Product Requirements Document
Finding Seattle

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Summary

Finding Seattle aims to allow the general public to gain understanding for the increasing homelessness crisis in Seattle and empathy for the individuals who are experiencing homelessness.

Project Description

The homelessness crisis in Seattle is continually and rapidly worsening. While most Seattleites have noticed this growing issue, most have not experienced homelessness themselves. Because of this, the general public lacks empathy for those who are experiencing homelessness, and believe false stereotypes about homelessness.

Finding Seattle will address this problem through a variety of experiences. We will highlight the overall issue through a data visualization of the Seattle area, and the personal experience through interactive scenes and a VR video. The user will find themselves put in various situations that the homeless face on a daily basis. By covering a variety of different scenarios and living situations, we hope to emphasize the diverse conditions of the homeless population and show that there are various definitions and views of homelessness.

User Experience

What will people experience when they try your product?

When people start the application, they will start at the map of Seattle. This map serves as a hub for them to choose which experience they want to enter. From here their experience depends on which scene they choose. There will be a series of pins overlayed on top of the map. Each pin will teleport the player to another scene that will allow them to watch a video or participate in an interactive portion. In each interactive portion, there will be an exit button that allows the player to go back to the map view.

Hardware Platform/Device

We will be using the Microsoft Acer Mixed Reality Headset and a Lenovo Mirage Solo 3D camera.

Deliverables

Describe the features of your product in three phases:

- **Minimum Viable Product**: A minimum viable product (MVP) is a product with just enough features for a worthwhile and successful launch. You've removed all the non-essential "nice to have" features.
    - Map of Seattle to navigate between experiences
    - 1 VR video experience - video of an aspect of homelessness like options available at a food bank or the types of living situations that those experiencing homelessness often employ
    - 1 interactive experience - choosing food items within constraints at a food bank

- **Target Product**: What are you committing to ship/demo in the end of the class. (you will be graded based on achieving these)
    - Add a basic data visualization to the map menu showing where homelessness is most prevalent in Seattle
    - Add 1 more interactive experience - picking items to bring with you when police evict you from a space and you have to find new shelter

- **Stretch Goals**: If you finish early, what extra features do you want to pursue?
    - Add time-sensitive data visualizations to the map menu allowing the user to explore trends over time
    - Combining VR video and interactive experiences so that over the course of a single scene the user experiences both a passive role in a story and an active role in small interactive activities
    - Another interactive experience - examining the different types of lodging that people experiencing homelessness rely on and the sacrifices they each require
    - Another interactive experience - understanding the rights that homeless people have in the context of police encounters

Performance Metrics

Since the overarching goal of our project is to increase awareness about (and empathy toward) Seattle's homelessness crisis, we will consider our application to be operating as intended if it can help the viewer learn and care about something they hadn't before. For our educational application, measuring its success will mostly rely on qualitative results, because the connection that a user makes with our application will vary widely depending on their background.

To tell if our app is meeting our goal of educating about Seattle's homelessness crisis, we will gauge the accuracy and effectiveness of the information that it conveys. We will

consider our app's information successful if it emphasizes the most critical aspects of homelessness as determined by the advocacy groups we are reaching out to, and it will succeed in being educational if a significant portion of its users learn something they did not know before after completing the experience.

In terms of establishing empathy, we know that our application will need to have a high level of realism and provide a compelling user experience so that the user feels a connection with the struggles faced by those experiencing homelessness. To measure the realism of our application, we will research narratives described by those that have actually gone through homelessness, and our app will be successful if it largely matches the experience described in those narratives. As for the user experience, we will measure our app's success by asking new volunteers to try it and observing whether or not they are able to navigate the interactive elements without difficulty (which could ruin the empathy-building immersion).

Since our application is educational in nature and will be largely story- and data- driven, we will put less emphasis on measuring its success in terms of performance or precise interactive control schemes.

Milestones

Past weeks:
Week 1 (Apr 1 - Apr 5): Try technologies individually and get group assignments.
Week 2 (Apr 8 - Apr 12): Decide on project topic and technology to use.
Week 3 (Apr 15 - Apr 19): Research homelessness and decide on product specifics.

Future weeks:
Week 4 (Apr 22 - Apr 26): Meet with a co-lead of the UW Homelessness Research Initiative and start work on the product itself.

- Aaron + Erika: Import the necessary GIS information into Unity and render a basic map of Seattle in a plain scene.
- Alison + Amy: Set up the scene for the food bank experience - user is able to move through market and interact with items on shelves and place into cart. Work to integrate and provide interaction with existing assets.

Week 5 (Apr 28 - May 3): Complete storyboard and basic implementation of one experience of the minimum viable product.

- Aaron + Amy: Record 3d video scene and start editing. Figure out how to insert a 3d video into Unity and cut to experiences implemented with models.
- Alison: Continue working on the food bank interactive scene - focusing on the visuals of the surrounding environment
- Erika: Implement a pin system on the map to the enter the scene Alison and Amy have been working on.

Week 6 (May 6 - May 10): Complete implementation of minimum viable product.

- Aaron + Amy: Edit and place VR video(s) as a pin on the Seattle map.

- Alison + Erika: Finish first interactive scene and start building the second interactive scene, a tent having to pick up items and move to a new location.

Week 7 (May 13 - May 17): Continue implementation including features outlined in target product.

- Aaron + Erika: Start on building the scene for another type of lodging interactive experience.
- Alison + Amy: Work on atmosphere of the evacuating shelter interactive experience (selecting items under pressure).

Week 8 (May 20 - May 24): Work to complete implementation of target product.

- Aaron + Erika: Work on mechanics of second type of lodging experience.
- Alison + Amy:Work on mechanics of evacuating shelter interactive experience.

Week 9 (May 27 - May 31): Test different components to ensure project is seamless between different experiences and complete any remaining features.

- Aaron + Erika: Add a data visualization element to the Seattle map to show the growth of the homelessness population over time.
- Alison + Amy: Finalize the lodging and evacuation experiences.

Week 10 (June 3 - June 7): Polish all scenes and experiences.

- Aaron: Polish map.
- Alison: Polish tent evacuation experience.
- Amy: Polish switches between VR video and interactive experiences.
- Erika: Polish food bank experience.

Week 11 (June 10 - June 14): Final touches and demo design.

- Aaron: Prepare demo, and practice final presentation.
- Alison: Prepare demo, and practice final presentation.
- Amy: Prepare demo, and practice final presentation.
- Erika: Prepare demo, and practice final presentation.

Materials and any external help needed

3D Assets - Listed below
Paid Software - None at this time
Hardware - Microsoft Acer Mixed Reality Headset and VR video camera
Outside Expertise - Consult with Steve for VR video help and Gregg Colburn from the UW Homelessness Research Initiative. Still awaiting response from those contacted at Tent City Seattle, and UW Urban Collective.

Budget

Possible Assets:
Food items:
$33 veggies
$5 soup cans

$30 shelf + packaged goods (pasta, chips, cereal)
$20 canned food
$5 cans and boxes
$7 Market and Shelves
$8 food crate
$5 Shopping Cart
$7 Dining Room

Atmosphere (ground, trees, etc):
$35 Under Highway Meadows
$13 Police Car
$30 City Buildings

Tent / Camping items (sleeping bag, backpack, etc):
$35 tent + sleeping bag + backpack + various items
$24 tent
$15 Hiking Backpack with sleeping bags

Everyday items (toothbrush, backpack, etc):
$25 Public Bathroom
Bathroom: Hardware+Toiletries

Shelter:
Small House
$39 Makeshift Shelter

Risks and how they will be addressed

Low Risk:
One of our top concerns is that we're not accurately portraying the complex situations that the homeless population is facing. Because the population is so diverse, we want to be intentional in choosing an accurate blend of experiences that will depict the situations that many of the homeless population are facing, but the general public may not know of. The worst thing we could do is stereotype or marginalize the population. To address this concern, we are meeting with Gregg Colburn, one of the co-leads of the UW Homelessness Research Initiative early next week. We plan on getting our concerns addressed and will have a more precise course of action afterwards.

Medium Risk:
One of our stretch goals is to have both the interactive simulations and VR video integrated in one experience. This would allow the user to have the full experience of interacting and making

conscious choices that the homeless have to make on a daily basis, as well as visually seeing an accurate representation of what these people's' lives are like. We're concerned that our storyboard will not tie across and experiences well. There is a lot of uncertainty regarding what we want to implement and the footage we should take. We hope to have a clearer sense of direction after speaking with Greg. After this meeting, we will have a storyboard that will clearly document what videos we want to take and how we can tie this into the interactive simulation. Additionally, as this is a part of our stretch goal, we acknowledge that it's acceptable if our experience is not the perfect artistic image we envisioned.

Similarly, we're also concerned with finding the right timing between getting started with programming and building scenes. We don't want to build too many interactive scenes and purchase assets and then realize that we don't actually want to have the simulation in that environment or that our background story for the interactive portion is not a good storyline to follow. We would be wasting time and money. Conversely, we don't want to wait until we have all of our research done before coding, because we will most likely run out of time. To mitigate this, we plan on having a mix of the two. We're only implementing the elements that we know we will include regardless of what we find out from the meeting. The map is our 'menu' and takes us to each of the experiences so that's part of our MVP and implemented first. Additionally, we know we want to have a food bank scene and most food banks have the same general layout and internal appearance. By focusing on the interactive portion first and then implementing the background we can get started with our most important components and then work on other parts once we have met with Gregg and have a better sense of our project.

High Risk:
One of the core experiences that we'd like to highlight is using a 180∘ camera and capturing footage of different living situations. As this is a major invasion of privacy, we want to be respectful of people's lives and ensure that we aren't walking into living encampments and taking footage without the permission of people. We also want to be sensitive of the situation and recognize that these are people's lives that we want to document. To mitigate this concern, we plan on asking Gregg questions on living situations we could potentially document or if he has any existing resources that might be helpful for us. Additionally, an option we were considering is to go into a homeless shelter like Roots in the University District and get footage of it when staff members are preparing the shelter for the people. This would ensure that we aren't getting videos of people who don't want to be recorded and it would bring awareness to resources that are available to homeless people in the Seattle area.
Another minor concern we have towards the VR video is that we may not be properly equipped with the skills to take, import and edit videos. However, this can be dealt with by consulting the plethora of online resources and talking with Steve and Aleks.