

Product Requirements Document

Finding Seattle

April 19, 2019

Aaron Johnston (aaronj1@cs.uw.edu), Alison Ng (ngalison@uw.edu), Amy Shah (amysah@uw.edu), Erika Wolfe (eywolfe@cs.uw.edu)

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 focus on the personal experience of individuals experiencing homelessness through interactive scenes and a VR video. The user will find themselves put in various situations that a person experiencing homelessness would 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

When people start the application, they will be shown a VR video that explains their current situation and how they're currently becoming homeless. The player will then be transitioned into another VR video that shows them the interior of a homeless shelter a few weeks after the eviction process. This denotes the beginning of the storyline. The player will then be brought through a VR video of them living in a homeless shelter for the night, a VR video of them roaming in the park, and another VR video of them having to choose between homeless shelters while also balancing their working life.

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.
 - VR video experiences from the perspective of the person in our story.
 - A video of waking up at a shelter and worrying that their items have been stolen.
 - A rendered item either in the scene or in a separate mini experience of them searching through a bucket to find that some of their items were stolen.
 - A video of spending time in a park and being stared at / otherwise feeling like they are not welcome.
 - A menu to choose from a few shelters to go to tonight. Once they choose one, a video of the shelter they chose. Worst case these are videos outside of random buildings if we don't get permission to film inside of shelters.
 - Narrations of the various scenes from the point of view of the person in our story.
- **Target Product:** What are you committing to ship/demo in the end of the class. (you will be graded based on achieving these)
 - Start with a video of them getting evicted from their current living situation because their rent got raised.
 - Add a scene of them learning that a job interview got rescheduled for this afternoon. They then have to choose between going to the interview and going to find a shelter for the night.
- **Stretch Goals:** If you finish early, what extra features do you want to pursue?
 - Include the rendered bucket in the first VR video shelter scene instead of as a separate experience.
 - When choosing a shelter, include VR video of the outside and inside of the various shelters.
 - Add more interactions to the video scenes. I.e. the user can click on the eviction notice and it will zoom in and show them what it says.
 - Add an aspect to the choosing shelter scene that asks your identity. Some shelters are only open to women or youth, for example.

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 finalize storyboard.

- Aaron: Reach out to shelters and food banks to determine if we will be able to film there. Take a basic 3d video, download necessary editing software, and figure out how to insert a 3d video into Unity. Create storyboard and finalize outcomes.
- Alison: Update PRD to reflect final Design and flesh our storyboard and complete blog post.
- Amy: Update PRD to reflect final Design and flesh our storyboard and update Milestones.
- Erika: Create storyboard and flesh out storyboard and vr video experiences.

Week 5 (Apr 28 - May 3): Complete shot lists of vr video experiences and work on implementation of basic app structure and rendering interactable elements in 3D video surrounding.

- Aaron + Erika: Work on implementation of basic app structure with transitions between vr videos and menu options to navigate experiences. Complete shot list of public police interaction, interview/work and finding shelter experiences.

- Alison + Amy: Create rendered bin element in 3D video with items inside for waking up in shelter experience and checking if items are in bin/packing up in short amount of time. Complete shot list of eviction and waking up in shelter experiences.
- All: Start setting up times to record in homeless shelters and record 3D video of public police interaction and eviction scenes.

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

- All: Finalize list of which shelters we have permission to record in and gather footage in at least one location for waking up in shelter scene.
- Alison + Amy: Incorporate shelter video in waking up in shelter scene with rendered bin element, and add elements to interact with video.
- Erika: Finalize vr video editing of being evicted and police interaction in a public space.
- Aaron: Finish up decision tree of having options to go to different shelters and finding a home for the night, incorporate real 3d images or videos of the shelter options.

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

- All: Complete gathering footage in other homeless shelter locations and integrating 3d video scenes into our project.
- Erika: Work on editing and adding interaction in finding shelter experience.
- Aaron: Work on editing 3d video scenes and finalize interactions to move between videos.
- Alison + Amy: Continue waking up in a shelter experience adding light and sound elements and editing vr video scene.

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

- Add a scene of them learning that a job interview got rescheduled for this afternoon. They then have to choose between going to the interview and going to find a shelter for the night.
- Aaron + Erika: Incorporate transition and voiceover between interview/work video and finding shelter experience.
- Alison + Amy: Add voiceover between the experiences to create the storyline, and include narrative with eviction scene.

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

- Aaron + Erika: Finalize incorporating all experiences and video into one app and editing of video scenes. Record voiceover.
- Alison + Amy: Finalize adding information about each homeless shelter in finding shelter scene, and incorporating narrative elements and voiceover script to complete overall storyline.

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

- Aaron: Polish transitions from menu to finding shelter experiences and transition from work to finding shelter scene.
- Alison: Polish waking up in shelter experience.
- Amy: Polish switches between VR video and interactive experiences.
- Erika: Polish finding shelter 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 - 3d Video Editing Software such as Magix or Adobe Dimension

<https://www.magix.com/ie/3d/>,

https://www.adobe.com/creativecloud/plans.html?single_app=dimension&promoid=FZPQZ25Y&mv=other

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. Hopefully we will get to work with a few shelters throughout the city.

Budget

We have listed assets we would like to use below to create out interactive experiences for the evacuating a home and food bank scenes, totalling to around \$400 and we would like to allot the remaining \$100 to any other assets we may need or video editing software we may use with the 3d videos such as Magix or Adobe Dimension.

Possible Assets:

Items for bin inside shelter:

[\\$15 Hiking Backpack with sleeping bags](#)

[\\$34 Folded clothing](#)

[\\$40 Toiletries](#)

[\\$40 Shoes](#)

[\\$20 Water bottle](#)

[\\$30 Socks](#)

[\\$20 Toilet paper](#)

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.