

## **Deliverable D: Conceptual Design**

GNG 1103 Group 2.2

## Table of Contents

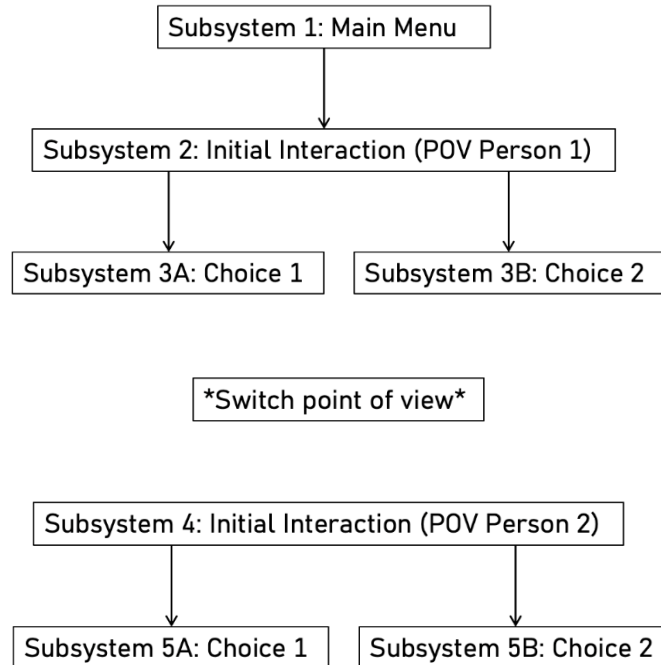
Introduction.....	3
Subsystem Design Goal .....	3
Subsystems.....	4
Subsystem 1: Main Menu.....	4
Subsystem 2: Initial Interaction POV #1.....	6
Subsystem 3: Choice Options .....	8
Subsystem 4: Initial Interaction POV #2.....	13
Subsystem 5: Choice Options .....	14
Summary .....	20
Evaluations and Modifications .....	22
Comparison .....	24
Selection.....	25
Conclusion .....	25

## Introduction

The VR project complex and the immersive experience must be maximized to its fullest potential. An elevator setting was chosen as most people from all backgrounds in Canada have experienced this setting before. Two people will walk into an elevator and one person dressed in business-casual clothing will make a generalized assumption about the other. This person does not know that the more laid-back appearing person is someone of authority. This scenario will be played in the form of an interactive game with the goal of teaching the user empathy.

## Subsystem Design Goal

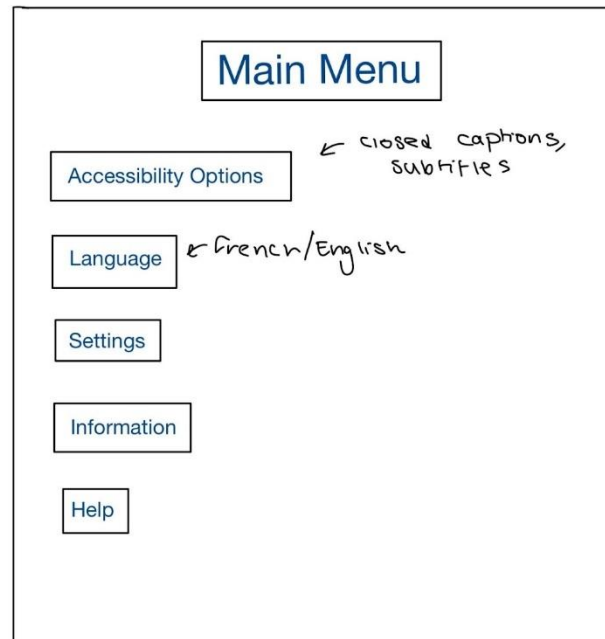
To create an immersive VR experience that teaches empathy, allows the user to see the world from a different point of view, and is applicable in EDI training our team created the concept detailed in this document. Essentially, the VR experience is a series of scenes which will have an interactive element which involves making choices in response to the initial interaction. This VR experience will take place in an elevator, in a workplace environment. Figure 1 outlines the flow of the experience, which begins with subsystem 1, a main menu interface, which will then flow into subsystem 2 which is the initial interaction from the point of view of person 1. This person is the one who will be experiencing discrimination. By immersing the user in the point of view of the person who is confronted with a prejudiced comment first, the design team hopes to create a connection between the user and person 1 which will aid the user in learning empathy as they will have sympathy for the first character they were in the simulation. In subsystem 2 (initial interaction: POV Person 1) the user will experience Person 2 coming into the elevator and making a derogatory comment towards Person 1. Next in subsystem 3, the user will have two choices (Choice 1-Subsystem 3A or Choice 2-Subsystem-B). The experience will then flow into the corresponding subsystem based on the respective choice made by the user. Now, the user will switch points of view to experience the interaction from the point of view of person 2 (the person who makes the discriminatory comment). By changing points of view, the user will be able to observe how person 1 reacted to this situation, as well as experiencing how it feels to be person 2 and make this hurtful comment. This will show both sides of the interaction and aid the user in learning empathy as they experience this interaction from 2 different points of view.



## Subsystems

### Subsystem 1: Main Menu

#### 1.1 (Claire)



“Main Menu” will be able to be accessed through gameplay. “Accessibility Options” will include closed caption or subtitle options, “Language” will allow the user to choose between English or French,

“Information” will give the user instructions to play the game, and “Help” will include a set of answers to frequently asked questions.

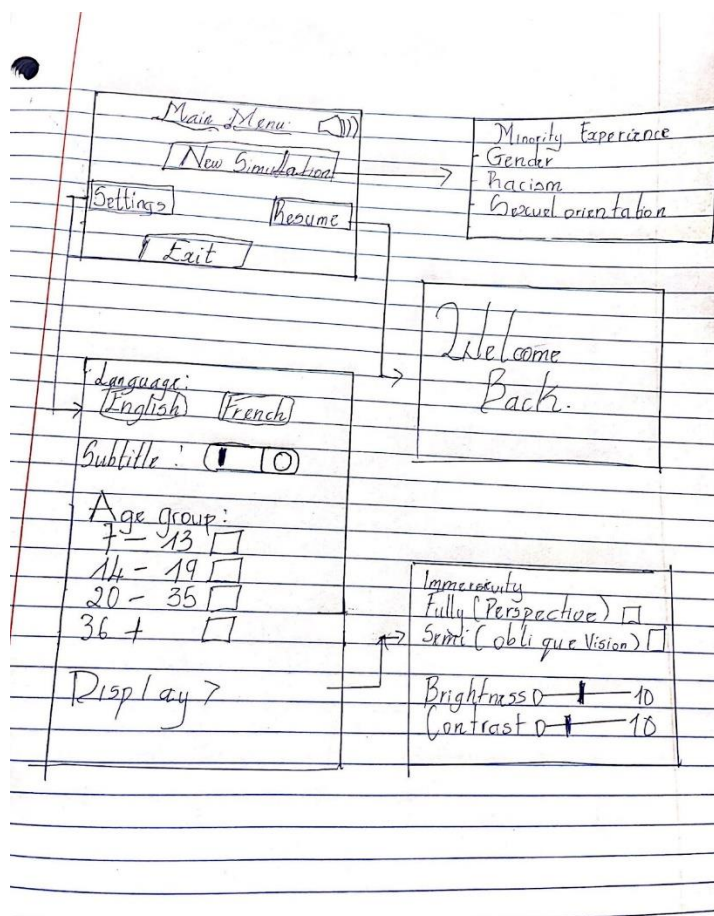
### 1.2 (Sabine)

**POV: Female  
Company  
Executive**

**POV: Male  
Interviewee**

The main menu will have the options for the two different points of view displayed. However, the user will experience the interaction from the point of view of the female company executive first. The user will be in the “shoes” of the person experiencing discrimination first as this initial point of view will impact the way the user interprets the whole experience, and the goal of the simulation is to have the user empathize with the person experiencing discrimination.

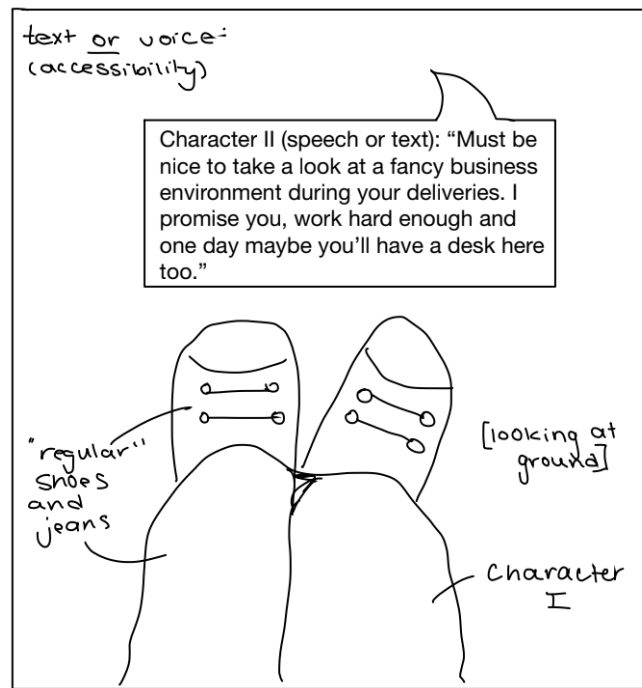
### 1.3 (Ernest)



In the main menu would be displayed automatically as the simulation start. It offers variety of panel which enable a fluid functionality such choosing a new simulation from one of the minority selected or even resuming a previous simulation and also permitting the user to change some parameters in in order to fully enjoy the simulation

## Subsystem 2: Initial Interaction POV #1

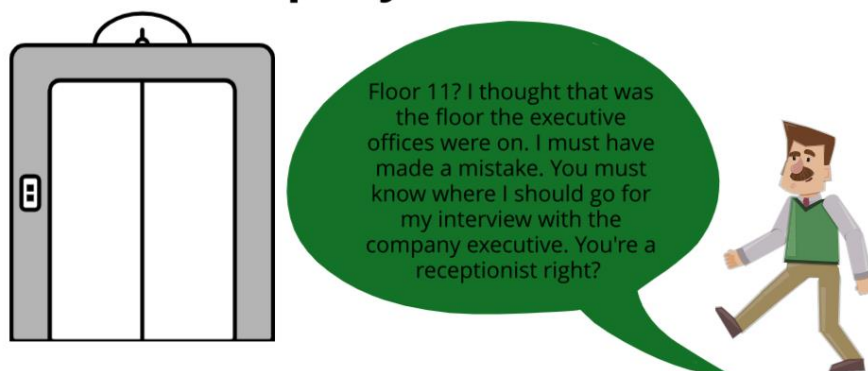
### 2.1 (Claire)



The interaction will begin with character two talking to character one. Character two will regard character one with a microaggression while character one looks down at the ground. This scene will allow the user to experience a hurtful situation from the perspective of someone that is minding their business. Character one will be dressed in casual clothing. Accessibility options will dictate the mode of conversation.

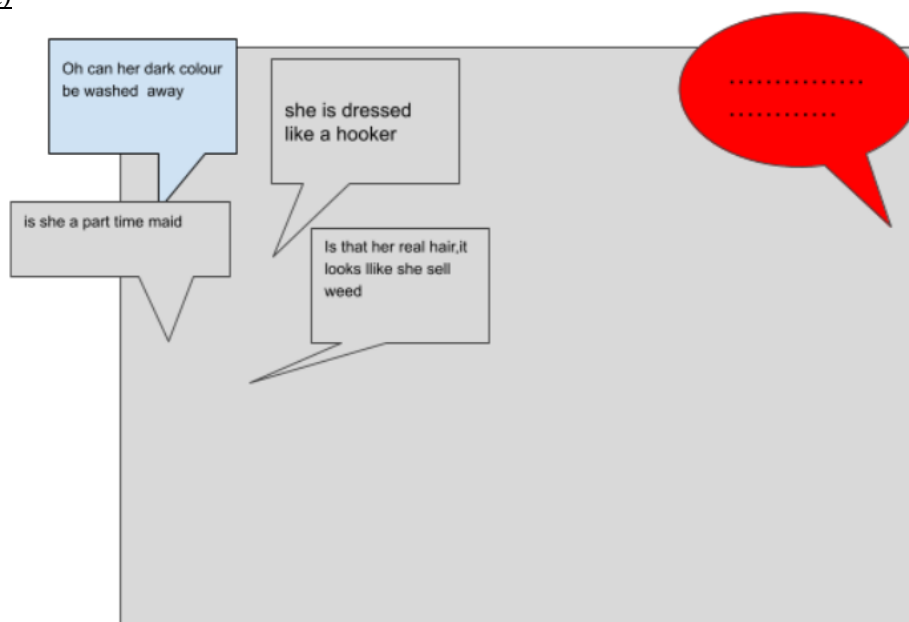
## 2.2 (Sabine)

### POV: Female Company Executive



This initial interaction begins from the point of view of the female company executive. In an elevator, the button is pressed for floor 11 and a man enters the elevator and says the dialogue above.

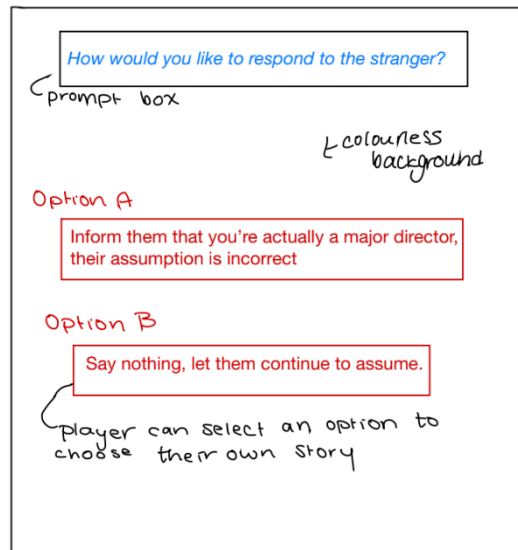
## 2.3 (Ernest)



An old employee from the most famous company in Canada just got a promotion to the post of divisional officer. As he celebrated the amazing news at his workplace, he invited his new dark-skinned companion, with whom he had been in a relationship for a long time, in order to celebrate and at the same time present her to his colleagues. She gladly accepted the invitation. She quickly arrived at the building and took the elevator to his offices located on floor 26. Then, in the elevator, she encountered some of his colleagues and was stared at because of her way of dressing and color.

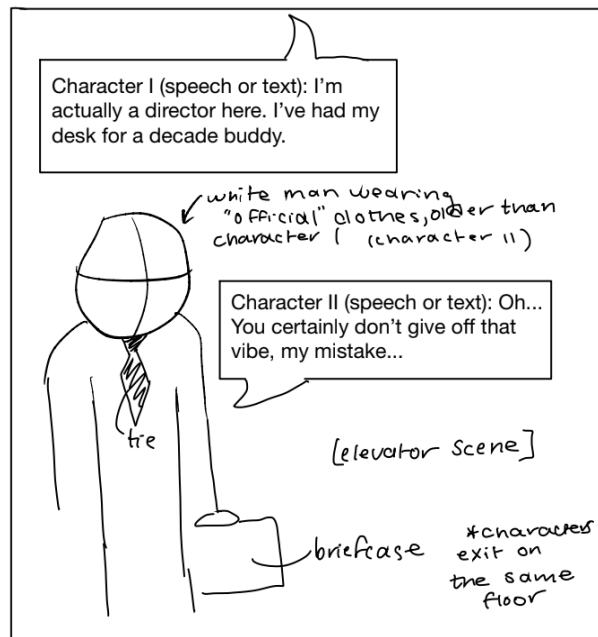
## Subsystem 3: Choice Options

### 3.1.1 (Claire)



This pop-up screen will be displayed to the user, allowing them to manually select either choice A or choice B.

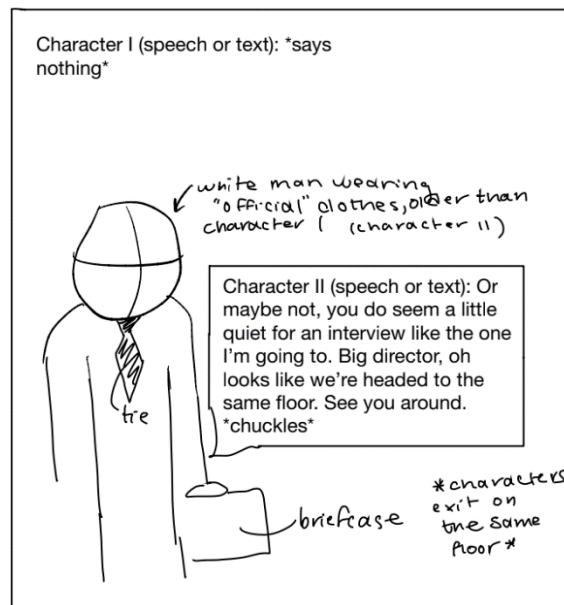
### 3.1.2



This scene is the outcome of choice A. The user will see character one for the first time, dressed in formal business attire. Character one will be offended, and the situation will escalate. Character two will not emphasize with character one and will simply state that it was an easy mistake to make. The goal of this scene is to allow the user to experience an uncomfortable situation so that they may emphasize with character one.



### 3.1.3



This scene is the outcome of choice B. The user will see character one for the first time, dressed in formal business attire. Character one will say nothing and allow character two to continue making assumptions. The goal of this scene is to allow the user to experience an uncomfortable situation so that they may emphasize with character one.

#### 3.2.1 (Sabine)

**Response**  
**Choice 1: Active**  
**Response**

**Choice 2: Passive**  
**Response**

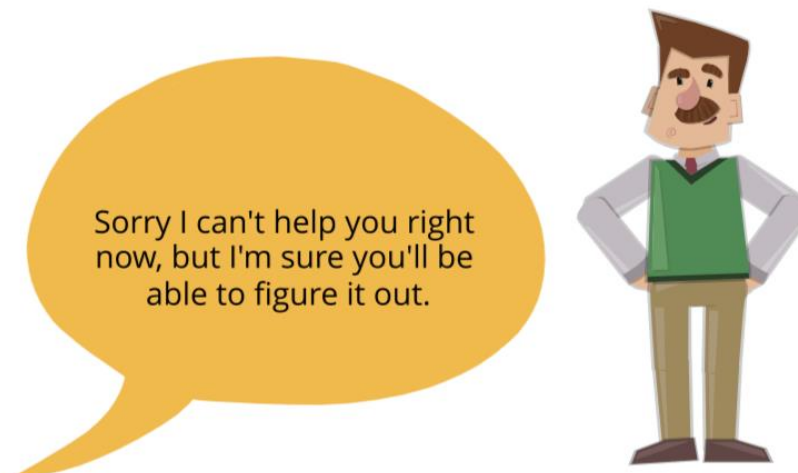
The user can pick either an active response or a passive response to the initial interaction.

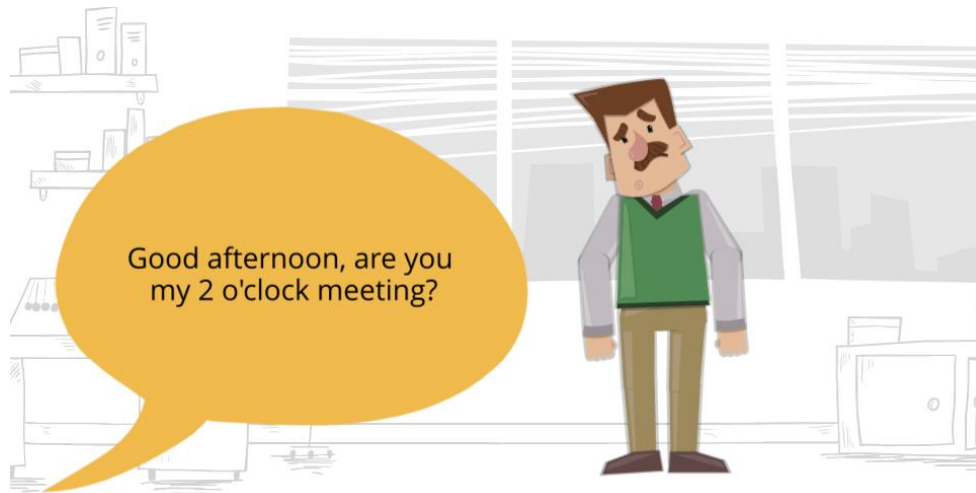
### 3.2.2 Choice 1



Choice 1 is a more active response to the situation, as the user decides to directly address Person B and reveal that the user is the company executive.

### 3.2.3 Choice 2





Choice 2 is a more passive response to the situation, as Person A responds to Person B in the manner shown above. This reflects how someone in Person A's situation may be uncomfortable with direct confrontation when faced with discrimination.

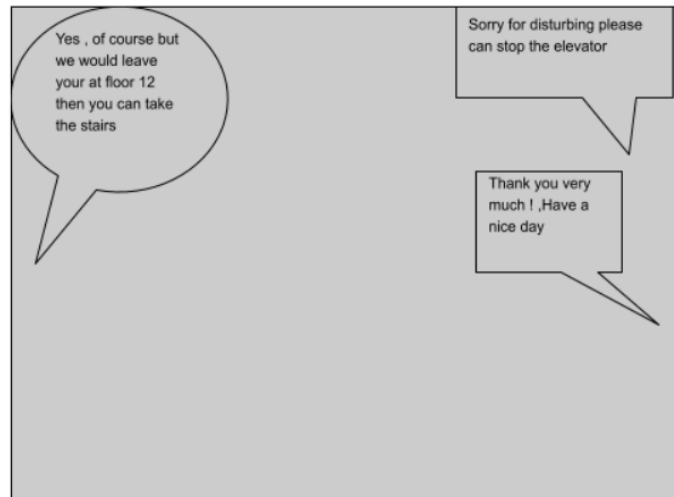
### 3.3.1 (Ernest)

Choose the following scenario

1. Should the young lady burst in tears and goes away
2. Should she boldly stand up for her right and make the group of people understand that they are being racist and judgmental

Here the user must choose the one among these two possible outcomes from the above interaction.

### 3.3.2



#### Choice 1

The situation was so uncomfortable for her, and she imagined herself being in the midst of more than 30 people with the same ideology as the one she had met in the elevator. She stopped the elevator when she ran to her car back home with her eyes full of tears, having in mind she would add one more location to her list of uncomfortable places in the world . This scene sadly show what some people in our society experience daily and how they are sometimes forced to restrict their from places or people.

### 3.3.3

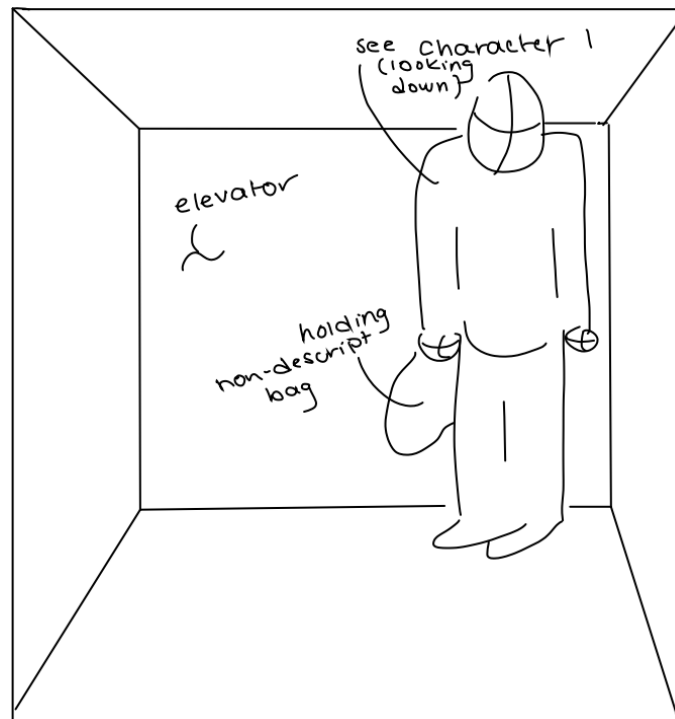


#### Choice 2

This situation in which she found herself in the elevator was so uncomfortable, but she knew her main goal in being there was to support her companion, so she responded to their comments because she felt that was the best thing to do to get their respect .This scene teaches users to never judge a book by its cover and provide a means on how to face someone that was been racist or judgmental

## Subsystem 4: Initial Interaction POV #2

### 4.1 (Claire)



The interaction will begin with character one standing alone in the elevator looking at the ground while holding their lunch bag. This scene will allow the user to experience a hurtful situation from the perspective of character one.

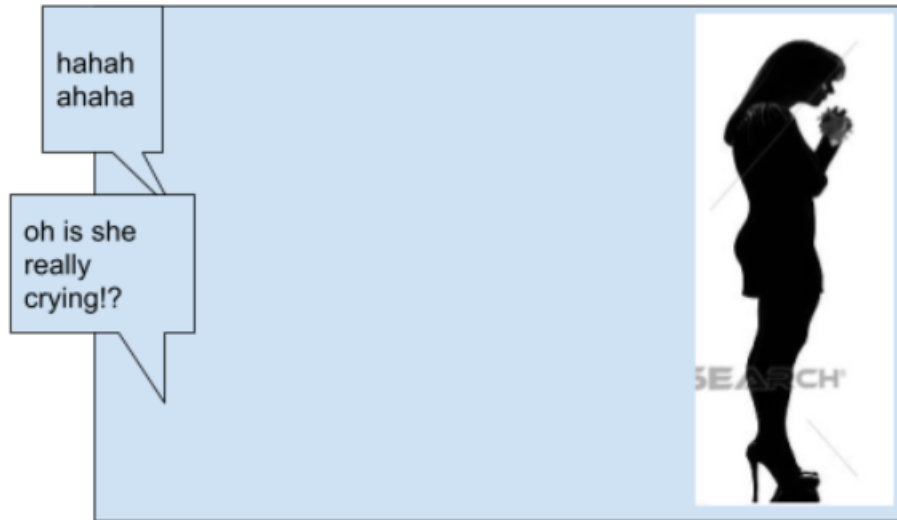
### 4.2 (Sabine)

## POV: Male interviewee



This initial interaction begins from the point of view of the male interviewee. In an elevator, the button is pressed for floor 11 and the user enters the elevator and says the dialogue above.

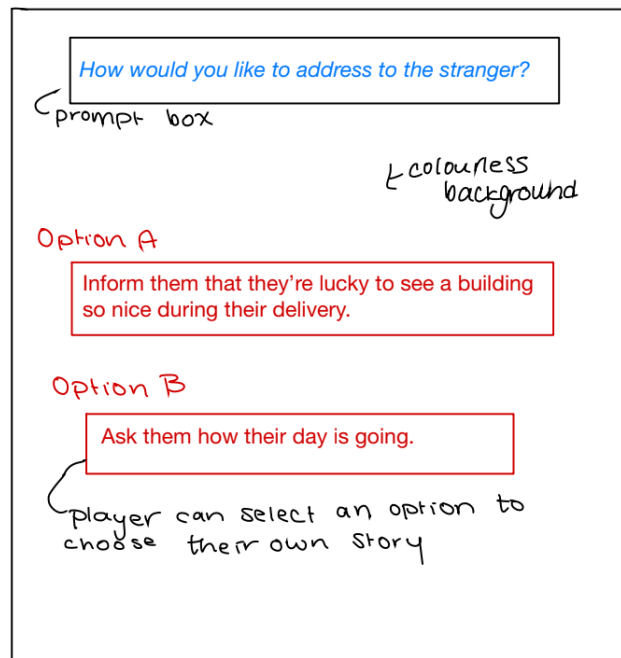
### 4.3 (Ernest)



In this second interaction we are going to switch the point of view. In this scenario, the user is going to be among the group of colleagues that rudely brought up racist allegations to a young lady in the elevator and you realized your comments were so painful that she started crying.

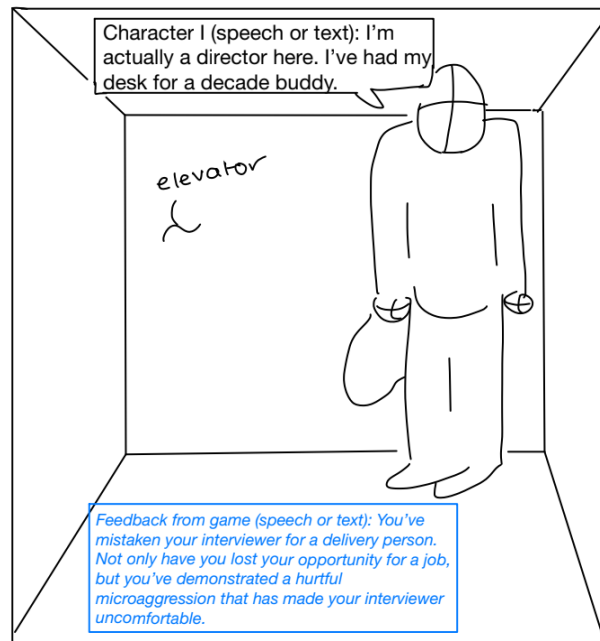
### Subsystem 5: Choice Options

#### 5.1.1 (Claire):



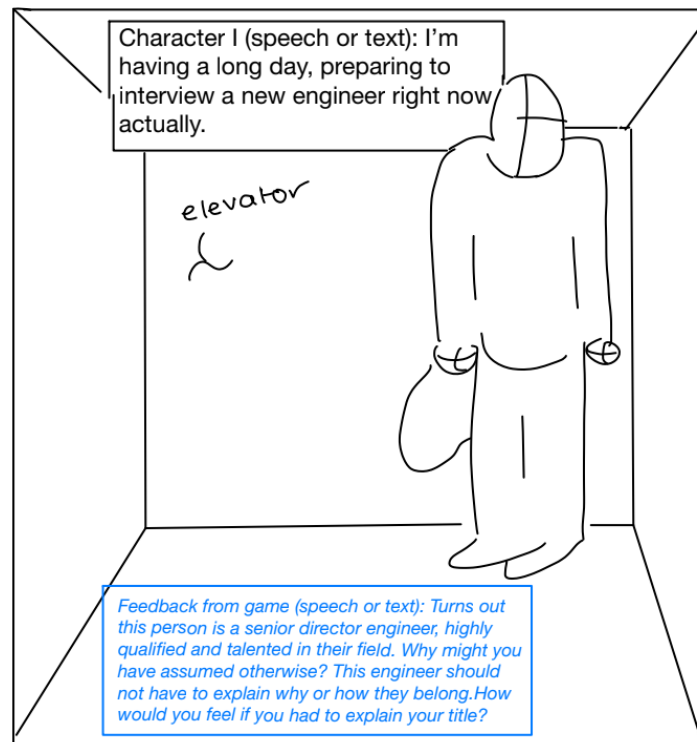
This pop-up screen will be displayed to the user, allowing them to manually select either choice A or choice B.

### 5.1.2



This scene is the outcome of choice A. Character one will be offended, and the situation will escalate. The goal of this scene is to allow the user to experience an uncomfortable situation so that they may empathize with character one through the perspective of character two. On screen feedback will inform the user of mistakes they have made while selecting the correct thing to say.

### 5.1.3



This scene is the outcome of choice B. Character one will not be offended, and the situation will be friendly. The goal of this scene is to allow the user to empathize with character one through the

perspective of character two. On screen feedback will inform the user of that they have made the correct choice and ask the user to reflect on their internal bias.

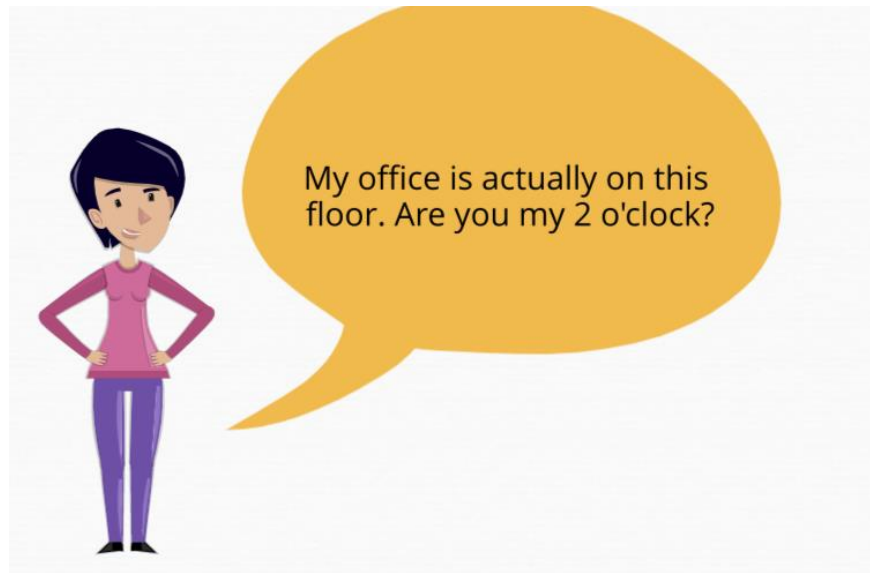
#### 5.2.1 (Sabine)

### **Response Choice 1: Active Response**

### **Choice 2: Passive Response**

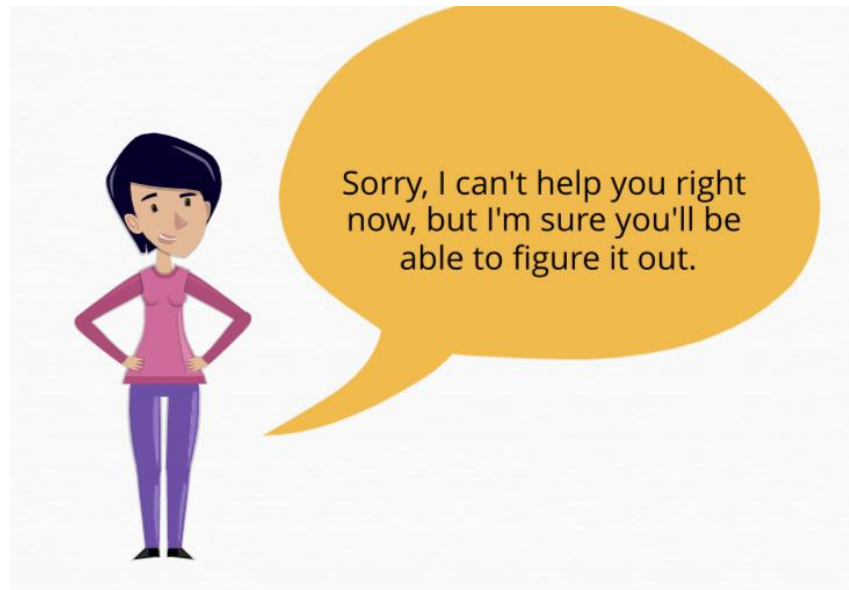
The user will now experience the choice that they previously selected in the simulation, but from the point of view of Person B.

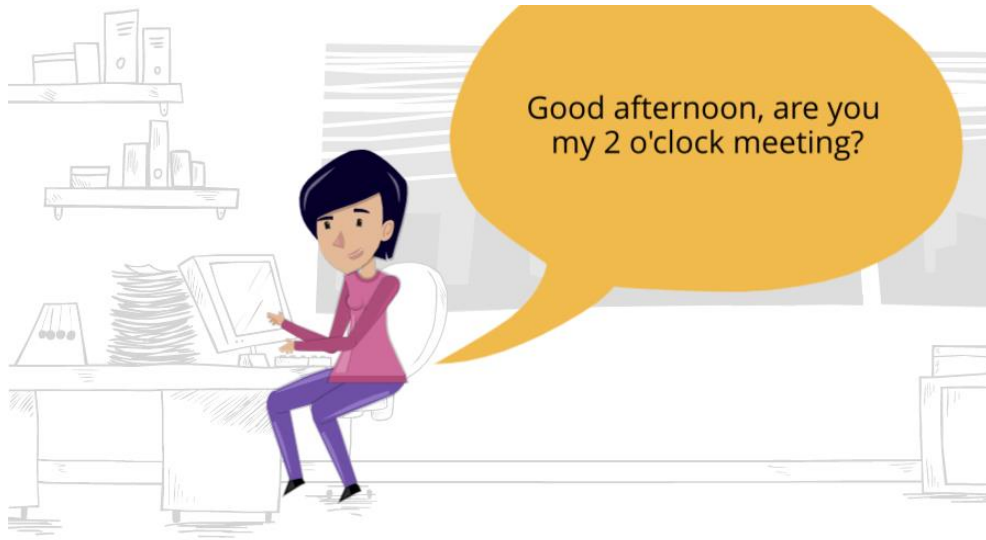
#### 5.2.2 Choice 1



In Choice 1, the user experiences Person A saying the dialogue above. The user might feel like they are being confronted and will cause them to reflect on why the dialogue in the initial interaction would warrant such a reaction.



5.2.3 Choice 2



In Choice 2, the user experiences the scenes above. They may feel shame as they made the assumption in the initial interaction. This may cause them to reflect on the assumption made.

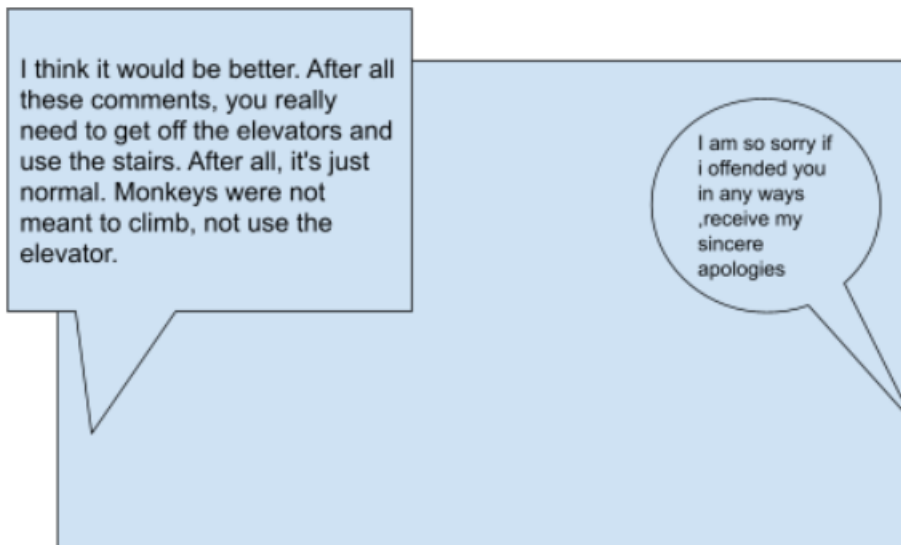
#### 5.3.1 (Ernest)

Choose one of the following possible outcome

1. Continue the allegation and ask the young lady to leave the elevator ,and use the stairs.
2. Defend the young lady and let your colleagues understand that what they are doing is bad

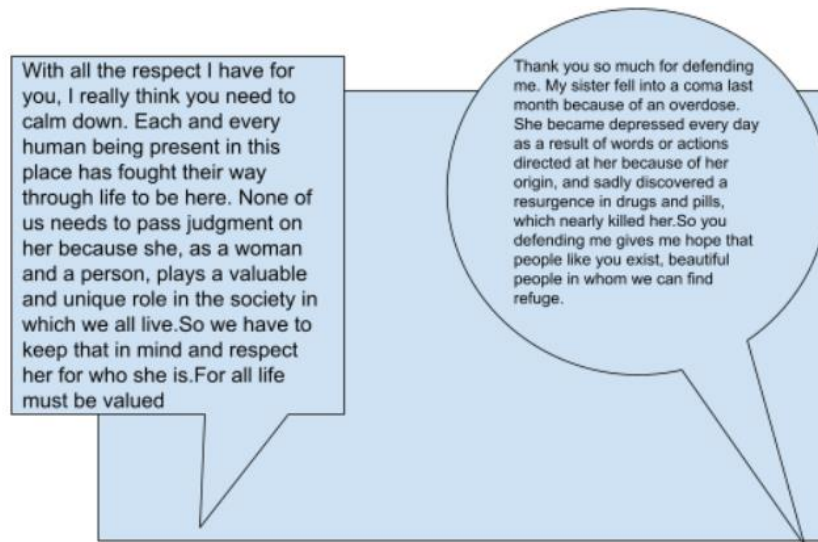
Here the user must choose the one among these two possible outcomes from the above interaction

### 5.3.2



Choice 1

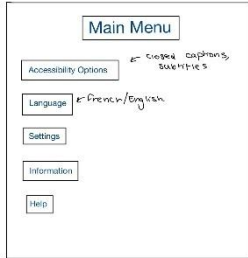
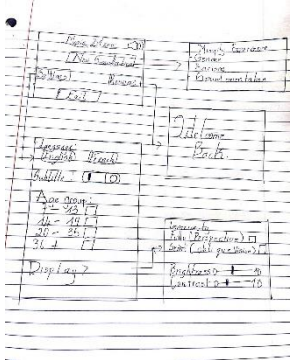


### 5.3.3

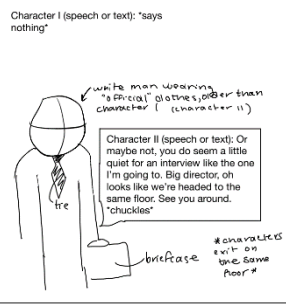

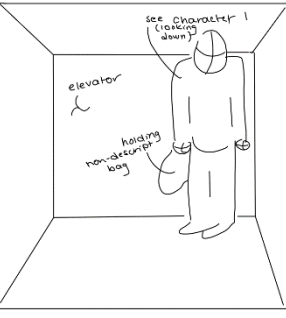

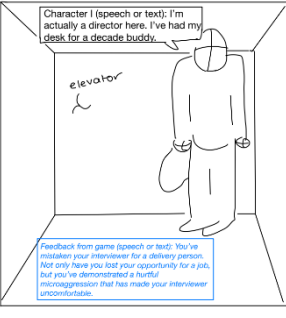

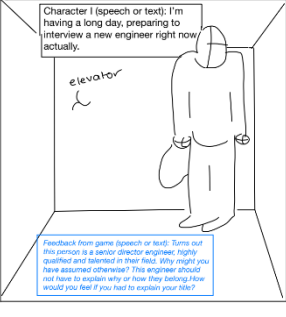



Choice 2

# Summary

Table 1. Summary of Design Concept options for each subsystem

Subsystems	Design 1	Design 2	Design 3
1: main menu	<p><u>Subsystem 1</u>            *Subsystem #1: Initial interaction POV #1            3D space: elevator scene</p> 	<p>POV: Female Company Executive</p> <p>POV: Male Interviewee</p>	
2	<p>text or voice? (accessibility)</p> <p>Character II (speech or text): "Must be nice to take a look at a fancy business environment during your deliveries. I promise you, work hard enough and one day maybe you'll have a desk here too."</p> <p>regular... suits and jeans</p> <p>[looking at graffiti]</p> <p>Character I</p>	<p>POV: Female Company Executive</p>  <p>When I got to the floor the executive offices were on, I must have made a mistake. You must know where I should go for my interview with the company executive. You're a receptionist right?</p>	
3A	<p>Character I (speech or text): I'm actually a director here. I've had my desk for a decade buddy.</p> <p>white men wearing "business" clothes, older than character I (character II)</p> <p>Character II (speech or text): Oh... You certainly don't give off that vibe, my mistake...</p> <p>[elevator scene]</p> <p>briefcase</p> <p>characters exit on the same floor</p>	<p>My office is actually on this floor. Are you my 2 o'clock?</p> 	

3B	<p>Character I (speech or text): "says nothing"</p>  <p>Character II (speech or text): Or maybe not, you do seem a little quiet for an interview like the one I'm going to. Big director, oh looks like we're headed to the same floor. See you around. "chuckles"</p> <p>Annotations: white men wearing "suits" (clothes, power than character I (character II)), briefcase, #characters #w/ in the same floor</p>	 <p>Sorry I can't help you right now, but I'm sure you'll be able to figure it out.</p>	
4	 <p>see character I (looking down)</p> <p>elevator</p> <p>holding non-descript bag</p>	<p><b>POV: Male interviewee</b></p>  <p>floor 12? I thought that was the floor the executive offices were on. I must have made a mistake. You must know where I should go for my interview with the company executive. You're a receptionist right?</p>	
5A	<p>Character I (speech or text): I'm actually a director here. I've had my desk for a decade buddy.</p>  <p>elevator</p> <p>Feedback from game (speech or text): You've mistaken your interviewer for a delivery person. Not only have you lost your opportunity for a job, but you've demonstrated a hurtful microaggression that has made your interviewer uncomfortable.</p>	 <p>My office is actually on this floor. Are you my 2 o'clock?</p>	
5B	<p>Character I (speech or text): I'm having a long day, preparing to interview a new engineer right now actually.</p>  <p>elevator</p> <p>Feedback from game (speech or text): Turns out this person is a senior director engineer, highly qualified and talented in their field. Why might you have assumed otherwise? This engineer should not have to explain why or how they belong. How would you feel if you had to explain your title?</p>	 <p>Sorry, I can't help you right now, but I'm sure you'll be able to figure it out.</p>	

## Evaluations and Modifications

There are certain benefits and drawbacks to each concept that need to be considered prior to making a final function design decision.

### Subsystem 1: Main Menu

Subsystem 1 is the main menu; design 1.1 simply presents to the user the two alternatives offered by the simulation, which is very likely to be used by users of a certain age group since it is steps-free. Meanwhile, design 1.2 provides more display configurability to users as it allows them to modify the simulation at their wish and, most importantly, permits users to choose an empathy experience from a variety of minority groups. Finally, design 1.3 enables an accessibility option to users, permitting them to add subtitles, and also an information and help panel to answer user questions on the functioning of the product and also provides them with some usage tutorials that prove useful for users that are not VR literate.

By the means of all the various element from the different design in this subsystem , a new concept was formed that would be a combination from features in design 1.2 and 1.3 to produce a main menu that would display configurable, and provide help as well as feedback to user

### Subsystem 2: Initial Interaction POV #1

Subsystem 2 investigates the design concept for the first point of view; Design 2.1 presents to the user in a dialogue how someone is being microaggression by an individual and tries to be explicit about the gestures and actions performed by different individuals .Meanwhile, design 2.2 contains well-structured images and dialogue that present to the user the initial interaction that would take place and present to user a real life situation of gender inequality Design 2.3 presents different dialogues from groups of people engaged in the discussion, providing various points of view to the user. However, it does not present any images, making the design text-based, which is not user-friendly.

### Subsystem 3: Choice Options

Subsystem 3A and 3B are the two possible outcomes from the initial interaction in the subsystem above. Design 3.1 provides a well composted dialogue with descriptive images and details with contains labels and in design 3.2 user are given a wide view of were the scenario took place and provide good facial expression to enable user full comprehension of the scene taking place

### Subsystem 4: Initial Interaction POV #2

Subsystem 4 acts as a way for the user to demonstrate that they have learned to emphasize with another person's point of view via the first interaction experience. Design 1 includes a few important details, such as the direction of movement of the other character, but leaves out explicit details and dialogue. Designs 2 and 3 both contain dialogue and a few more details about gender and aesthetic that could be chosen for the final design. Design 2 allows the user to choose a dialogue that will be directed at themselves, whereas designs 1 and 3 allow the user to choose what their own character is saying and experience the outcome of that choice. For the final design detail and aesthetic of design 2 will be used, however the user will instead choose their own characters dialogue to experience the consequence of that action as is shown in designs 2 and 3.

### Subsystem 5: Choice Options

Subsystems 5A and 5B are two separate outcomes of the choice the user makes in subsection 4. Design 1 includes a feedback option from the game, which will be included in the final design so that the user can explicitly understand the consequences of their actions. Expression on the face of the avatar as shown in design three will also be kept in the final design, as designs 1 and 2 are lacking this feature. Design 3 contains more eloquent language that can also be used for the final design as it captures more emotion, however length of text may be cut back so that the user is able to absorb all information.

## Comparison

Table 2: New design system created by mixing and matching subsystems.

Design	Subsystem 1	Subsystem 2	Subsystem 3	Subsystem 4	Subsystem 5
Design 1	Program accessibility are offered to user (1.3)	well-structured images and dialogue (2.2)	Well composted dialogue with descriptive images and details with contains labels (3.1)	Allow us to choose a dialogue that will be directed at themselves (4.2)	Contain feedback features from the game 5.1
Design 2	presents to the user the two alternatives offered by the simulation (1.1)	presents to the user simple and explicit dialogue (2.1)	Give user a wide view of were the scenario took place and provide good facial expression to enable user comprehension (3.2)	Allow user to choose what their own character is saying and experience the out come (4.3)	Physical and facial expression from the avatar enable user to explicitly understand the consequences of their actions (5.2)
Design 3	Enable user display configurable and accesbilty and provide information and help panel to user in difficulties (1.4)	Present to user text-based dialogue from different group of people (2.3)	Provide good and sentimental dialogue to user and clearly reveals the feeling of empathy 3.3	Contains dialogue with more details details about gender and allow user to choose their own dialogue (4.4)	Contains more eloquent language and capture more emotion (5.3)



## Selection

Table 3: Design Selection Based on Design Criteria

Criteria	Design 1	Design 2	Design 3
3D interactive model	Yes	Yes	Yes
Accessibility	Closed captions, subtitles	N/A	Closed captions, subtitles
Language	French, English	English	French, English
Uses Unity software	Yes	Yes	Yes
Cost	Not specified yet	Not specified yet	Not specified yet
Age	> 5 years	Any age	>10 years
Virtual Reality Headset	Yes	Yes	Yes
Resolution	N/A	N/A	N/A
Empathy communication (1-3 stars, 3 being best 1 being least)	2	1	3
Aesthetically pleasing model	No	Yes	No
Inclusive Language	Yes	Yes	Too complex

The final design will be a combination of all three designs, highlighting the desired areas achieved above. The design will include criteria highlighted in green from each subsection, and slightly tweak areas highlighted in yellow so that they will meet target specifications outlined in deliverable C. Areas highlighted in red will not be included in design, or in cases where they are marked “N/A” they will be updated and included.

## Conclusion

In conclusion this virtual reality experience shows two different sides of the story from two different points of view. The point of the experience is to teach the user to not to judge a book by its cover. The overall design will be a combination of all three design ideas that have been tweaked to fit the design specifications and target specifications. The overall design will build on previous benchmarking to create a design that satisfies the client’s needs.