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Requirements

Introduction

The Requirements page contains all the material for the requirements analysis phase, from the background of the project to personas, from motivational models(do-be-feel lists) to user stories. There are four subsections:

Background

This page displays the project overview, game background, and client goals.

Motivational modelling

This page presents the motivational model of the project, which includes the do-be-feel list and goal model.

Personas

This page designs the personas for the project based on the possible users of the game.

User Stories

This page shows all possible user stories based on the improvement of this project.

Background

Change log

Version date	Editor	Comment
2022-08-19	Decheng Xu	Initial Version
2022-08-20	Decheng Xu	Version2

Project overview

The game now has a very complex flow and there is room to improve the user interface. The goal of this project is to shorten the flow of the game, improve the user experience, and make the game more interesting. We would like to add features to the game such as a timer that were mentioned in the previous development but not implemented. Currently all characters have exactly the same options when faced with an unexpected event, and it is necessary to highlight the characteristics and features of different characters so that they can have different levels of influence when making decisions. This project can be used as a tool when teaching ethics courses to help students better understand responsibility and ethics.

Game background

This game is inspired by the Boeing 737 accident. In this game, the plane will face disaster and risk of crashing. Five players will take on the roles of the five members of the plane. When playing, players will have a chat and try to avoid a crash. The game has five roles, they are

- Aeronautical engineer
- Airline pilot
- Boeing executive
- Federal Aviation Administration (FAA) official
- Software developer

Different people have different perspectives. Each player need to keep thinking and make a moral decisions based on their responsibility facing incident from their own standpoint. Finally ultimately guide the plane through the disaster.

Client goals

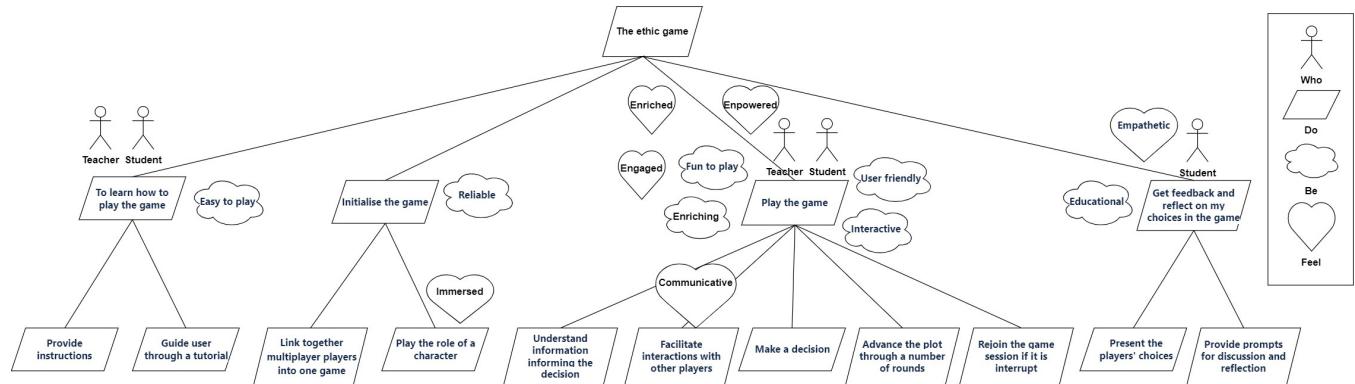
The basic goal was the need to successfully deploy the game to the cloud, fix situations where the game would lag halfway through and other bug fixes. Shorten the whole game play process by reducing the number of in-game issues. Improve the user's gaming experience. Test the entire game process to make the gameplay richer while highlighting the educational aspect of responsibility and morality.

Motivational modelling

Do-Be-Feel List

Who	Do	Be	Feel
Student	To learn how to play the game	Provide instructions	Enriching Enriched
Teacher		Guide user through a tutorial	Easy to play Empowered
	Initialise the game	Link together multiplayer players into one game	Fun to play Engaged
		Play the role of a character	User friendly Empathetic
	Play the game	Understand information informing the decision	Interactive Immersed
		Facilitate interactions with other players	Reliable Communicative
		Make a decision in limited discussion time	Educational
		Advance the plot through a number of rounds	
		Rejoin the game session if it is interrupted	
	Get feedback and reflect on my choices in the game	Present the players' choices	
		Provide prompts for discussion and reflection	

Goal Model



Personas

Change log

Version date	Editor	Comment
2022-08-19	Haiyu Hao	Initial Version
2022-08-20	Haiyu Hao	Version2

Design ideas

There are three personas for this project.

1. Student

- study ethics study engineering

2. Teacher

- ethics professor

We design a student and a teacher who need to study ethics based on the target user model. We also designed a persona with potential users. This persona needs to learn extra ethics for some reason.

Anne Hathaway



"The ultimate value of life lies in the ability to wake up and think, not just to survive."

Age: 19-22

Work: Philosophy Student

Family: Sound family, one brother and sister

Location: Melbourne, VIC, Australia

Goals

- Deeper understanding of ethics through games
- Self-reflection and summarising the knowledge of ethics by the game
- Use interesting methods to understand boring ethics
- Observe the behavior of others in the game

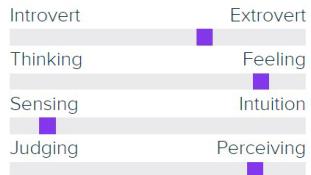
Frustrations

- Not clear about the process and rules of the game.
- Not able apply ethics principle to real-life case
- Lack of opportunities to observe people's reactions in related to moral good.

Motivation

- Able to achieve excellent grades in ethics subjects.
- Apply ethics principle to real-life case.
- Understand the theoretical knowledge of ethics from different perspectives.

Personality



Skills



Bio

Anne Hathaway is an undergraduate student at the University of Melbourne. Her major is philosophy, and this is her second academic year. Anne has a lot to learn about ethics this school year. She is now very confused about the learning content of this part, because she cannot verify the learning content through practice and has no way to apply what she has learned in practice.

Annie hopes to validate what she has learned in some practical examples. Annie is also interested in trying new ways to learn about ethics. At the same time, observing different characters' different answers to questions can better help her understand some more profound ethics. However, as a non-technical person, she worries about the game's overly complicated operation. Anne wanted a simplified and fun tool so she could focus more on learning to understand ethics.

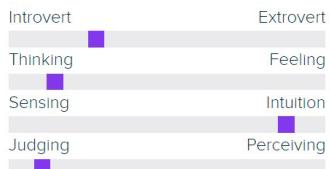
Calvin Ferdinand



"The Principle of Least Astonishment]
Make a user interface as consistent
and as predictable as possible. "

Age: **23-26**
Work: **Engineering student**
Family: **One-parent family**
Location: **Melbourne, VIC, Australia**

Personality



Goals

- Achieving good grades in courses in artificial intelligence ethics
- Learn more about ethics
- Help students understand the relevant knowledge of ethics

Frustrations

- It is still very difficult for him to learn the theoretical knowledge of ethics.
- Calvin rarely communicates with people, and multiplayer games are a challenge for him.

Motivation

- Relieve the stress of your studies and your family.
- Increase extracurricular knowledge and enrich his thinking

Skills



Bio

Calvin is a graduate student at the University of Melbourne. His major is information technology. He spends most of his time learning programming languages and algorithms. In a recent course Calvin learned about the ethics of artificial intelligence. Calvin is very interested in this part.

Because Calvin grew up in a single-parent household, Calvin is more paranoid and silent than his peers. Calvin is happy to study ethics in his spare time, which can reduce the stress of programming and improve his own personality. Calvin hopes to use his knowledge to help students understand the relevant knowledge of ethics.

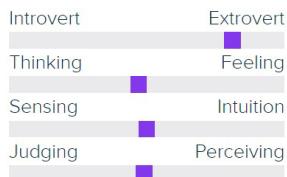
Graeme Heman



"The greatest happiness of teachers is to send a group of children to the ideal shore."

Age: **45-60**
Work: **Professor of Philosophy**
Family: **Married, 2 kids.**
Location: **Melbourne, VIC, Australia**

Personality



Goals

- Teaching students ethics and wanting students to be engaged.
- Hoping students can learn and reflect on real-life cases by playing the game.
- Try new ways of teaching.

Frustrations

- There is a large age gap among the students, and there are some generation gaps in thinking.
- Graeme has never played any video games.

Motivation

- Find out what students are thinking through games.
- Hope that students can gain more through ethics courses.

Skill



Bio

Graeme is a Professor of Philosophy at the University of Melbourne. He has extensive teaching experience. But recently he found it difficult to interact with students in class. Though philosophical studies are beneficial for people to improve their problem-solving, persuasion, and writing skills. How do make students really feel the topic of morality? How do ethical topics relate to students' future lives? These questions have always been a conundrum in the teaching career of professors.

The professor knew that this knowledge was boring, so he wanted to try a new way of teaching to change that. The professor hopes that the theoretical knowledge about ethics can be described in the form of games, and the problems in the game can make students reflect on real-life cases

User Stories

Analysis of requirements

What is in-scope?

The overarching objective of this project is to provide an online game of ethic available for ethics education, allowing users especially students who learns ethics to simulate ethical issues they have to face in an industry setting and learn how to make better decisions as a result. The following requirements are listed as a product backlog in order of relative importance, as estimated from the provided case study.

Functional Requirements

- Show an overall report in the end of the game
- Show the option of players after every question
- Add a timer in the discussion session

Non-functional Requirements

- Testing and debugging the previous version of the game
 - Simplifying the game to make it more fun and motivational
 - Ensure a high level of security for the system's data
 - The system must be available for 24/7
 - The system must be delivered and maintained at a low cost
- Efficiently allow players to play the game in a user friendly manner

What is out-of-scope?

As probable expansions of the system, the following requirements should not be taken into consideration.

- Platform migration of the game
- The ability to login as an administrator for teachers
- Play the game with different language

User stories

User story ID	As a ...	I want ...	so ...	Priority	Spent	Estimated Workload (Person days)	Achieved
US_01	teacher	For the decision-making process to be relatively simple	the game is fast-paced, which should improve student engagement and outcomes.	Must have	2	14	✓
US_02	student	To submit my option successfully	I can play the game without getting stuck.	Must have	2	14	✓
US_03	student	To get a overall report that shows decisions made by other users for each questions 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	3	7	
US_04	student /teacher	To be able to rejoin the game session	I can continue the game if it is interrupted.	Better have	3	5	
US_05	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.	Better have	3	5	
US_06	teacher	To add a timer 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.	Better have	3	14	

PERT Chart

