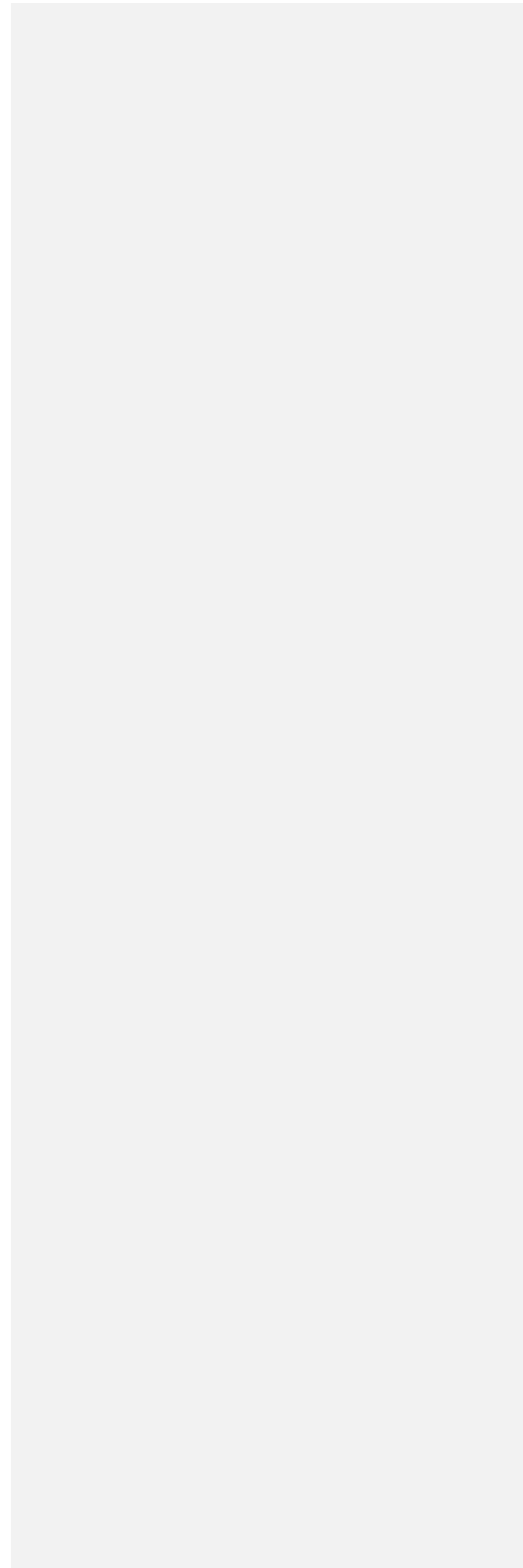


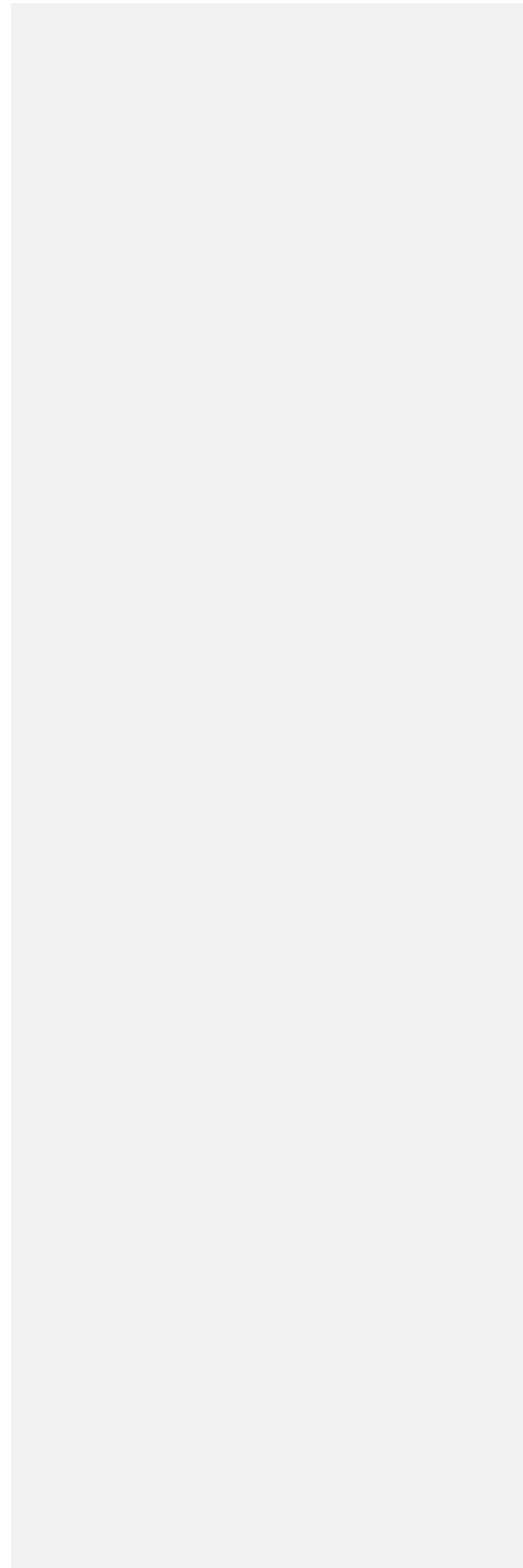
Project Deliverable D – Group 12  
Design Criteria and Target Specifications  
GNG 1103 - Engineering Design  
Faculty of Engineering – University of Ottawa  
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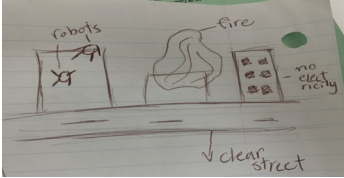
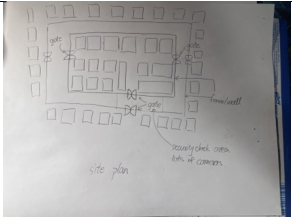


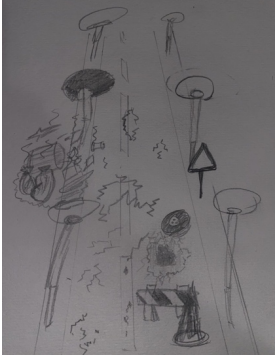
## 1. Introduction

This document outlines the key considerations for three pivotal subsystems - Visualization, Storyline, Audio/Music, and Interaction. According to the design criteria, ideas from each member by sketching a graph, we can reach the final design VR environment.

### 1.1 Visualization

Visualization is important because it creates the experience that the player is going to have by seeing the world around them. The visual aspects give game developers a way to create a vision and evoke emotions from players when they are interacting with the game.


| Group Member | Idea   | Pros and Cons   |
|--------------|--|---|
| Ella         |    | <p>Pros: Represents if autonomous weapons turned on humans</p> <p>Cons: Doesn't show the street view</p>  |
| Zahra        | <p>- Autonomous robots everywhere, broken down plain city, that's demolished and in a critical condition</p>  | <p>Cons: may be too disturbing for some viewers.</p> <p>Pros: Portrays main purpose of VR world.</p>  |
| Zhaojie      |   | <p>Pro: 1. sense of oppression (lots of cameras, military equipment, safe houses)<br/>2. Large site plan.</p> <p>Cons: hard to make the large city.</p> |

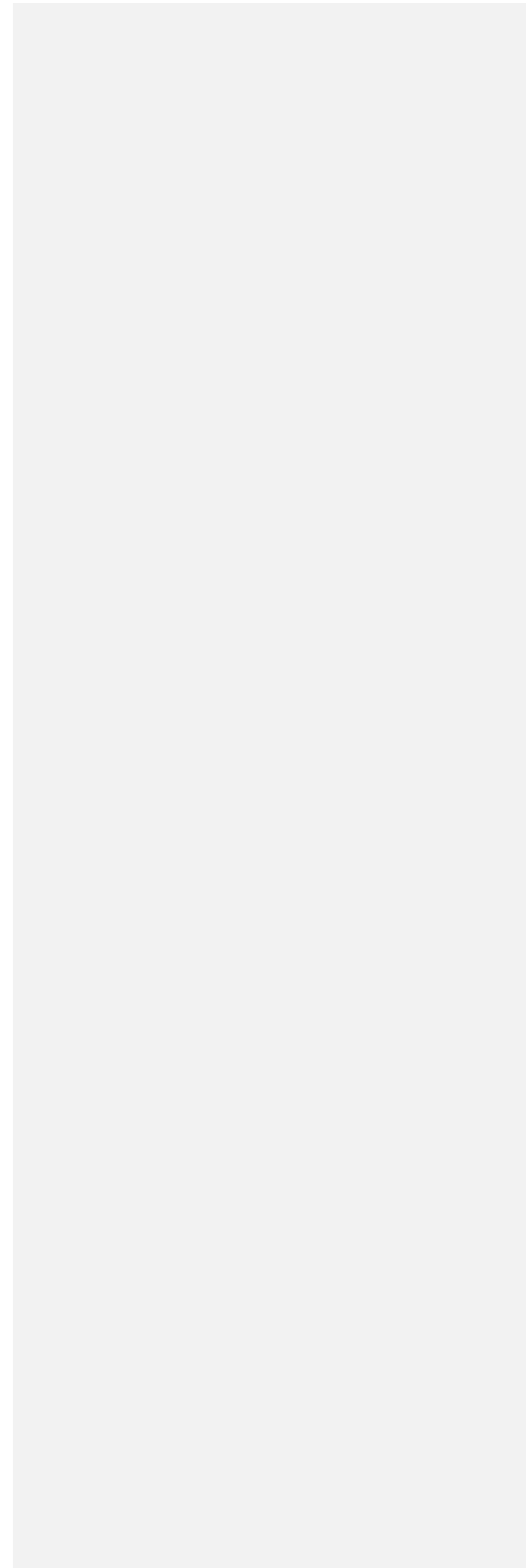
|          |   |   |
|----------|---|---|
| Mohammad |  <p data-bbox="383 785 799 810">Abandoned road/highway filled with trash and</p> | <p data-bbox="821 411 867 436">Pros:</p> <ul data-bbox="857 457 1042 667" style="list-style-type: none"> <li>- Destroyed road</li> <li>- Nothing other than trash are in the road, which shows how abandoned the road is</li> </ul> <p data-bbox="821 831 867 856">Cons:</p> <ul data-bbox="857 877 1036 961" style="list-style-type: none"> <li>- Hard to see(too much stuff)</li> <li>- No broken cars</li> </ul> |
|----------|---|---|

### 1.2 Storyline

The storyline is important in game making because it helps the player understand the plot of the game and its themes effectively. It keeps the player engaged as well as creating an appeal to play the game. It helps transport the player into the immersive experience having them connect with their player and the game.

| Group Member | Idea  | Pros and Cons  |
|--------------|---|--|
| Ella         | When the main player returns to the city from a camping trip, they find the city to be unrecognizable. As they walk through the city its seen as a ghost town with no one in sight. Structures would be collapsed, fires would be set, stores would be shut down, and areas would be evacuated. | <p data-bbox="774 1260 1052 1344">Pros: Engaging and intriguing setting, emotional impact, and gives a sense of discovery</p> <p data-bbox="774 1365 1058 1390">Cons: Not enough initial context</p> |
| Zahra        | The player has just entered the streets of a broken-down city, there is no one around. The  | Pros: conveys message clearly.   |

|          |   |  |
|----------|---|--|
|          | <p>player is scared because it's abandoned, and the robots haven't left anything untouched and ruined. The player walks and sees the destroyed city, at the very end before his time is up, he sees a sign posted up on the wall almost about to fall talking about how they're would have been a policy to end this, but it seems that it was a year too late.</p>  | <p>Cons: may need more details for a better storyline.</p>   |
| Zhaojie  | <p>The player will start at the front of security gate, he can walk thru the gate into the city when passing all the security check, when the player goes into the city, the alarm suddenly rang. Player can go into the safe house to protect himself.</p>   | <p>Pro: To show people daily life in the city and how they will react and protect themselves if they are under attack.</p> <p>Cons: needs a lot of signs to indicate player to go into safe places.</p>            |
| Mohammad | <p>The player starts the game on a destroyed highway, surrounded only with trashes and broken roads. While entering the city, the player sees how abandoned the city is and sees broken buildings, fire, and trashes everywhere.</p>  | <p>Pros:</p> <ul style="list-style-type: none"> <li>- Creates a powerful atmosphere that describes the game</li> </ul> <p>Cons</p> <ul style="list-style-type: none"> <li>- Hard to design and animate.</li> </ul> |



### 1.3 Music/Audio

Having music and audio sets the tone for what the player is experiencing. Having different types of audios enhances the storyline and the immersion for players. Music and audio creates a specific atmosphere that game developers want their players to be immersed in when in different game environments.

| Group Member | Idea   | Pros and Cons  |
|--------------|--|--|
| Ella         | <ul style="list-style-type: none"> <li>- Haunting soundtrack to show the detrimental impact the robots had on society</li> <li>- Add sound effects that would be integrated in the game</li> </ul> |  |
| Zahra        | <ul style="list-style-type: none"> <li>- Narrator</li> <li>- Background music, mysterious and gloomy</li> </ul>  | <p>Pros: narrator allows for a storyline.</p> <p>Cons: music may be repetitive and annoying.</p>   |
| Zhaojie      | <ul style="list-style-type: none"> <li>- Security alarms</li> <li>- Countdown sound</li> </ul>   | <p>Pro: sense of oppression.</p> <p>Cons: sound too boring.</p>  |
| Mohammad     | <ul style="list-style-type: none"> <li>- Sounds of animals scavenging in trash</li> <li>- Leaks/dripping sounds from broken pipe or wet trash</li> </ul>   | <p>Pros:</p> <ul style="list-style-type: none"> <li>- Shows realism</li> <li>- Creating an empty city atmosphere</li> </ul> <p>Cons:</p> <ul style="list-style-type: none"> <li>- Can be distracting and disgusting</li> </ul> |

## 1.4 Interaction

Interaction is important in game making because it allows the player to actually play the game and make their own choices for their character. It is important that the player is able to look and move around to add to the immersive experience.

| Group Member | Idea  | Pros and Cons   |
|--------------|---|---|
| Ella         | <ul style="list-style-type: none"> <li>- Walk through the streets of the city</li> <li>- Is able to look around</li> </ul>  | Pros:   |
| Zahra        | <ul style="list-style-type: none"> <li>- Slowly walking through the city</li> <li>- No excessive movement.</li> </ul>   | Pros: helps show person wearing VR set the city better than if he was walking through it fast.<br><br>Cons: may get boring if city doesn't show the real impact autonomous robots can have.   |
| Zhaojie      | <ul style="list-style-type: none"> <li>- Can interact the security gate.</li> </ul>   | Pro: let player have good experience under the alarm.<br><br>Cons: would need some coding skills.   |
| Mohammad     | <ul style="list-style-type: none"> <li>- Walking through the city</li> <li>- Animals sounds when nearing a trash area</li> <li>- Can interact with animals</li> <li>- Showing broken roads, trash, and stray animals</li> </ul> | Pros: <ul style="list-style-type: none"> <li>- Having an enjoyable experience interacting with animals</li> <li>- Shows how abandoned the city is</li> </ul> Cons: <ul style="list-style-type: none"> <li>- Too hard to add interacting with animals</li> </ul> |

## 2. Analysis

We all agreed on specific components for the final visualization which we liked from each person's drawing. From Zahra and Ella's, we agreed that fire should be in the city adding to the purpose of the storyline. As for Mohammad's we liked the idea of the streets being ruined and blocked off. For Zhaojie's we liked the idea of robots flying on to buildings from the top.

For the final storyline we all had the similar idea of the player being in an abandoned city. After some discussion, we decided to make our story start differently but this was all derived from our initial ideas of how the virtual reality should start.

For the final music/audio we put all our ideas together. We saw that the background music, sound effects and narrator were all necessary for our virtual reality world to be realistic.

Finally for the final interaction we all had written basically the same thing just phrased differently which was that the player can take it's time walking through the city and see everything around it.

## 3. Final Elements

### Final Visualization

- Roadblocks and holes one the street
- Fire burning down buildings
- Cracks in buildings

### Final Storyline

- Player is driving on highway, suddenly sees a city on burning down, with evacuated cars from a far and decides to go see what's going on and enters the city to the catastrophe.
- The city is abandoned.

### Final Music/Audio

- Background gloomy mysterious music
- Sound effects of broken pipes, ambulances, alarm etc.,
- Narrator speaking sometimes to help with storyline

### Final Interaction

- Slowly walking through the city to get a good look of what's going on.

## 4. Conclusion

In conclusion, after reviewing our previous deliverables and considering our client's needs, our team brainstormed different ideas. We then independently listed our ideas and produced additional ideas, which led us to decide on a final design for the game. We identified four subsystems to our development process: Visualization, Storyline, Music/Audio, and Interaction. By focusing on these

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subsystems, we each talked about our unique ideas, finally selecting those that best aligned with our objectives. This led us to finalize our game design.

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