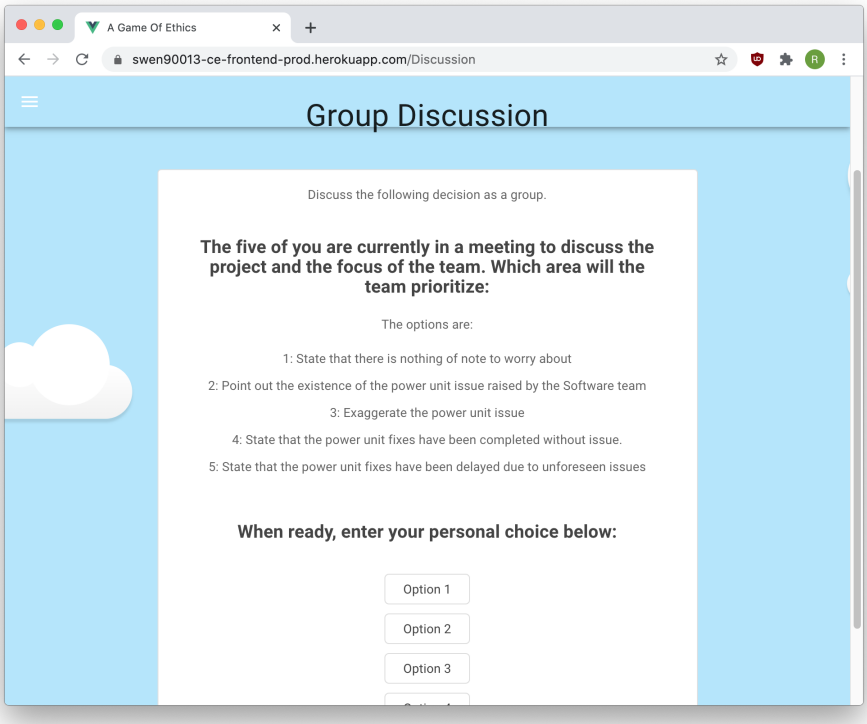


Your information

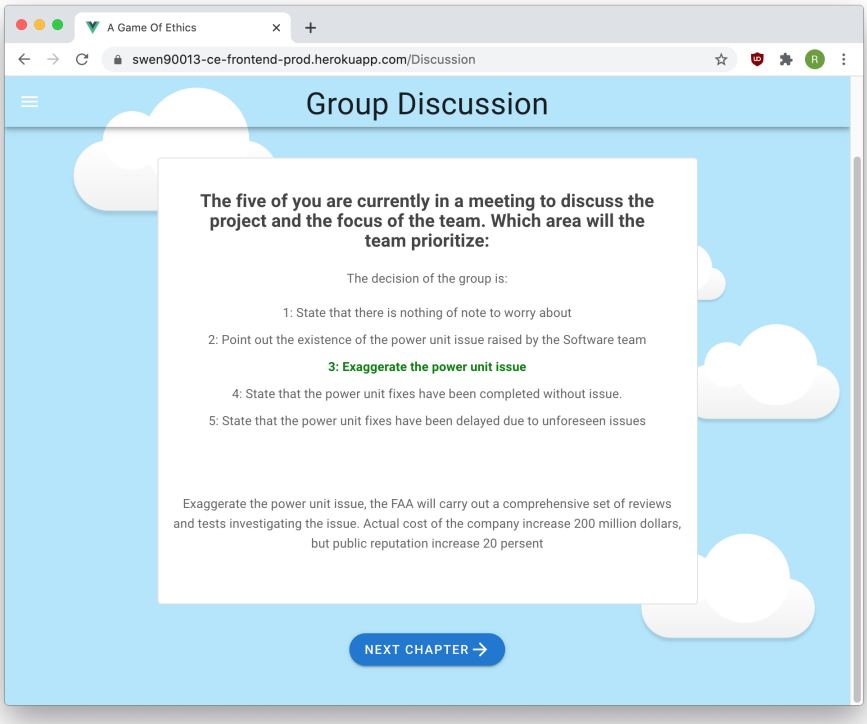
Each player sees a different piece of information relating to the chapter



Group discussion



Group decision result



Appendix 2 - Tasks completed in Sprint 3

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
CE90013-237	Integrate front-end to back-end for Sprint 3	☑	30 Sep, 2020	02 Oct, 2020		Rainer Selby	Rainer Selby	⏫	DONE	Done
CE90013-236	Endeavour: Write and submit award applications	☑	28 Sep, 2020	28 Sep, 2020		Angus Hudson	Rainer Selby	⏫	DONE	Done
CE90013-235	Endeavour: Create "Road to Endeavour" video	☑	28 Sep, 2020	28 Sep, 2020		Angus Hudson	Rainer Selby	⏫	DONE	Done
CE90013-234	Endeavour: Complete risk assessment documentation	☑	28 Sep, 2020	28 Sep, 2020		Angus Hudson	Rainer Selby	⏫	DONE	Done
CE90013-233	US_21: Acceptance testing as at Sprint 3	☑	25 Sep, 2020	01 Oct, 2020		Rainer Selby	Rainer Selby	⏫	DONE	Done
CE90013-232	US_15: Update API specification for Sprint 3 functionality	☑	21 Sep, 2020	01 Oct, 2020		Rainer Selby	Rainer Selby	⏫	DONE	Done
CE90013-229	US_21 frontend_02: update testing plan and testing results for sprint3	☑	07 Sep, 2020	28 Sep, 2020		PEIWEN JIN	Yuhen LI	⏫	DONE	Done
CE90013-228	US_21 frontend: Add test suites to test what we have achieved in sprint2 and some of sprint3 features	☑	07 Sep, 2020	28 Sep, 2020		PEIWEN JIN	Yuhen LI	⏫	DONE	Done
CE90013-227	US_14 frontend: Refine error message box(other APIs)	☑	07 Sep, 2020	21 Sep, 2020		Yuhen LI	Yuhen LI	⏫	DONE	Done
CE90013-226	US_12 frontend: See all decisions connect with backend	☑	07 Sep, 2020	28 Sep, 2020		Yuhen LI	Yuhen LI	⏫	DONE	Done

CE900 13-225	US_15 frontend: Create the 'enter choice'/'result' page	☑	07 Sep, 2020	30 Sep, 2020	Yuhen LI	Yuhen LI	⏫	DONE	Done
CE900 13-224	US_10 frontend: Create the 'decision'/'discussion' page	☑	07 Sep, 2020	30 Sep, 2020	Yuhen LI	Yuhen LI	⏫	DONE	Done
CE900 13-223	US_07 frontend: Role background page(with goal)	☑	07 Sep, 2020	21 Sep, 2020	PEIWEN JIN	Yuhen LI	⏫	DONE	Done
CE900 13-222	US_08: frontend_02: Chapter page_individual information	☑	07 Sep, 2020	21 Sep, 2020	CHRISTINA XU	Yuhen LI	⏫	DONE	Done
CE900 13-221	US_08 frontend_01: Chapter page_general information	☑	07 Sep, 2020	21 Sep, 2020	CHRISTINA XU	Yuhen LI	⏫	DONE	Done
CE900 13-220	US_20 frontend_03: Session handling	☑	07 Sep, 2020	01 Oct, 2020	Rainer Selby	Yuhen LI	⏫	DONE	Done
CE900 13-219	US_20 frontend_02: Fix bugs introduced from UI refactor	☑	07 Sep, 2020	28 Sep, 2020	Eric Sciberras	Yuhen LI	⏫	DONE	Done
CE900 13-218	US_20 frontend_01: Merge role description and choose your role pages	☑	07 Sep, 2020	13 Sep, 2020	Rainer Selby	Yuhen LI	⏫	DONE	Done
CE900 13-216	Improvement_backend_01: Shorten the game ID	☑	07 Sep, 2020	18 Sep, 2020	Eric Sciberras	Lu Lei	⏫	DONE	Done
CE900 13-215	US_10 backend_01: Modify the question schema to record the status of discussion and enable "start discussion" after everyone is ready	☑	07 Sep, 2020	26 Sep, 2020	Yu Guo	Lu Lei	⏫	DONE	Done
CE900 13-214	US_16 backend_03: Test the implementation (calculation function, save to DecisionList and response)	☑	07 Sep, 2020	02 Oct, 2020	Chenling Huang	Lu Lei	⏫	DONE	Done
CE900 13-213	US_16 backend_02: Implement the calculation function of final option, save the option in decisionList and deliver it to the frontend	☑	07 Sep, 2020	02 Oct, 2020	Akhmetzhan Kussainov	Lu Lei	🔺	DONE	Done
CE900 13-212	US_16 backend_01: Modify Decision model and add the weights in database	☑	07 Sep, 2020	02 Oct, 2020	Akhmetzhan Kussainov	Lu Lei	🔺	DONE	Done
CE900 13-211	US_15 backend_06: Fill more data in the decision tree	☑	07 Sep, 2020	02 Oct, 2020	Yu Guo	Lu Lei	⏫	DONE	Done
CE900 13-210	US_15 backend_05: Test decision making	☑	07 Sep, 2020	28 Sep, 2020	Chenling Huang	Lu Lei	⏫	DONE	Done
CE900 13-209	US_15 backend_04: Implement/ modify decision-making function	☑	07 Sep, 2020	28 Sep, 2020	Chenling Huang	Lu Lei	🔺	DONE	Done
CE900 13-208	US_15 backend_03: Modify the new game function to load the tree (as well as the testing function)	☑	07 Sep, 2020	19 Sep, 2020	Lu Lei	Lu Lei	🔺	DONE	Done
CE900 13-207	US_15 backend_02: Design and insert the example data in decision tree	☑	07 Sep, 2020	26 Sep, 2020	Yu Guo	Lu Lei	🔺	DONE	Done
CE900 13-206	US_15 backend_01: Modify Company, Decision and Option schema	☑	07 Sep, 2020	19 Sep, 2020	Lu Lei	Lu Lei	🔺	DONE	Done
CE900 13-205	US_07 backend_02: Test the function "goals outlining"	☑	07 Sep, 2020	28 Sep, 2020	Lu Lei	Lu Lei	⏫	DONE	Done
CE900 13-204	US_07 backend_01: Modify Role Schema and Implement the function	☑	07 Sep, 2020	20 Sep, 2020	Yu Guo	Lu Lei	⏫	DONE	Done

CE90013-202	Deployment: Add github actions integration to Frontend Repo	☑	30 Aug, 2020	15 Sep, 2020	Eric Sciberras	Eric Sciberras	⏫	DONE	Done

32 issues

Sprint 4 Report

Timeline

- 12/10/20: Sprint 4 Planning Meeting
- 13/10/20: Start sprint
- 06/11/20: End sprint
- 12/11/20: Sprint 4 Review / Handover with client

Sprint planning

We conducted a Sprint Planning meeting on 12/10/20 - refer to minutes.

As of the start of sprint 4, our app now allows five players to play a round of the game.

Our goal for sprint 4 is to deliver a well-tested, completed and playable product.

The application will be able to run a game with five players from start to finish, over multiple rounds, and be demonstrated with some basic content we will develop in consultation the client.

We will continue comprehensively testing the product, and also perform acceptance testing and performance testing to ensure it can be used in realistic environment..

We will produce a final deployment, and wrap up the project codebase and documentation to bring the project in a state that it may be handed over and easily taken over by a future development team.

User stories

The following **functional** user stories are planned for Sprint 4:

User story ID	As a...	I want...	so...	Priority	Sprint	Completed
US_14	Student	To be prompted for confirmation whenever I make a decision.	I can be sure that I did not make the wrong decision.	Should have	4	See Note A
US_17	Student	To receive concrete outcomes at the conclusion of the game related to my goals, as well as the plot, all based on decisions made throughout the game.	I can clearly see whether or not I achieved my character goals or not, and also reflect upon whether personal success, if attained, came at any cost to plot outcomes.	Must have	4	✅
US_18	Student	To receive some feedback in the form of hints after the game is completed and results presented.	I can get some takeaways about different ways to approach my decision-making for future playthroughs.	Could Have	4	✅

Note A - The implementation of this user story was tweaked, to better achieve the goal of making sure that the user does not make a wrong decision - instead of buttons for each option which trigger a confirmation box before locking the answer in, the answer is selected by radio buttons. This is a more user-friendly way to prevent an accidental action.

The following **non-functional** user stories are planned to be achieved in Sprint 4. These are more qualitative in nature and so may not be linked to individual tasks or branches; rather, they will be met with the successful delivery of the game and by developing some effective demonstration content for the game with the client.

User story ID	As a...	I want...	so...	Priority	Sprint	Completed

US_15	Teacher	For the decision-making process to be relatively complex, in that there should be no clear-cut 'correct' decision.	I can feel confident that students who play won't follow the same line of decision-making, and will enjoy unique experiences depending upon their own decision-making habits.	Should have	3, 4	✅
US_16	Teacher	For the game to present asymmetric information and distribute asymmetric power, based upon the characters for each player.	The game more closely mimics the reality of a working industry environment, which should improve student engagement and outcomes.	Should have	3, 4	✅
US_22	Student	The rules of the game to be easy and understandable.	I can intuitively understand how the game works quickly.	Should have	4	✅
US_23	Student Teacher	The game to have some educational meaning.	I can learn what ethical issues I have to face in an industry setting and learn how to make better decisions as a result.	Must have	4	✅
US_24	Student	The game is fun and motivational.	I can remain interested in the game and it's development throughout and to play to the end.	Should have	4	✅
US_25	Student	The game to be insightful.	The learning outcomes of the game will stick with me when I enter the industry.	Should have	4	✅

✅ We consider these user stories achieved based on the game content we have developed.

Tasks

Refer to Appendix 2 for a list of all tasks completed in Sprint 4, as per Jira.

Sprint review

A sprint 4 review / handover meeting was conducted on 12/11/20 with the client, supervisor, lecturer and other CIS academics in attendance (see minutes).

As of the end of the sprint, we have successfully released a product that is fully playable from start to end, with a full set of content for the Boeing case study in the decision tree. The decisions, story line and outcomes presented to the group are dynamic based on the choices of the players.

At the back-end, we performed further development for the decision tree, in order to implement all of the functionality for the decision-making, navigating the decision tree, and internal score during the game.

At the front-end, the remaining functionality of the game was implemented. Further, many significant improvements were made to the user interface, with a number of interfaces overhauled, and a number of issues identified in user testing rectified.

Content

We have created a full set of content, allowing a full game to be played and to help demonstrate how the Boeing case study can be applied to our program. This set of content has been implemented into into the program as of this release - comprising around 30 rounds. Note that each game only uses a subset of these 30 rounds; the rounds presented, and the path taken in the game, depends on the decisions the players make.

Refer to Decision Tree (Final plot) for the full set of game content that has been loaded into the released game.

Testing

The following testing was performed in Sprint 4, with some automated tests re-performed and some additional unit tests added for new functionalities. See also our Testing Approach.

- Front-End Unit Testing
- Back-End Unit / Integration Testing

Acceptance testing was performed to test the app against its requirements (user stories):

- Acceptance Testing

In addition, some user testing with users from outside this subject, in order to help evaluate usability:

- User Testing

Lastly, end-to-end testing was performed as a final check of the application workflows in the deployed environment:

- End-to-End Testing

Deployment

The final release of this app has been deployed to the following links:

- Front-end: https://game-of-ethics.herokuapp.com/
- Back-end: https://game-of-ethics-backend.herokuapp.com/

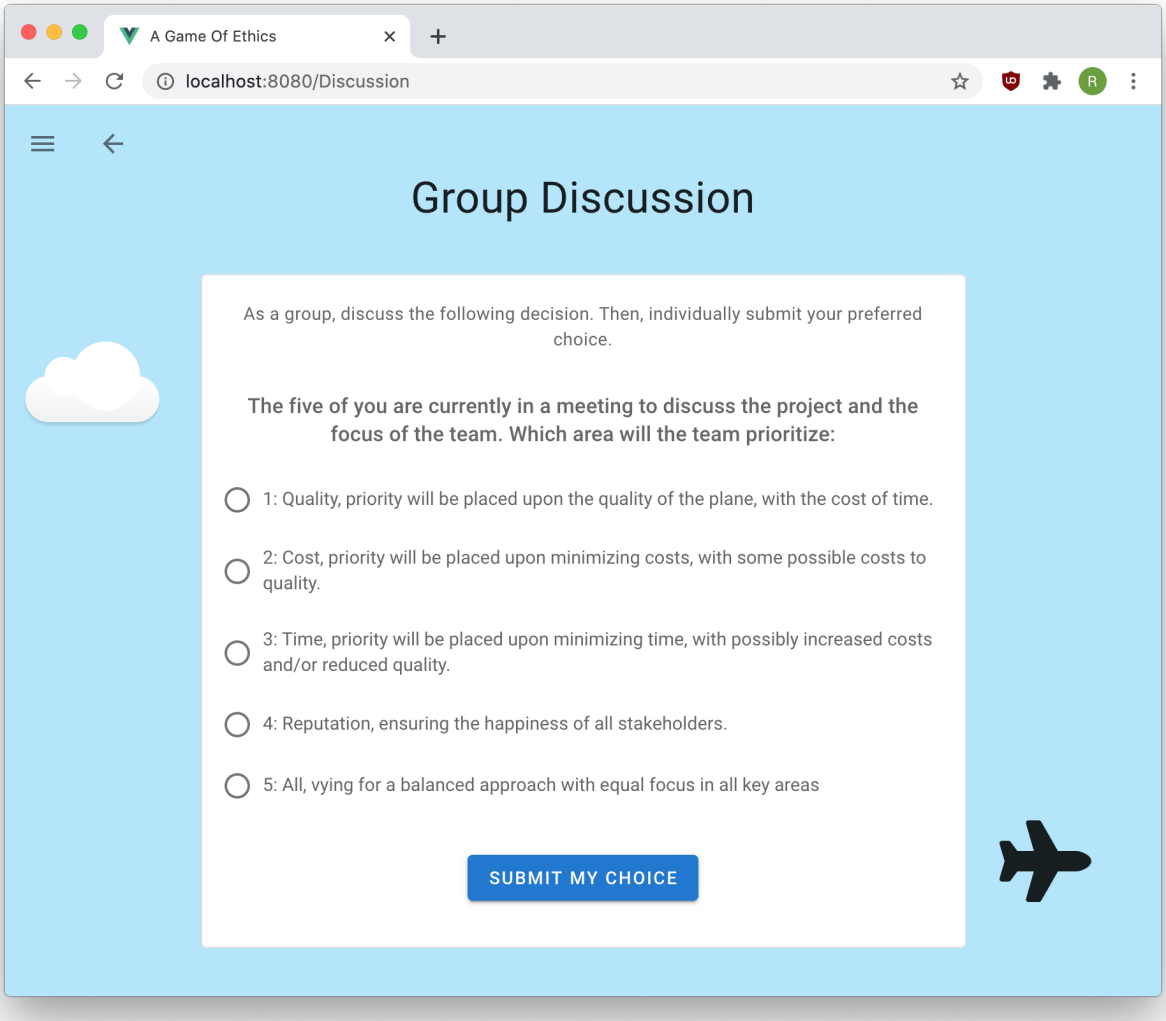
GitHub release tags

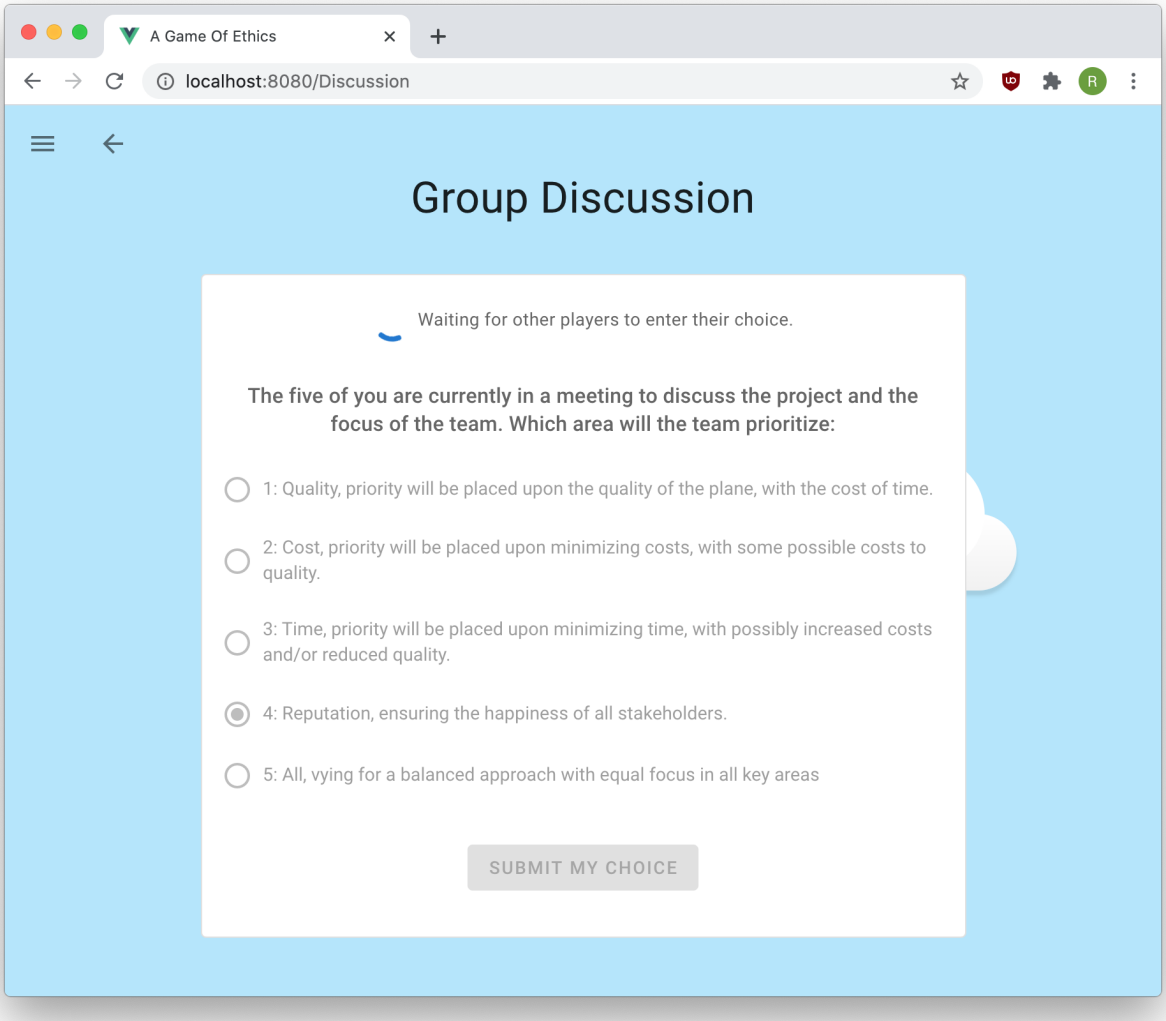
- Front-end: https://github.com/a-game-of-ethics/SWEN90013-2020-CE-Frontend/releases/tag/4.0.0
- Back-end: https://github.com/a-game-of-ethics/SWEN90013-2020-CE-Backend/releases/tag/4.0.0

Appendices

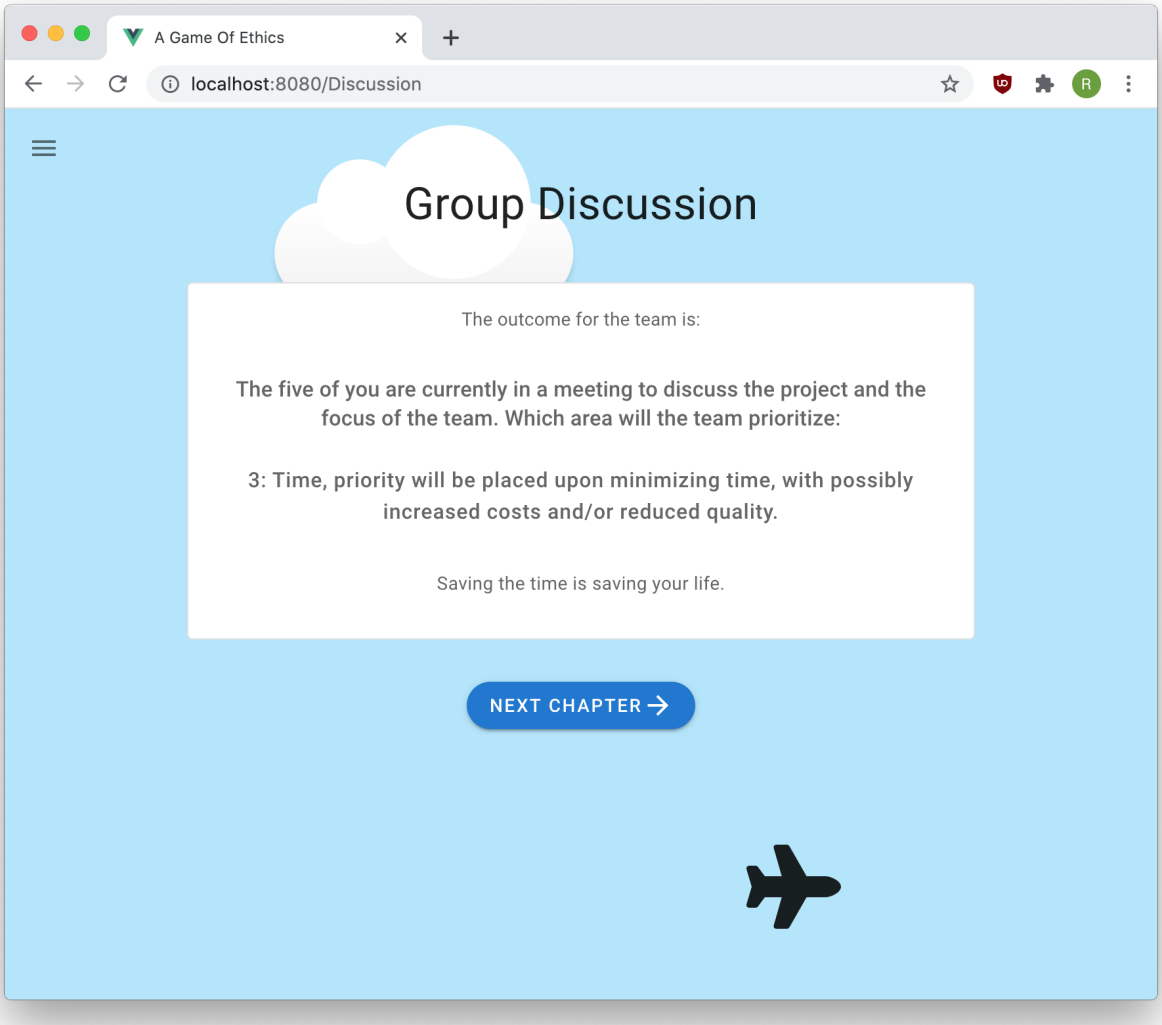
Appendix 1 - Illustrative screenshots

Improved decision interface

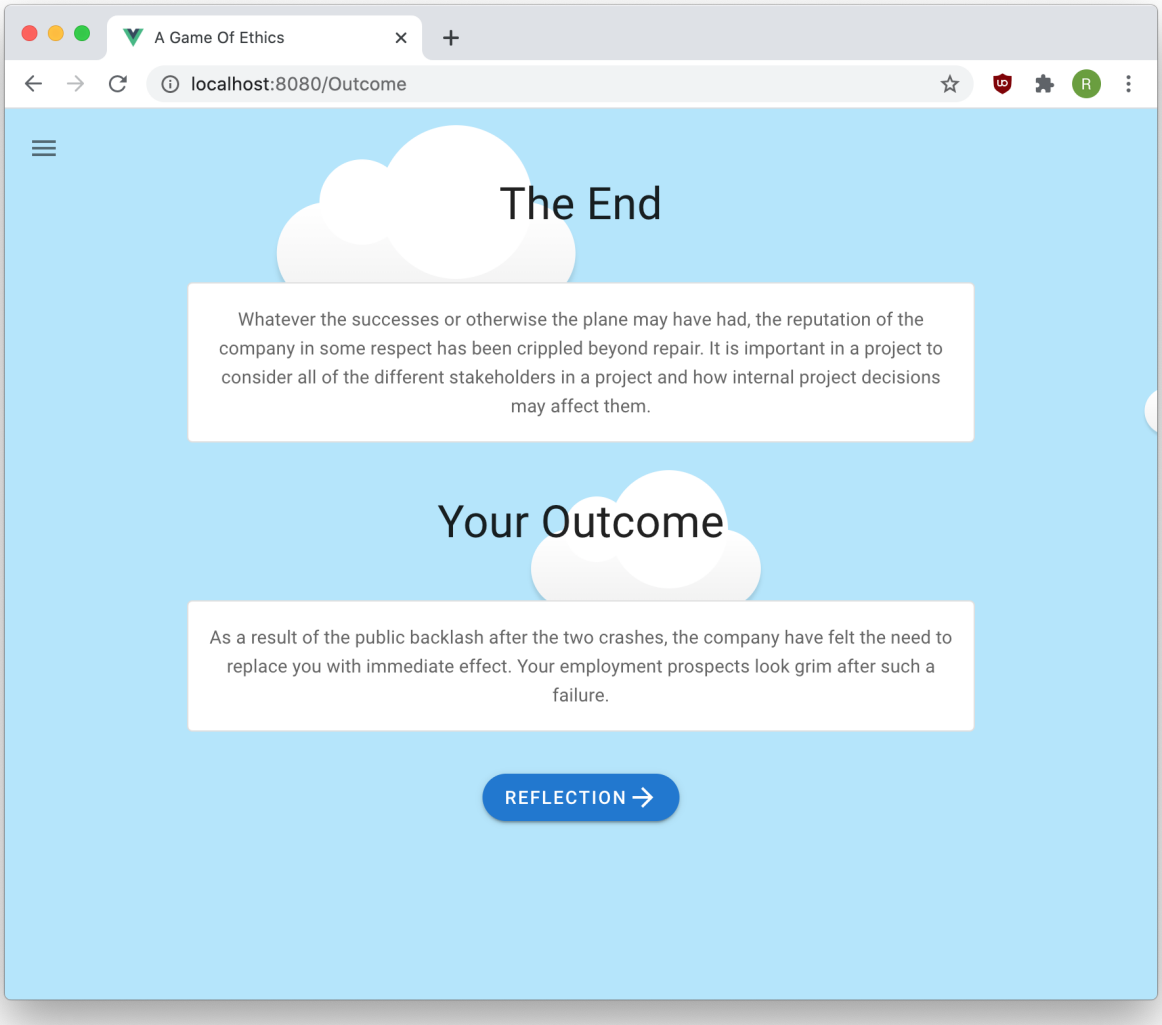




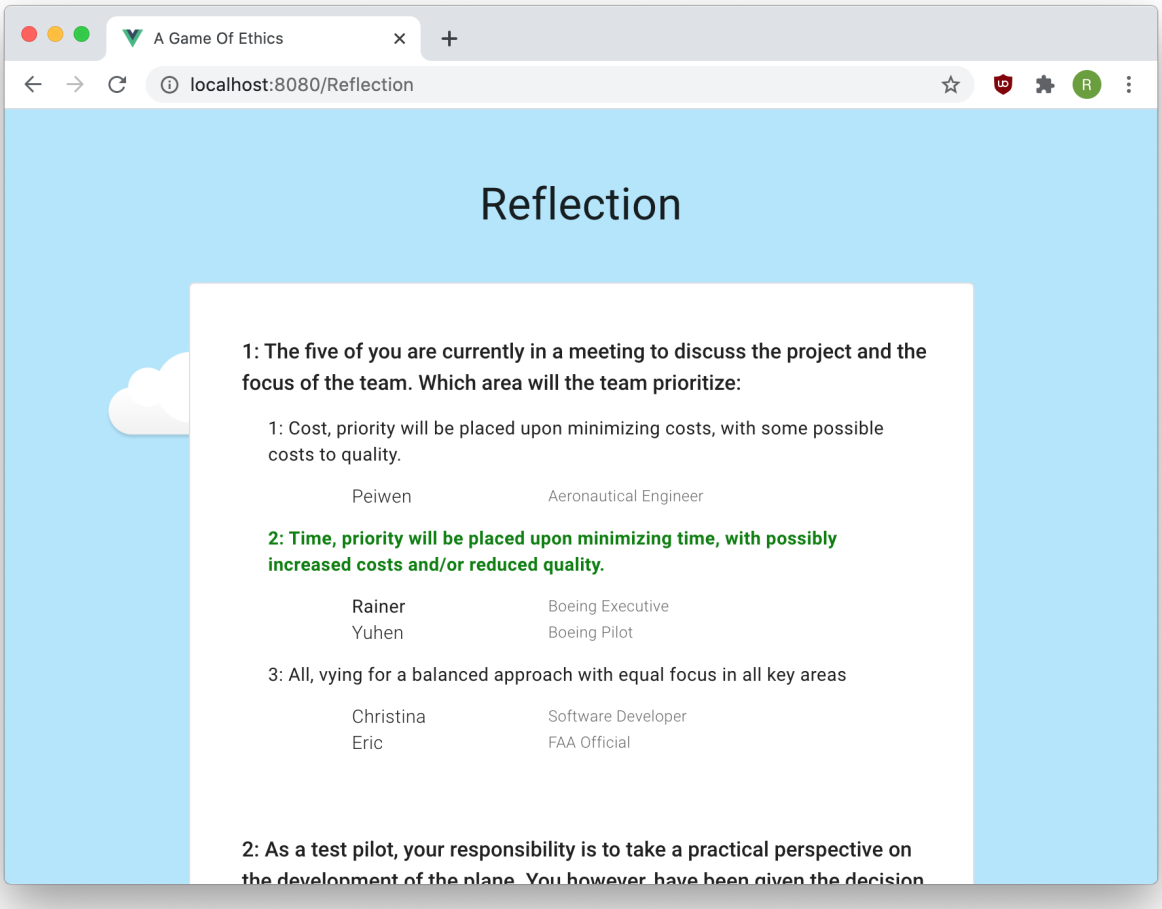
Round outcome



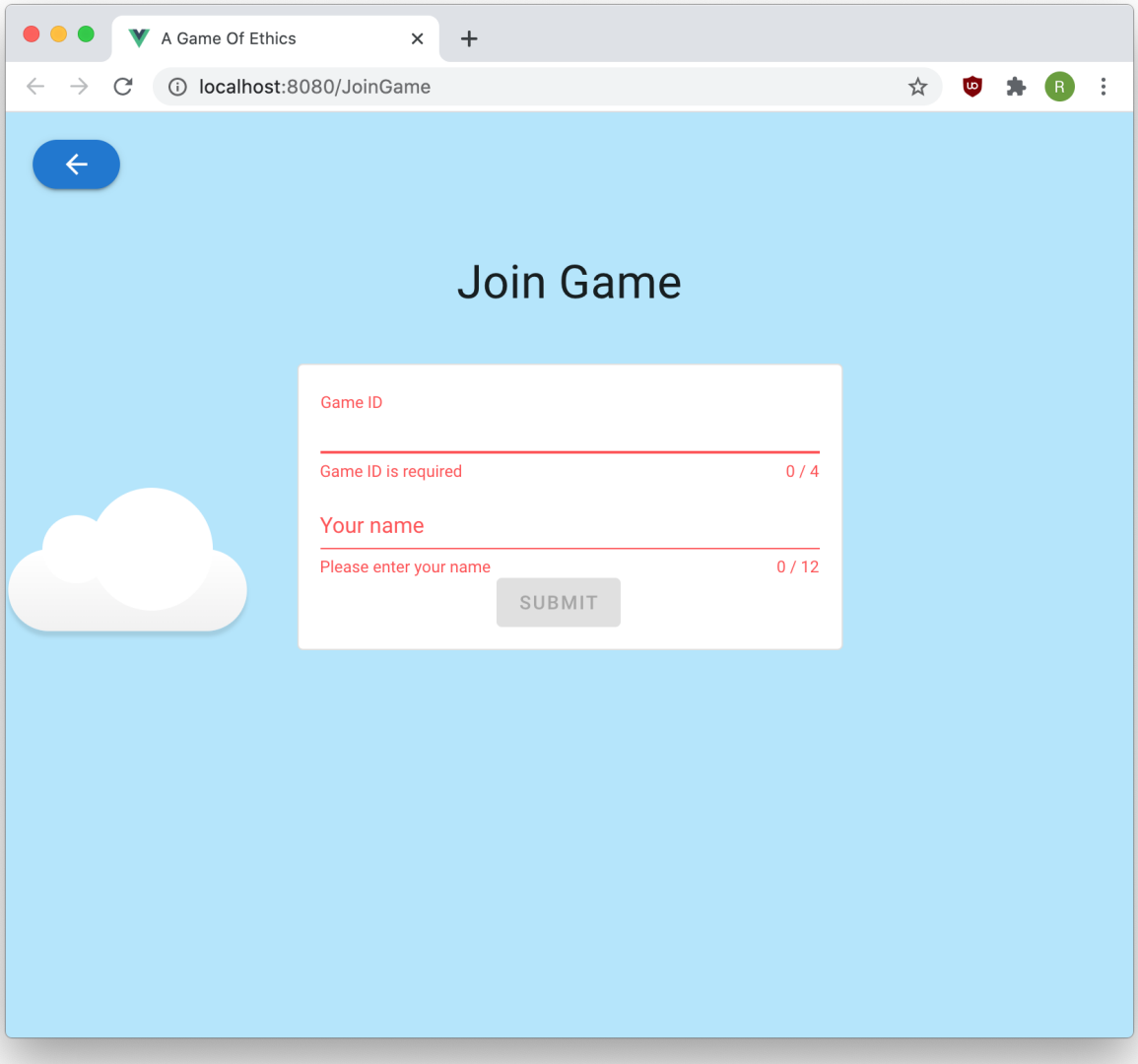
Game conclusion

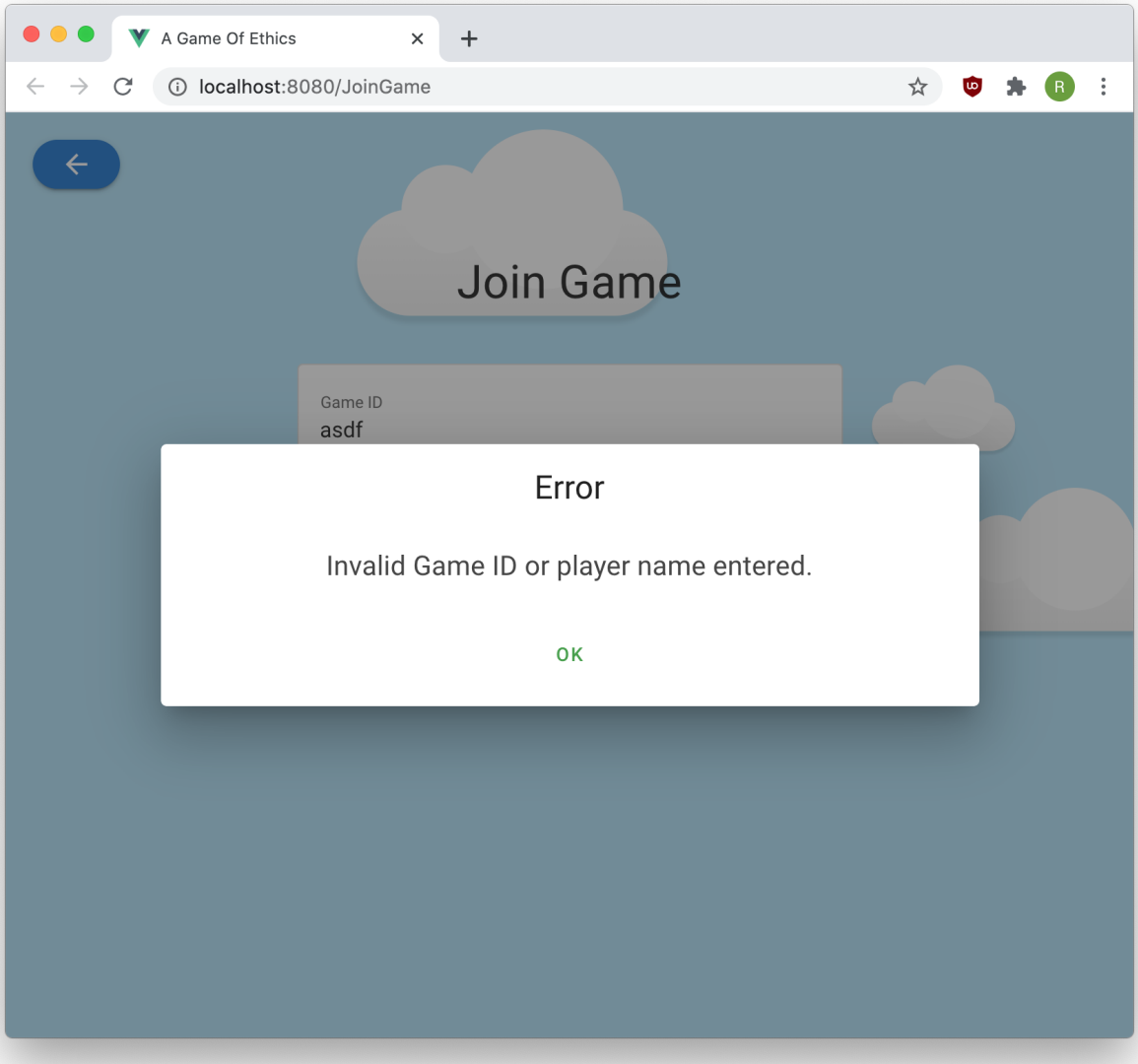


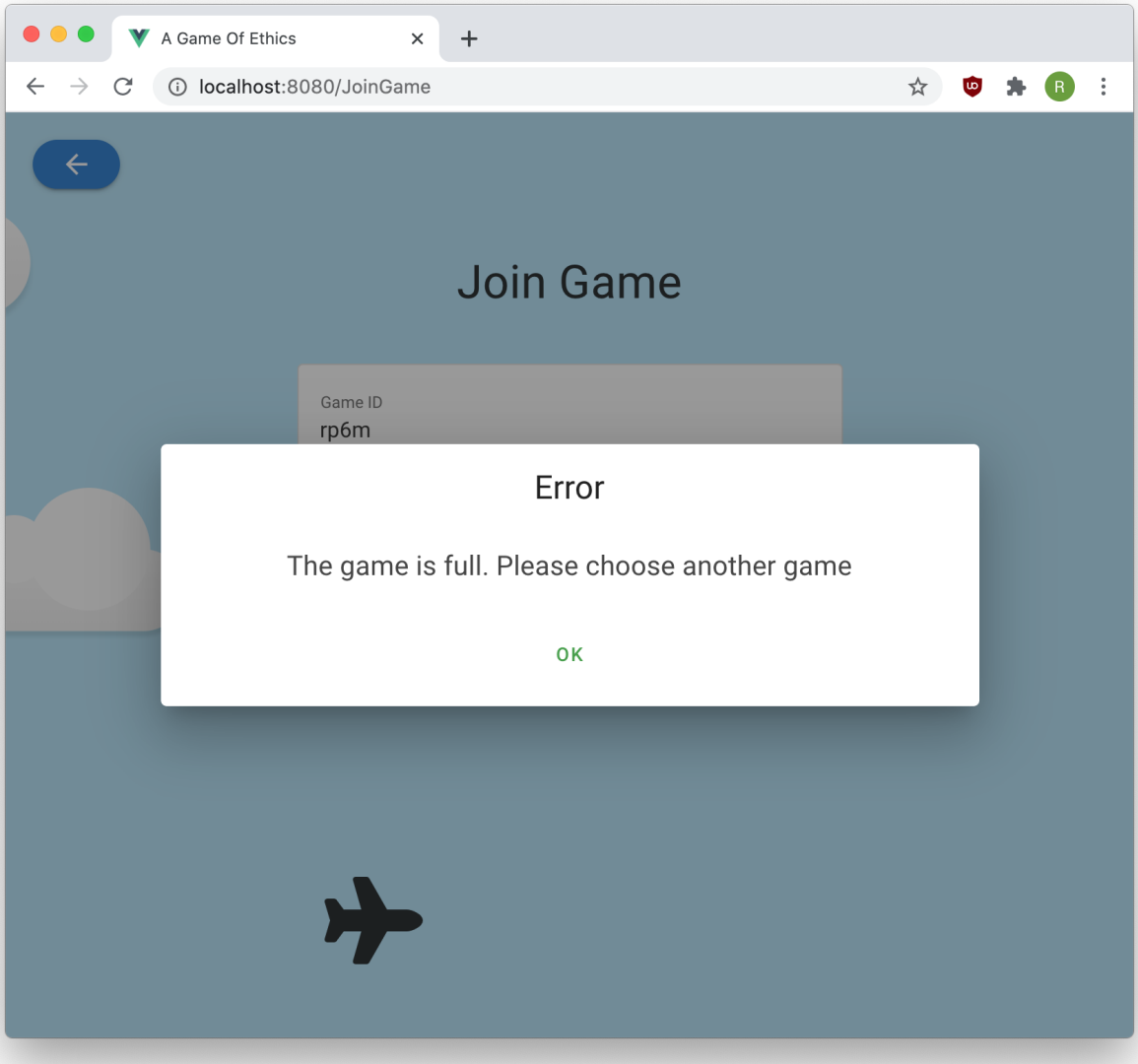
Reflection page

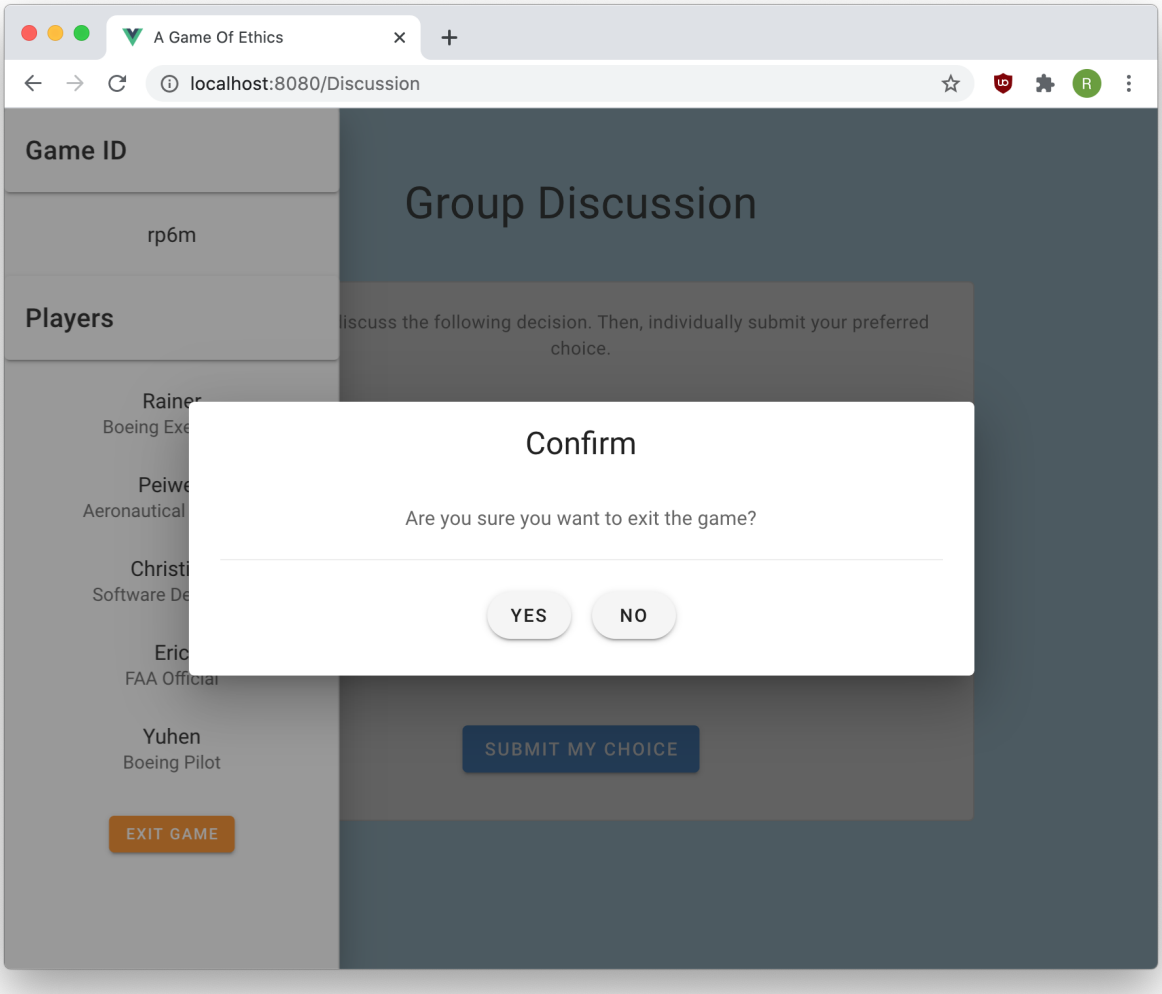


Input validation / user confirmation


A Game Of Ethics
localhost:8080/JoinGame
Join Game
Game ID
Game ID is required
0 / 4
Your name
Please enter your name
0 / 12
SUBMIT


A Game Of Ethics
localhost:8080/JoinGame
Join Game
Game ID
asdf
Error
Invalid Game ID or player name entered.
OK


A Game Of Ethics
localhost:8080/JoinGame
Join Game
Game ID
rp6m
Error
The game is full. Please choose another game
OK



Appendix 2 - Tasks completed in Sprint 4

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
CE90013-267	More role information at start of game		27 Oct, 2020	27 Oct, 2020		Rainer Selby	Rainer Selby		DONE	Done
CE90013-265	Finalize_Backend_3: Set up a clean DB for client		14 Oct, 2020	11 Nov, 2020		Chenling Huang	Lu Lei		DONE	Done
CE90013-263	US_17_Backend_4 Implement the API of game outcome		14 Oct, 2020	11 Nov, 2020		Lu Lei	Lu Lei		DONE	Done
CE90013-262	Finalise_Backend_2: Fix or optimise known issues		13 Oct, 2020	08 Nov, 2020		Yu Guo	Lu Lei		DONE	Done
CE90013-261	Finalise_Backend_1: Check the whole game for unexpected behaviours and results and record them		13 Oct, 2020	08 Nov, 2020		Yu Guo	Lu Lei		DONE	Done
CE90013-260	Complete and optimise the content for each question and option		13 Oct, 2020	11 Nov, 2020		Angus Hudson	Lu Lei		DONE	Done

CE900 13-258	US_12_Backend_2 Update the code for "see all decisions"		13 Oct, 2020	24 Oct, 2020	Chenling Huang	Lu Lei		DONE	Done
CE900 13-257	US_18_Backend_2 Add test for reflection		13 Oct, 2020	11 Nov, 2020	Chenling Huang	Lu Lei		DONE	Done
CE900 13-256	US_18_Backend_1 Restructure the database schema for reflection and implement the API for frontend		13 Oct, 2020	24 Oct, 2020	Chenling Huang	Lu Lei		DONE	Done
CE900 13-254	Sprint reporting		13 Oct, 2020	07 Nov, 2020	Rainer Selby	Rainer Selby		DONE	Done
CE900 13-251	Acceptance testing		13 Oct, 2020	07 Nov, 2020	Rainer Selby	Yuhen LI		DONE	Done
CE900 13-250	Frontend: Make test planning and Document test results		13 Oct, 2020	07 Nov, 2020	PEIWEN JIN	Yuhen LI		DONE	Done
CE900 13-249	Frontend: Add unit tests for sprint 4 functionality		13 Oct, 2020	05 Nov, 2020	PEIWEN JIN	Yuhen LI		DONE	Done
CE900 13-248	US_20 Frontend: Re-join game - improve feature		13 Oct, 2020	07 Nov, 2020	Rainer Selby	Yuhen LI		DONE	Done
CE900 13-247	US_18 Frontend: Feedback and Reflection connect with backend		13 Oct, 2020	27 Oct, 2020	Rainer Selby	Yuhen LI		DONE	Done
CE900 13-246	US_18 Frontend: Feedback and Reflection page		13 Oct, 2020	26 Oct, 2020	CHRISTINA XU	Yuhen LI		DONE	Done
CE900 13-245	US_17 Frontend: Game outcome page connect with backend		13 Oct, 2020	27 Oct, 2020	Rainer Selby	Yuhen LI		DONE	Done
CE900 13-244	US_17 Frontend: Game Outcome pages		13 Oct, 2020	26 Oct, 2020	CHRISTINA XU	Yuhen LI		DONE	Done
CE900 13-243	US_20 Frontend: Improve look and feel, mobile responsiveness, miscelleaneous fixes		13 Oct, 2020	07 Nov, 2020	Rainer Selby	Yuhen LI		DONE	Done
CE900 13-242	Frontend: Add an Easter egg		13 Oct, 2020	10 Nov, 2020	Rainer Selby	Yuhen LI		DONE	Done
CE900 13-241	US-17_Backend_3 Change the values for "Company" for the personal and overall game outcome		12 Oct, 2020	11 Nov, 2020	Lu Lei	Akhmetzhan Kussainov		DONE	Done
CE900 13-240	US_17_Backend_2 Identify the overall game outcome		12 Oct, 2020	07 Nov, 2020	Angus Hudson	Akhmetzhan Kussainov		DONE	Done
CE900 13-239	US_17_Backend_1 Identify the personal outcome for each role at the end of the game		12 Oct, 2020	07 Nov, 2020	Angus Hudson	Akhmetzhan Kussainov		DONE	Done
CE900 13-238	US_12_Backend_1 Restructure Decision List and store the decisions		12 Oct, 2020	05 Nov, 2020	Akhmetzhan Kussainov	Akhmetzhan Kussainov		DONE	Done
CE900 13-230	US_14 Frontend_02: implement confirmation prompts for some user actions		07 Sep, 2020	07 Nov, 2020	Yuhen LI	Yuhen LI		DONE	Done
CE900 13-203	Deployment: prepare application/deployment for client handover		30 Aug, 2020	11 Nov, 2020	Eric Sciberras	Eric Sciberras		DONE	Done

26 issues