Stories that Move
Concept Videos - HCI (INFO 6410)
Team Members: *Brandon Plaster (bp364), Rohit Jain (rj288), Alap Parikh (akp76), Jonathan Huang (jhh283)*

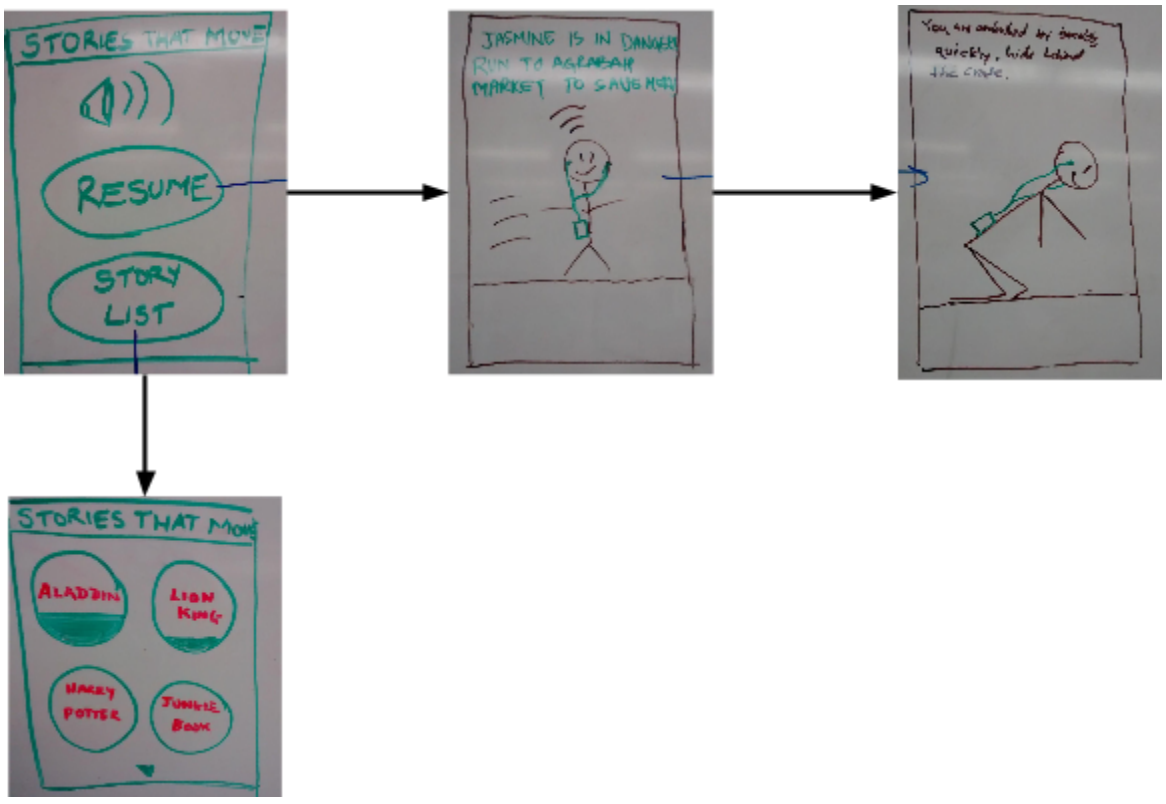
TITLE
Stories that Move

VALUE PROPOSITION
"Stories that Move" engages users with interactive storytelling, where the characters will come to life in the user's real environment and allow the user to become part of the story.

PROBLEM/SOLUTION OVERVIEW
Physical inactivity, common in 1 out of 4 adults, has been identified as the fourth leading risk factor for global mortality. Though often the scapegoat, connected digital platforms/devices cannot be blamed, as it is the applications created for them that define their utility. We propose that by adding physically-interactive storytelling, we can make digital technology the solution, rather than the problem. The proposal is to create an Augmented Reality (AR)-based story platform that will engage the user with a story, while simultaneously requiring the user to actively explore the physical world in order to progress the story forward.

UI Flow Storyboards

Design #1: Audio Based Immersive Story Platform



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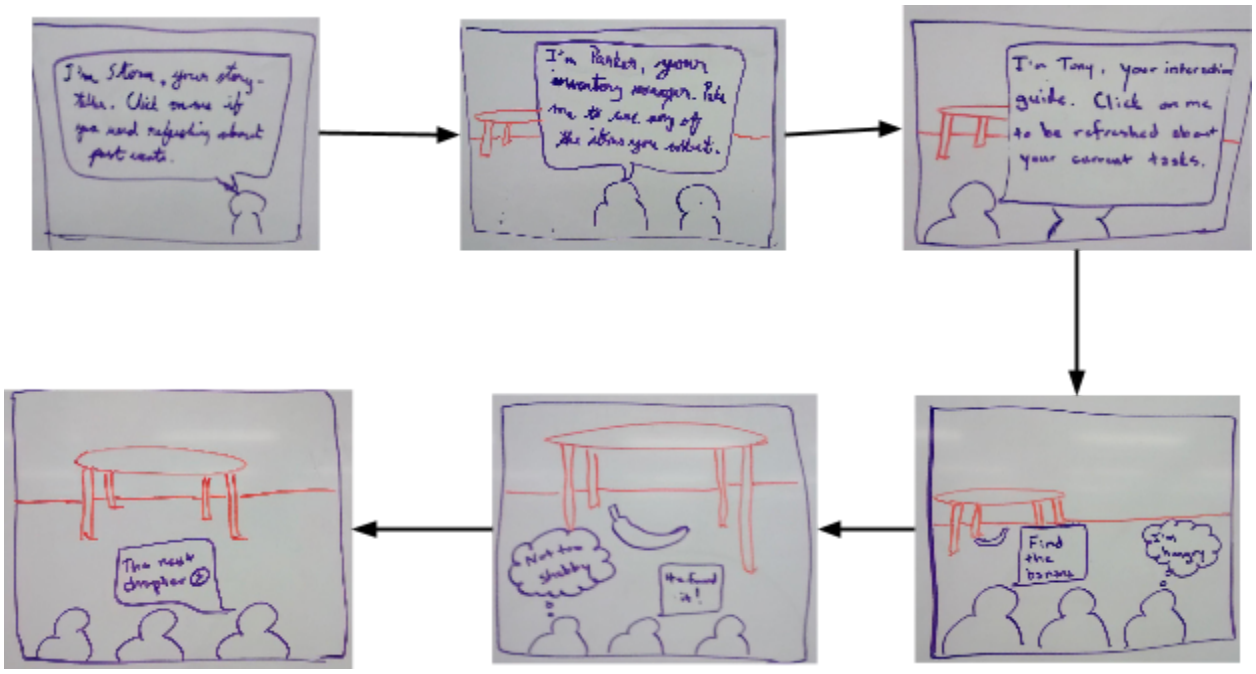
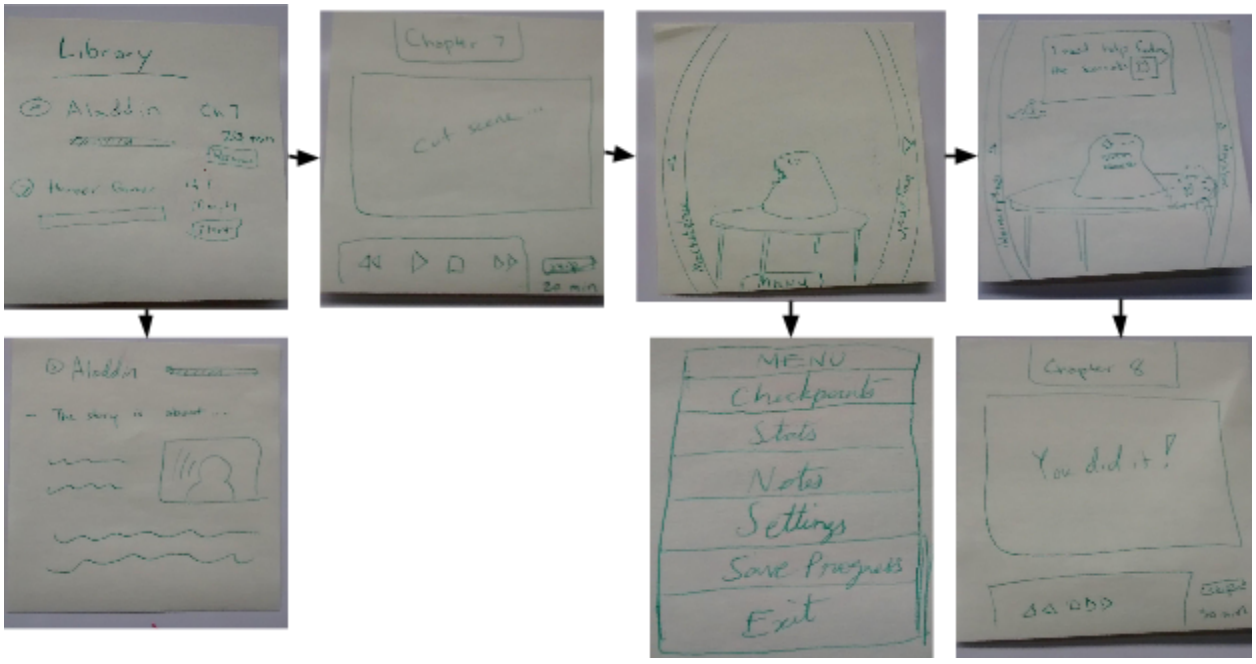
Design #2: Instruction/Commentary Based Immersive Story Platform



Design #3: Follower/Movie Based Immersive Story Platform



Selected Interface Design

The final interface we decided on was design #2. The choice was made by utilizing a combination of the following criteria: contextual inquiry feedback, platform/implementation limitations, and design gut feeling.

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Based on the feedback we received from our contextual inquiry exercises, we knew that our users desired the following when looking for a story/game platform to spend time on: fixed time activities in structured/imaginative environments that give users the freedom to explore. Using these criteria we narrowed down our choices to interfaces 2 and 3, the two interfaces with a structured "visual exploration" factor (in contrast to the audio-only format of interface 3). Between these two, interface 3's predefined routes (where users are asked to follow a virtual guide) make it technically harder to implement. While interface 2 proposes augmenting the users' surroundings with a defined task and interaction, interface 3 requires prior knowledge of the users' surrounding in order to properly map a story, an expectation we as designers think is technically unrealistic. This limitation combined with the designers' intuitions that a guided set of simpler tasks with commentary -- which users can easily start and achieve -- better matches the desired time-constrained activities requested in our contextual inquiry interviews and made it the optimal choice.

At a high level, our chosen interface is an augmented reality mobile application in which the user is "told" a story by on-screen NPC(s) [Non-Player Character] who, over the course of the story, request that the user completes simple physical tasks interacting with a virtual environment. These tasks occur at random intervals and are required for the story to continue. As an added level of interaction, the completed actions are accompanied by commentary by the storyteller(s). In contrast to design 3, design 2 leverages a simpler construct for "storytelling" and "task achievement." Rather than having all action (including movement) be mapped out as a part of the interactive story, users are encouraged to complete more frequent smaller goals where the on-screen personality acts more as a storyteller rather than a guide.

More specifically, our proposed interface will have the following preferred user flow:

- Users can select different stories which act as a theme for the visual interface and the commentary language provided by virtual guides.
- Upon starting a story, the user is greeted by an on-screen NPC who acts as the storyteller for the scene.
- At select intervals, the NPC will ask the user to perform an immersive physical action which will utilize the available hardware sensors -- Accelerometer, Gyroscope, Camera, and Touchscreen. One example we use throughout our sketches is: walk to the next town and find the banana. Task completion is required for the user to proceed in the story.
- The physical activity that the individual tasks require will are defined by the selected story (dependent on platform restrictions) rather than by the application itself.
- As the task is being performed and successfully completed, the NPC will provide commentary/banter encouraging the user towards success.
- Users can exit and resume previous selected stories. This interaction (along with the story selection) occurs in a high level selection / pause-screen menu.
- At story completion, activity statistics are recorded. These statistics can be viewed as a part of the options menu (only for completed stories).

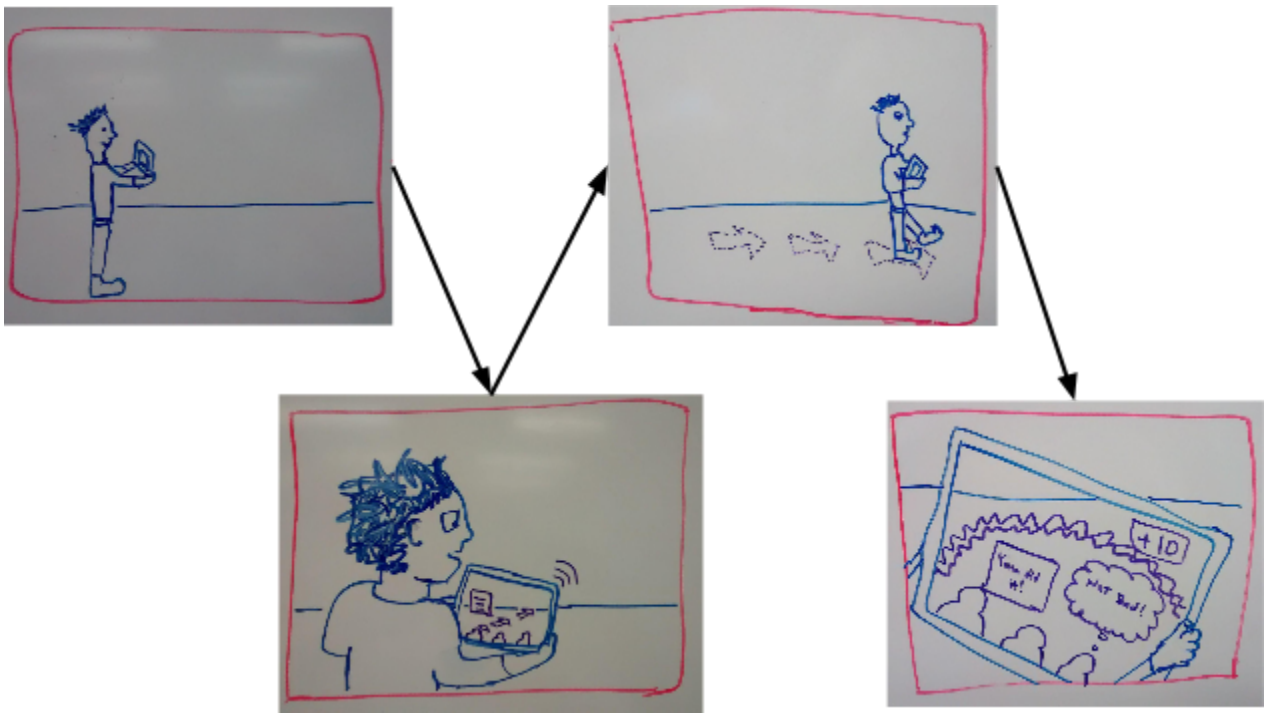
The part of the interface our sketches focused on was the primary story Augmented-Reality (AR) viewport. In this view, users can see the world through the lens of their camera, however with some additions. On screen will be a projected set of graphics corresponding to the

theme of the chosen story. These graphics will be overlayed over the conventional image captured by the camera. In addition, one or more NPCs appear at the bottom of the screen communicating the story over audio/text, requesting tasks be completed, and providing overall story/activity feedback. Along with the viewport, there will be a minimalistic set of menus offering the option to exit, resume/change stories, and see statistics for completed stories (similar design shown in the library screen from design 3).

UI Task Storyboards

Based on the last assignment the three tasks we wanted to model for this exercise were: "Traversal" (easy), "Knowledge Acquisition" (medium), and "Interaction" (complex). In the case of our interface, all of these actions existed in the context of the AR viewport described in the previous section. The following scenarios were developed and illustrated below:

1. Traversal: In order for the story to proceed, one of the storytellers asks that the user to walk forward following a set of on-screen arrows projected over the camera's captured image of the surroundings. When the user has walked the entire requested distance (tracked using GPS/accelerometer), the NPCs comment on a job well done (multiple NPCs provide different commentary with different levels of praise).



2. Knowledge Acquisition: As a part of a requested task to continue the story, the NPC requests that the user search for a virtual item ("banana") projected over the camera's captured image of the surroundings. The user moves the tablet laterally around his surroundings "searching" for the "banana" and is told by the NPC that he is looking in the wrong area. The user adjusts looking at another portion of his surroundings and sees the virtual banana on a table in his background. The NPC commends him on a job well done.

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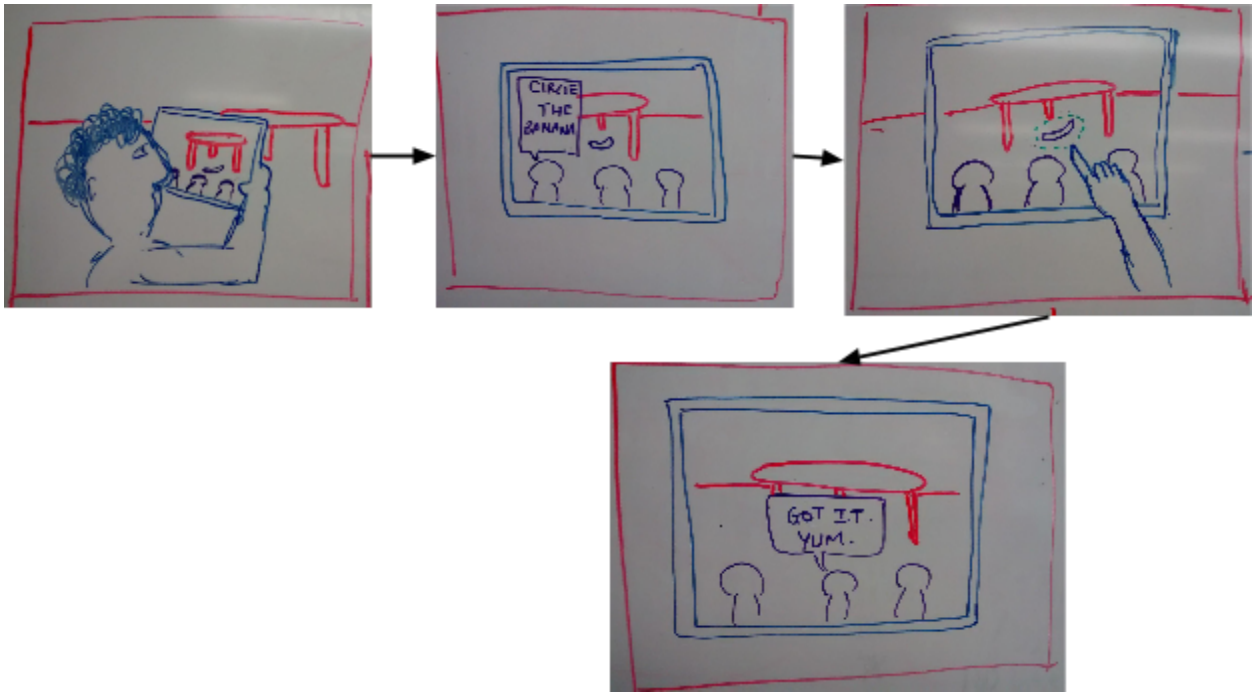
3. Interaction: After finding the banana on screen, the user is asked to tangibly interact with the banana in order for the story to continue. The NPC asks that the user to “pick up the banana” so that he can have a snack to continue telling the story. The user circles the “banana” on his touch screen, the NPC picks up the banana, eats it, commends the user, and continues the story.



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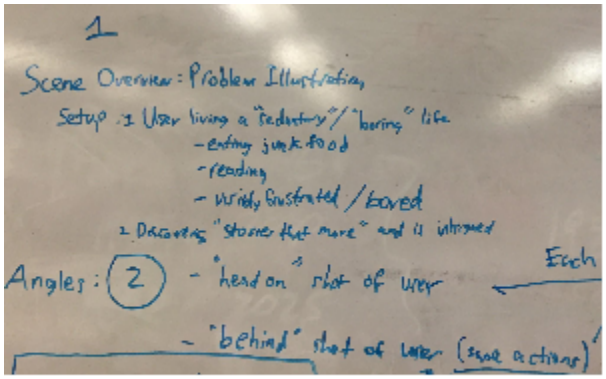
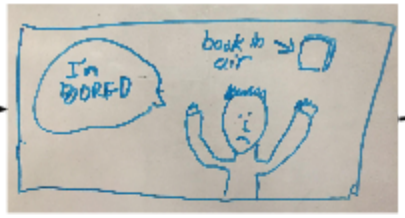
Video Storyboards

At a high level, our goals for the concept video were the following: we wanted to illustrate the problem (inactivity as a result of a preference for sedentary activities), demonstrate the proposed solution and it's potential appeal (an Augmented Reality story platform), and illustrate how the fundamental tasks of our interface (Traversal, Knowledge Acquisition, and Interaction) will be carried out. In order to do this, we wanted to storyboard multiple shoots from several different perspectives demonstrating the contrast between the "real world" and the "augmented reality world." The result is as follows:





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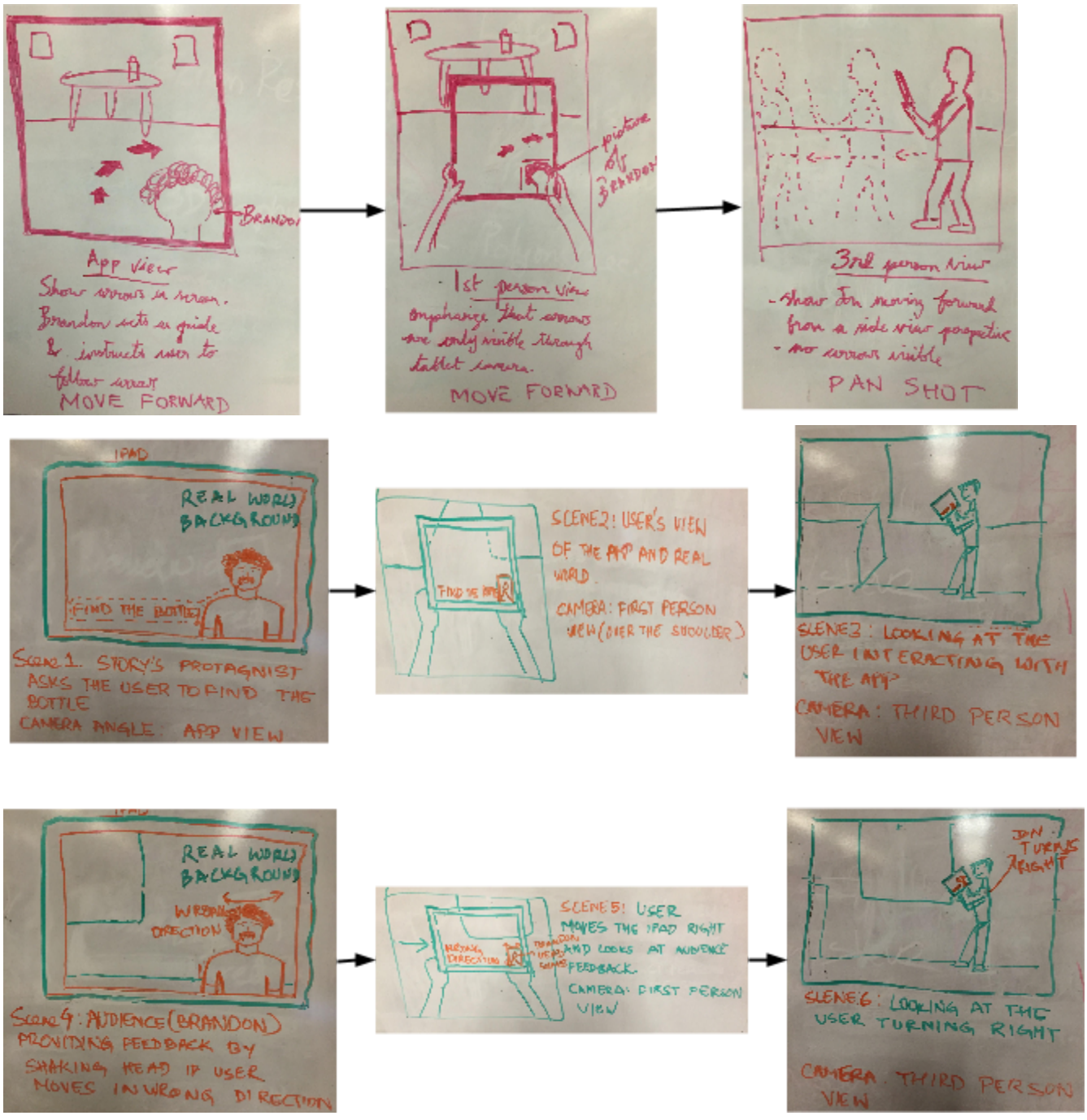

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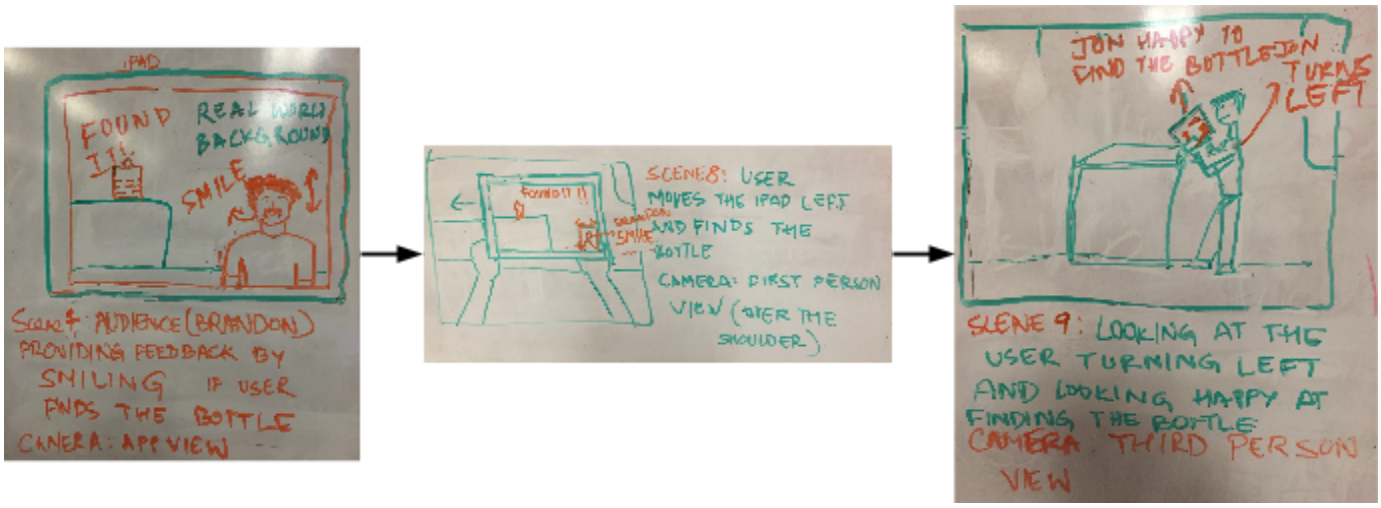

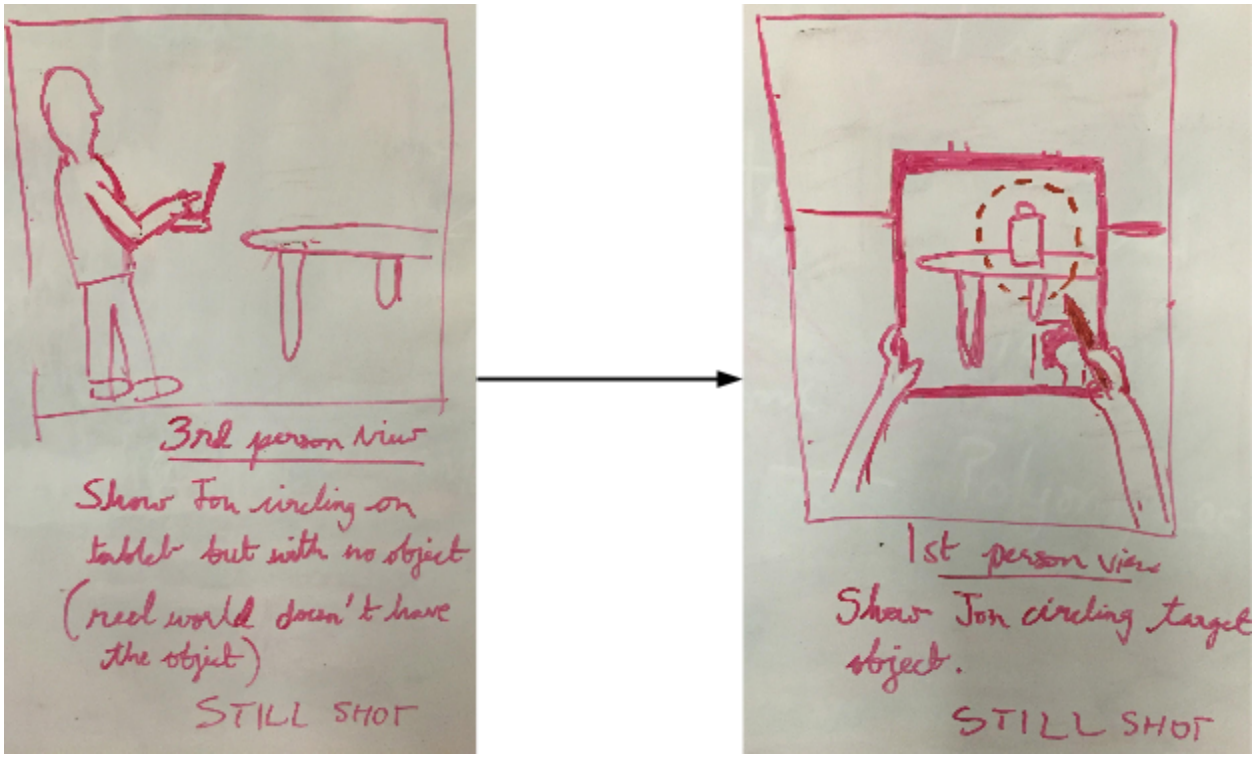

Concept Video Description

Video Link: https://www.youtube.com/watch?v=Cuij6gJcBi4

For the actual filming of our video, we used the following tools: an iPhone 5 Camera (for video capture), iMovie (for video editing), and cardboard low-fidelity prototypes (for the "hardware tablet" and the framed interface). The roles of the interface user and in-App storytelling NPC were played by two of our group members.

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Over the course of filming we ran into three major challenges: how to convey the "augmented reality" perspective (contrasting it with the real-world perspective while still keeping the views consistent across shots) [#1], how to properly illustrate in-app interaction without a tablet readily available during filming [#2], and how to act without any trained actors in our group [#3]. Out of these difficulties, we were able to come up with an innovative approach to #1 and a workable solution to #2.

In order to properly convey the desired perspectives, we decided to film multiple versions of the same scene presenting both a "first-person" in-app view and multiple "third person" real-world views for each individual task. By doing so, we feel that the video successfully demonstrated how the interface allows the user to complete our three proposed tasks while illustrating the mechanism through which user would "see" and interact with the AR interface in contrast to his/her real-world surroundings. By planning out our shots in our video storyboard, we found that this approach worked extremely well in the final edit.

As mentioned earlier, one challenge we did run into while filming these multiple views was the task of capturing an on-screen interaction with the augmented world. In order to deal with this, we utilized a piece of clear plastic and a dry erase marker overlayed onto our cardboard prototype. By cleverly utilizing our filming crew members to hold the screen and direct the actor's drawing motion to properly align with the "virtual" water bottle, we were able to capture an imperfect version of the desired "circling "of the virtual object. Ideally, in future concept videos, this interaction would happen on an actual tablet rather than a low-fidelity cardboard/plastic prototype.

In total, the time needed to prepare (video storyboards and props), shoot, and edit our concept video (not including UI/Task storyboards) was approximately 5 hours. We spent 1 hour performing design prep activities which included: storyboarding the angles/scenes and preparing physical mock-prototypes of our interface. In addition to this prep time, we spent 2 hours filming our various shots and 2 hours on editing the film.