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

Title:
Stories That Move

Problem and 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 move the story forward.

Tasks:
Consistent with our progress up to this point, our representative tasks were the following: "Traversal" (simple), "Knowledge Acquisition" (medium), and "Interaction" (complex). Based on the feedback we've been provided on prior assignments, we wanted to provide more distinction on the frequency of tasks (explained below). As with before, all of these actions existed in the context of the AR viewport described in the previous section. Our prototype was designed to display the following user tasks in mind:

- ***"Traversal"***
  - Description: Users will need to traverse the physical environment while using the interface. This task is required to progress the story forward and to see other parts of the story. The stories will be segmented into multiple locations, or waypoints, and the user will need to physically move to get to the locations (in this case the pig's house).
  - Frequency: As the story relies on the user to traverse and interact with the environment (and considering the problem we are trying to solve), the frequency at which traversal is required will be **high.**
  - Complexity: Traversing the physical environment will be of **simple** complexity, as the primary usage setting is indoors.

- ***"Knowledge Acquisition"***
  - Description: In order for users to gain more information about the story and to help the characters progress through the story, users will need to listen to and watch the characters interact with the environment, and will need to use context clues to extract information (following on-screen directions and prompts). This may require the user to look around, listen to dialog, and recall previous parts of the story.
  - Frequency: Knowledge acquisition will happen with (relatively) **high** frequency, as the user will need to be paying attention to what is going on in the story, and in the environment around them at all times.

- Complexity: Knowledge acquisition will be of **medium** complexity, as the majority of the involved subtasks will be passive listening and looking. It will require the users to pay attention to these occurrences and to actively think about what they see.

- ***"Interaction"***
  - Description: Users will need to manipulate items in their environment (such as moving objects from one location to another [e.g. logs]), as well as interacting with the virtual environment (such as pressing an augmented button on a real surface).
  - Frequency: Interactions will occur with a **high** frequency. In order to make the user feel engaged, these interactions may be less frequent than the other tasks but will still be very involved and frequent.
  - Complexity: Interactions will be of **high** complexity as they require the user to physically interact with virtual elements, which will require the user to learn how best to engage with non-haptic feedback.

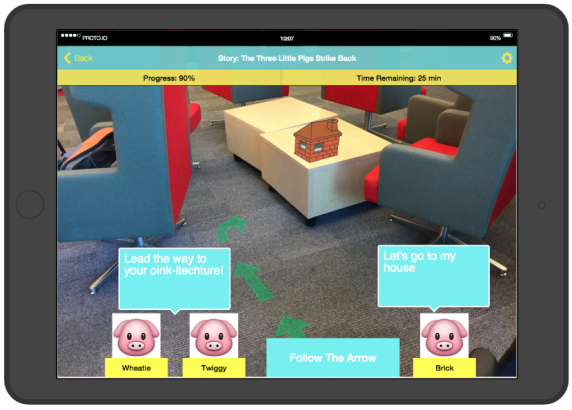
As mentioned before, based on the feedback we received from prior exercises, we decided to recalibrate our ratings of the frequency of our tasks (and by extension, complexity). Fundamentally, our solution is based on these three fundamental tasks which build up the end goal (an interactive story that promotes a more engaging and healthier lifestyle). While there is a relative scale of complexity (with interaction being more complicated than "looking around" and more complicated than "moving around"), the received feedback was correct in that all three should be occurring with a high frequency to promote the engaging and activity-promoting solution we are aiming for. Although there is a relative scale of complexity, all the tasks are common and a necessary part of the experience we are designing.

Revised interface design:

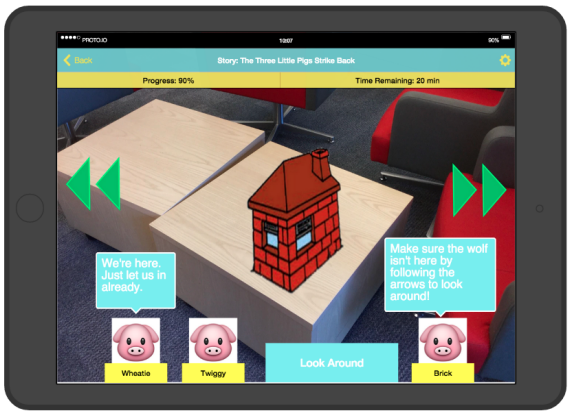
As suggested in class, our Med-Fi prototype was focused on building on the "interactivity" of our Lo-Fi prototype. This meant creating a more complete application wireframe which allowed for a higher amount of exception handling and explicit feedback. Based on our Low-Fi prototype (and the accompanying heuristic evaluations), we added the following features: a back button to provide the user more explicit control of their progress in the story (in the context of their current position in the story), an exit option to allow the users to quit and save progress, more explicit directions on what the user is supposed to do at every juncture (adding explicit instructions on screen in addition to character commentary), and a more descriptive help screen (to provide context on the broad solution that the project is focusing on). As with our prior prototypes and videos, we wanted to allow users to experience and execute the following iterations of our designated "tasks." These tasks follow the primary flow of the application as presented in proto.io. Please follow along as needed.

1. Traversal: In order for the story to proceed, one of the on screen pig storytellers asks that the user "go to my house" where the user is guided by a series of on-screen

arrows projected over the "surroundings" as captured by the tablet's camera. Only after "moving towards the house" (designated in our prototype as tapping the on-screen arrows) does the story move to its next stage. Something to improve upon for future prototypes is to better capture the idea of waypoints -- the story will not proceed until the "house" is explicitly reached.

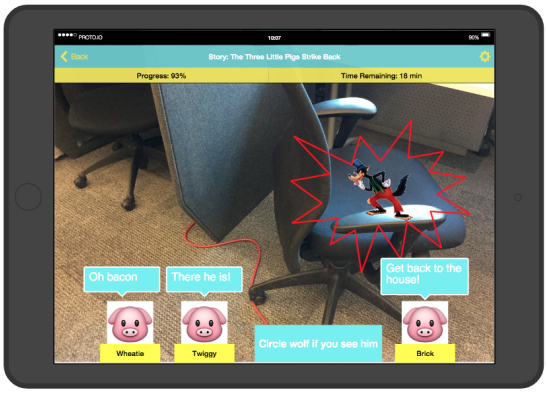


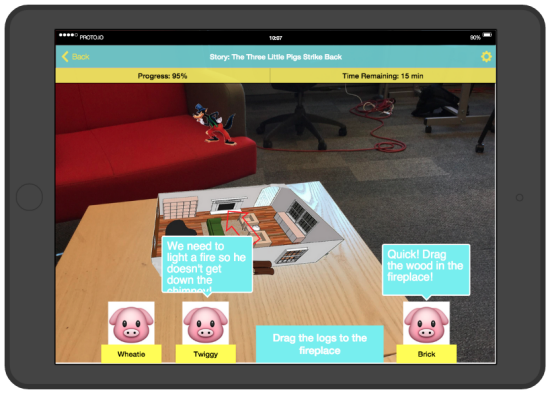
2. Knowledge Acquisition: After reaching the house, the pigs want to make sure that the "wolf" (the antagonist in the story) isn't following the group. In order to proceed in the story, the user is asked to "follow the arrows" and "look around." In order to simulate this in our Med-Fi prototype, the user is to tap the on-screen arrows (simulating the rotation of the tablet). Once the user "looks around," they are prompted to notice the wolf on screen (digitally projected into the environments' surroundings). In order to proceed, users are told to circle and identify that the wolf is there before the story moves forward (tapping the wolf in our prototype).



3. Interaction: Up to this point in the interaction flow, the user has already been asked to interact with the wolf. However, in order to explicitly demonstrate how interaction can help move the story forward, we also include another example once the user is in the house. In order to keep the wolf out of the house, the pigs ask the user to drag the wood to the house to start a fire (making sure the wolf stays away). In the case of this

prototype, the user taps the on-screen logs and the user is visually prompted with a smoke cloud ballooning upwards into the chimney indicating success (along with commentary from the pig storytellers).





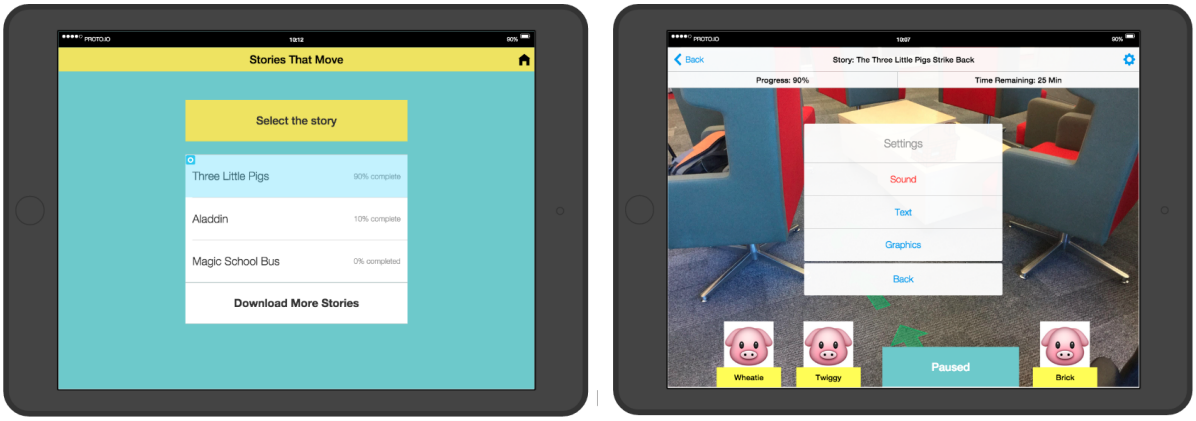
Prototype overview:

For this version we transitioned our prototyped into a series of interactive screens using proto.io, a tool that was suggested to us at the beginning of the autumn semester. Proto.io was helpful because of our prior familiarity with it and the ease of putting together iPad and iPhone app experiences. It has an easy drag/drop/edit interface; ideal for a quick assembly of a medium fidelity experience.

That being said, we did face a few difficulties with proto.io. For example, it is not possible to embed videos in proto.io, and this restricted our ability to include a more realistic imitation of the app experience. We were bound to using only static assets, which is something we did not foresee. More importantly, it being a web service, we had no access to tools such as accelerometer and camera, which would have been helpful to mimic an actual iPad experience (an iPad is our eventual device of choice for building out this project).

We left out deeper access into the settings screen, since that would just be a fleshing out of existing functionality and not add to the core experience and idea of the project. We deemed it more suitable to include in a hi-fi prototype. The help screen is currently more geared towards explaining our project to a ‘tester’, instead of conveying instructions to a real ‘user’. In the context of this as an assignment and project, we felt this may be more suitable, and is also something that could be easily changed. As mentioned above, we also increased the detail of our on-screen instructions to guide a user through, and envisage that the frequency and details of these instructions be customizable via the ‘Settings’ functionality. Lastly, we left out in-depth and custom design, as this too is peripheral to the core idea and experience, and something more suited to a higher fidelity prototype.

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



For this prototype to convey the experience more accurately, we would have to either code or simulate movement, rotation, and virtual objects. More often than not, this is an extremely harrowing and lengthy process, taking multiple weeks to achieve. It would not have been possible for us to satisfactorily build this out in a week, and hence we substituted this with screen taps that skip the user/tester forward in the story, giving them static pieces of the story. These screen taps can be viewed as “Wizard of Oz” technique, because they require the user/experimenter to manually account for a user’s movement, whereas in an actual product tapping on the arrows would not be necessary.

In this prototype, we do not have any hand coded features.

Prototype screenshots: Link