Assignment 3f: Design Refinement Report April 12, 2019
Human-Computer Interaction

Design Refinement Report

1. **Title**: Locality

2. **Team**
   All: Collaboratively built the low-fidelity prototype with construction paper and came together to synthesize design research after the user tests.

   Jack: Worked on high-fidelity prototypes in Adobe Illustrator. Led usability test with Sid. Took notes during test with Douglas. Contributed to discussion of overall design.
   Shannon: Led usability test with Douglas. Contributed to discussion of overall design.
   Itai: Worked on high-fidelity prototypes in Adobe Illustrator. Took notes during test with the anthropology major. Contributed to discussion of overall design.
   Jessica: Led usability test with an anthropology major (who wanted to be kept anonymous). Took notes during the test with Sid. Contributed to discussion of overall design.

3. **Problem & Solution.**
   Problem: We hope to solve the problem of community engagement in areas that may be experiencing rapid change in demographics. New residents to a neighborhood often don't have the means to connect with lifetime residents of that same neighborhood. Visual histories of specific areas or neighborhoods are tough to find, and so it can be difficult to track the changes in land usage, ownership, and density without access to cultural institutions such as libraries and historical centers. Thus, stories, memories, and artifacts are often lost upon one's passing, and history can disappear without a trace.

   Our goal is historical preservation and appreciation. We hope to give newcomers and old-timers the resources and space to connect in an effort to eliminate their divide. We also hope to maintain a non-institutional record of community changes driven by small, individual contributions, and that this system creates agency among various communities.

   Solution: We have designed a system which allows users to upload and share time-period and location-specific media, as well as hold discussions surrounding this media. Users are able to search for specific locations and can see relevant results visualized on a map. Each result contains a brief overview and historical data alongside personal posts from users. Users also have individual profiles and can connect with one another.

4. **Initial Paper Prototype**.
   The original paper prototype had four main pages: a search page, a map/results page, a location page, and an add media page. The user would enter a search query, which would bring the user to the map page with relevant icons indicated. The user could also view a list of results, of which clicking on one

would load the specific location clicked. The location page would then display a brief overview of the location, as well as historical data and personal user posts. If the user wanted to add media, they would click an 'add' button, which would load the add media page. From there, the user could write a text description and upload media as desired. Originally, there was a 'new search' bar at the top of each page, which is how a user would start over with a different search.

Primary tasks: We focused on two specific tasks: **searching** and **sharing**.
For **searching**, we wanted to provide a resource for community members to find specific media relating to neighborhoods, time periods, or both. The design would allow individuals to find information, photographs and conversations about specific areas, groups or historical moments within a large, extant collection.
For **sharing**, we wanted a platform for individuals to share any private media or information they have relating to a specific location and time. This allows the design to have a more personal and intimate history of a community rather than only its historical background. As a result, we shaped the design around being able to upload and share personal anecdotes, memories, photos, videos, and other media from a personal collection for others to access and enjoy.

5. **Testing Process**. Description of the testing process, including methods and participants. The description should include a retrospective discussion of how the design process was refined.

   Testing method: We first explained the idea behind our interface and the goals we hope it will achieve. We set up a realistic scenario and gave a brief description of our two primary tasks, before asking the user to complete the tasks. We then broke down the tasks into smaller subtasks, which we used to guide the user in completing the larger primary tasks. Throughout the test, we asked questions about whether the user's expectations were met upon each event and noted any confusion as well as any direct comments. We filmed the test as well for more detailed reference after the fact.

   Participants: We ran three usability tests: one with a representative young user, one with an anthropology senior, and one with a representative older user.

   Refined design process: Throughout the testing process, we learned to clarify parts of our website that were unclear, especially to our older users. We learned how to better explain our design so that people understood what their goals were in interacting with the website. We learned how to ask less leading questions, but more informative ones, especially when our participants were being more quiet.

6. **Testing Results**. Summary of the results of the paper prototype testing and refinement. What was learned about each version of the prototype? What changes were made as a result of the heuristic evaluation and usability testing?.

   Heuristic evaluation:

The heuristic evaluation showed us that the flow we had envisioned was not necessarily that straightforward for users to interpret. For example, we had not intended for the profile aspect of the design to be a focus; rather, it was meant to be a feature necessary for people to share their personal experiences from. However, the result was that users asked about profile features that are common to other social media sites but were not relevant for our tasks. As a result, we decided to narrow down the focus of the design to specifically searching and sharing, instead of including features like messaging other profiles or commenting on posts. Other features were also too complicated, such as the suggestions column and the use of tags. The users did not interpret them the same way, leaving them confused about what these displays were meant to offer. We learned that some of these features were superfluous and complicated rather than eased the user's experience. There was also a disconnect between the search process and the order of pages displayed. The other team recommended some reordering of pages displayed, which improved the logic of the design. Furthermore, they brought to our attention that there were some missing features, like being able to add a new point of interest, filter through other user's posts, and using zoom control on maps.

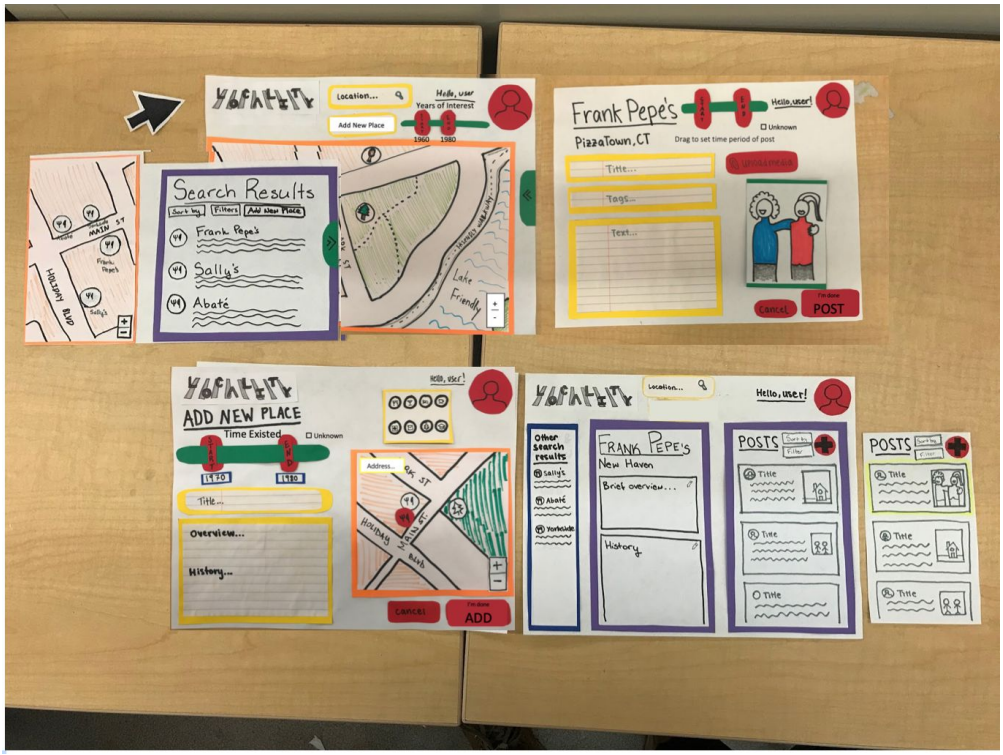
1. Reordered search results so that the textual results come before the map view; provides a clearer message to the user about what results are returned from their search.
2. Added ability to search through user's personal posts using filter/sort by buttons.
3. Removed the suggestions side column and replaced it with 'other search results.'
4. Added ability to add a new point of interests in the case that the place the user was searching for does not appear.
5. More generally: tried to make the pages titles and structure of the pages feel more consistent

Usability testing:
We noticed some redundancies in our search function and learned about a need for a function to type in the address of a new point of interest when creating it. This was instead of requiring that the new location be placed as a pin on the local map, as some users like Sid are "directionally challenged" and would be hard pressed to figure out exactly where the spot in their head corresponds to on the map. We also realized that we might need more labels on different items, including the timeline and icons. As a result, we learned that some of the buttons could be more explicitly labeled to provide clarity for the user. One of the users was also confused about some of the buttons (especially the "post" and "add" buttons), which could have been simplified with a clear "I'm done" button. We also learned that the placement of the timelines was somewhat confusing and needed a description of how to use them better.

1. Better explanation of the timeline feature. It is a vital part of our project and all of our tasks, but each one of our users were confused by it. Adding more description and labels, especially at the first page made all subsequent uses more intuitive.
2. Simplified search options. We combined the search bars into one, only giving the user the option to search by location.

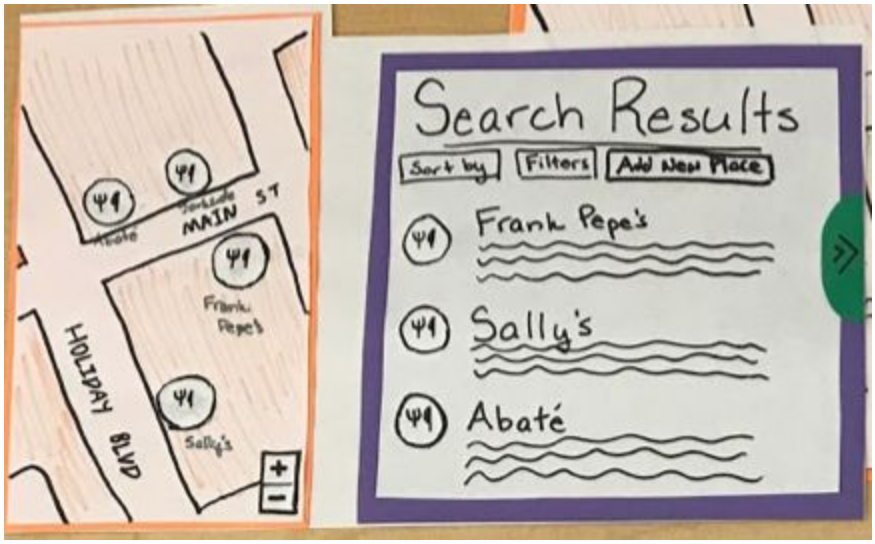
3. Better defined “post” and “add” buttons. This was mostly an issue for the inexperienced user, which is a large part of our user base. Since it’s a key feature, especially to our post task, it was important for it to be very clear how to complete the task.
    a. Labeled the buttons with an additional “I’m done” above it. Better placement of the timelines, as well as better descriptions from the beginning.
    b. Added the new place button to the page.
4. Removal of the “tags” search bar. Although tags are nice to be able to search by or define something by, having the extra search bar was confusing and went unused. Replacing it by the “Add new place” button fixed both the issue of the confusing field and the lost “add new place” button
5. Addition of the address field. Most people can’t remember exactly where a location is just by looking at a map, so adding that field made it easier to understand how to add a new place to the map

7. Final Paper Prototype. Final version of the paper prototype with a description of critical aspects of the design and how the prototype supports the two primary tasks.



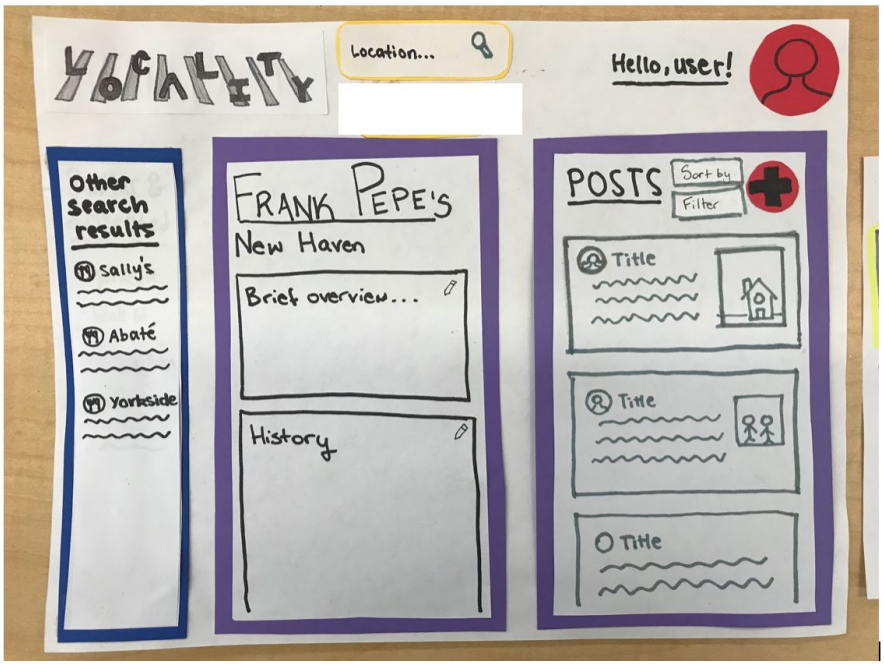
The first four images show the first primary task of **searching** for info and media from local histories. The person searches using the "location box."

Searching brings up a list of results

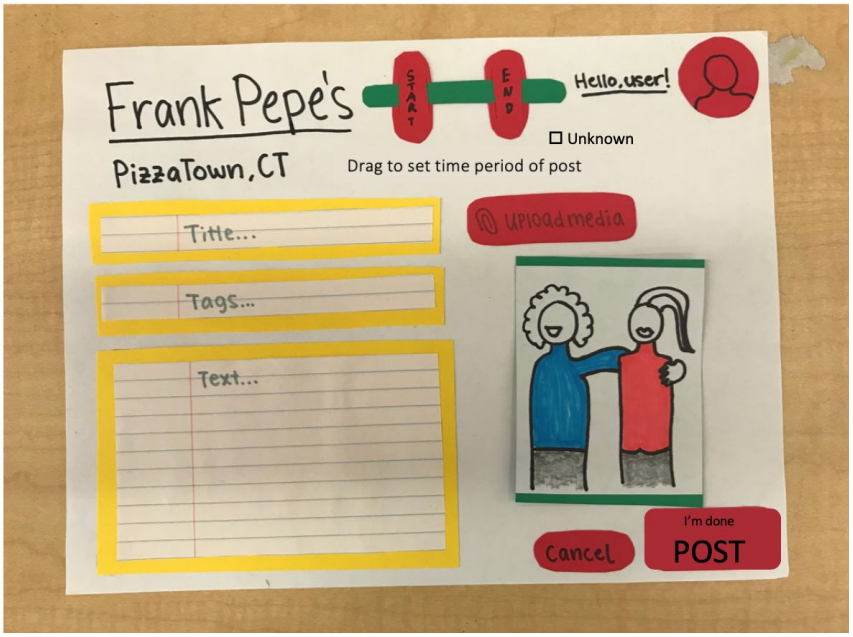


However, if there are no results, the user can add a new place to the map

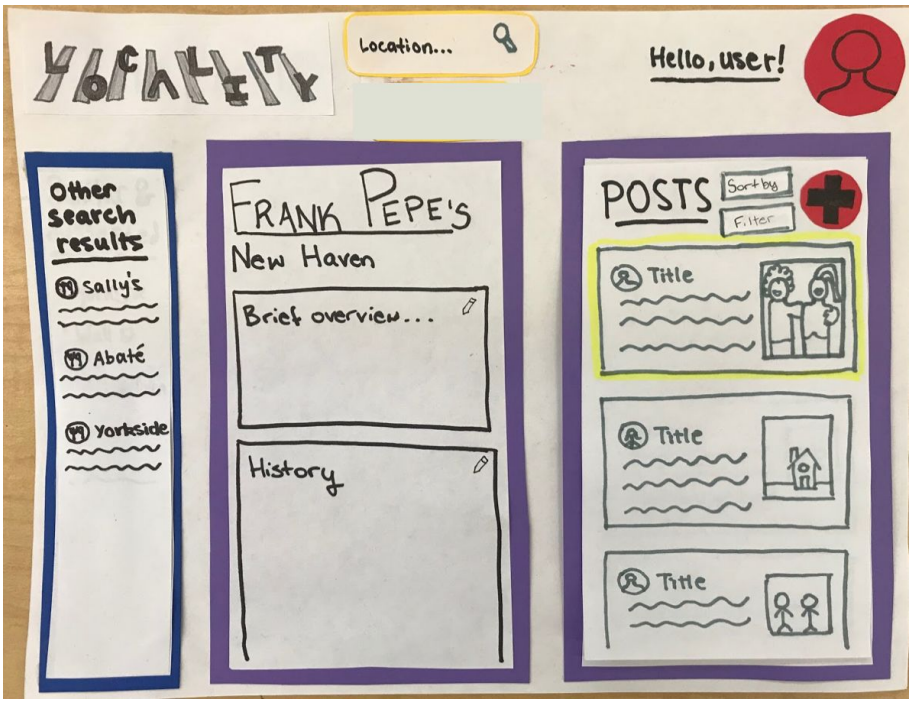
This is the page you end up on after searching. This is also the start of the primary task of **sharing** your own memories and media to the local archive.



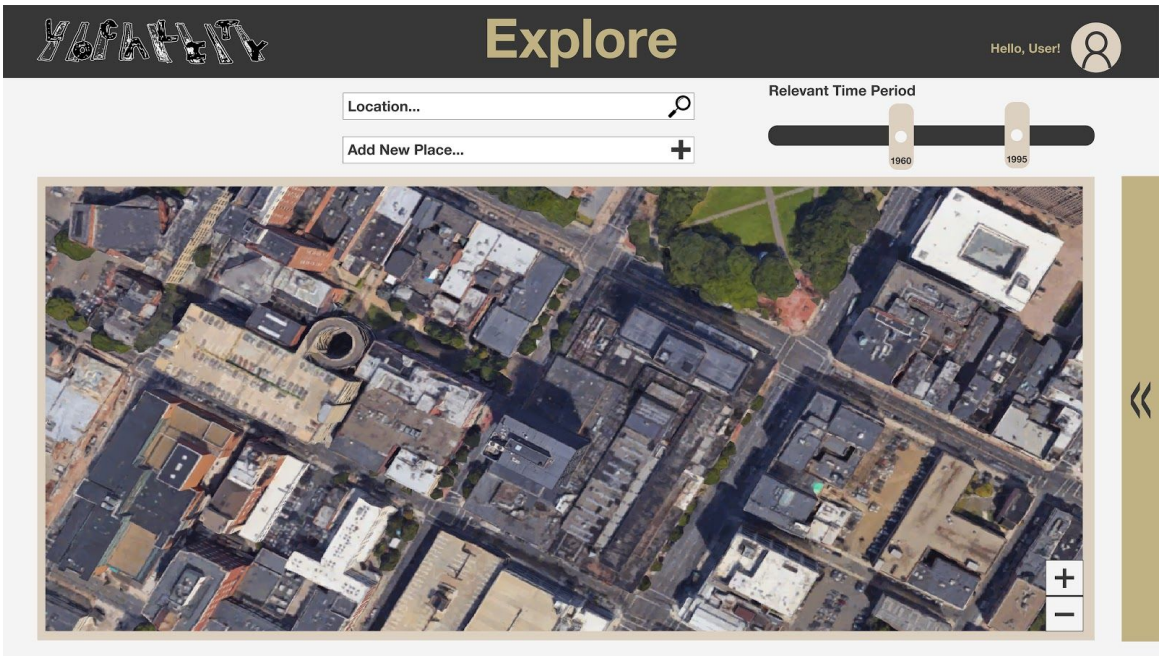
After you press the + button, you get this page where you can write your post and upload media.



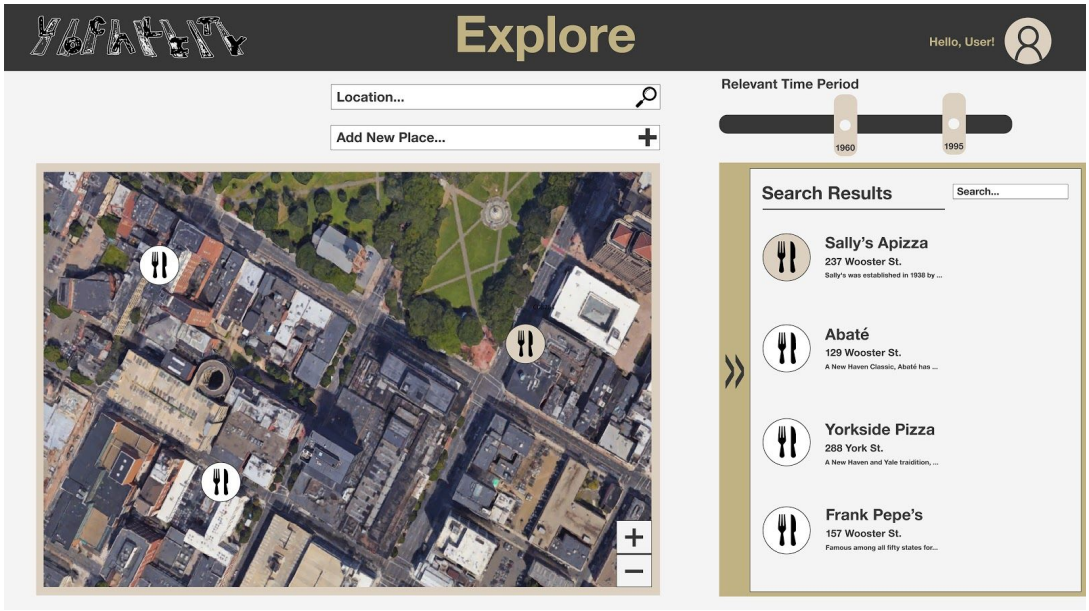
After posting, your post shows up in the list of posts.



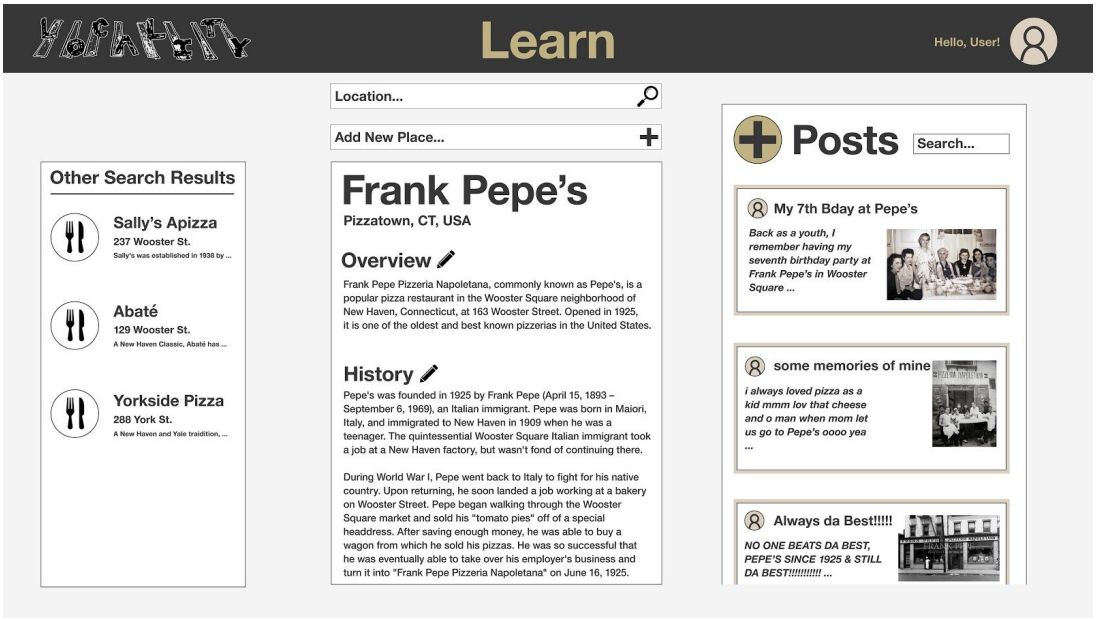
8. **Design Mockup**. Description of the higher fidelity mockup, how it supports the two tasks, and a discussion of any changes that were necessary to increase the fidelity of the design.



Our landing page is a large map. From here, a user can begin the **Search** task.
Changes: Different, more aesthetic colors, and some slight formatting changes

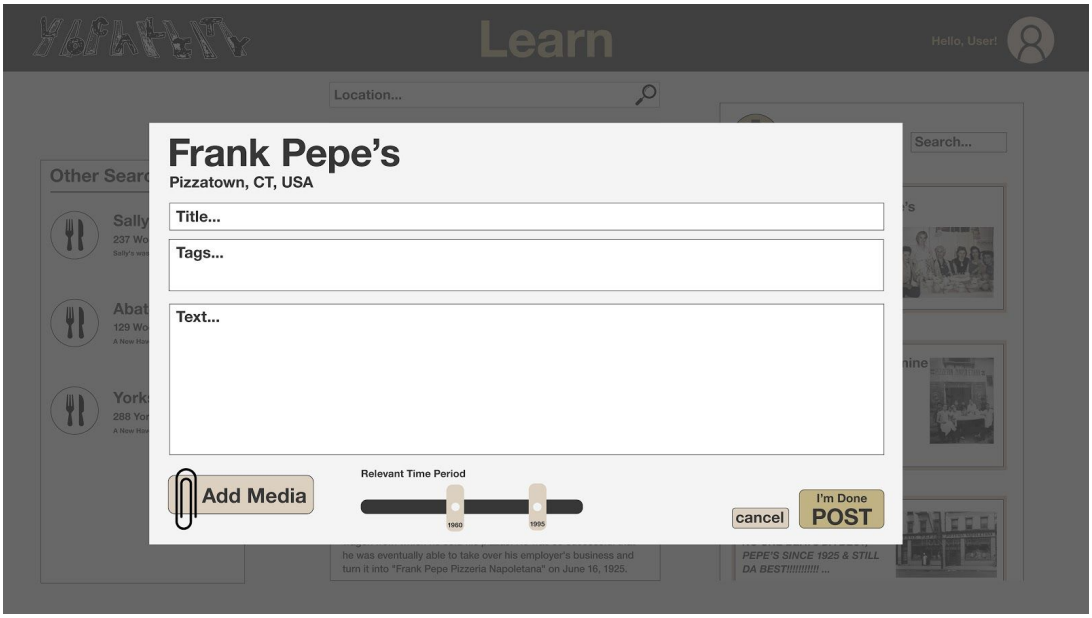


After typing something into the search bar, a list of results come up which can then be narrowed down with further searches within the results box.
Changes: More specific icons, change away from sorting and filtering results



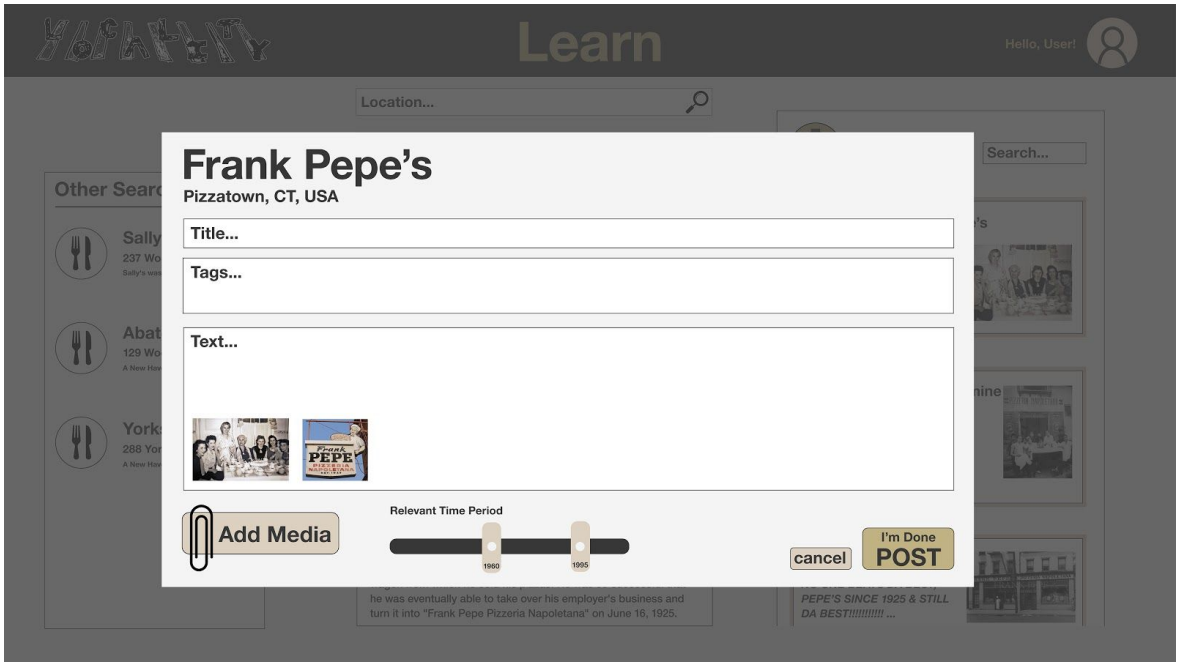
After selecting an option, a page opens for it that lists the overview, history, and posts for the page. This is the end of searching. From here, the **Sharing** task begins

Changes: You can now search within posts. The aesthetic is different

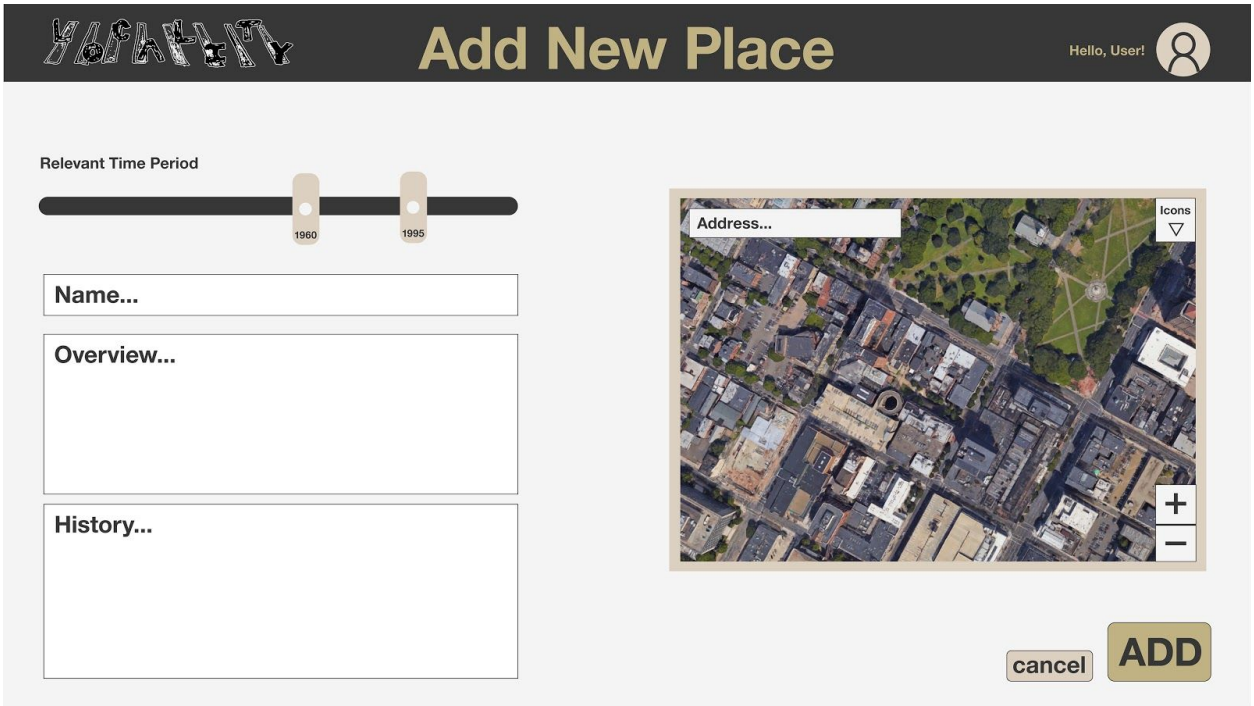


After clicking on the + in posts, a small form comes up where people can write the title, tags, and text of their post. They can also add media

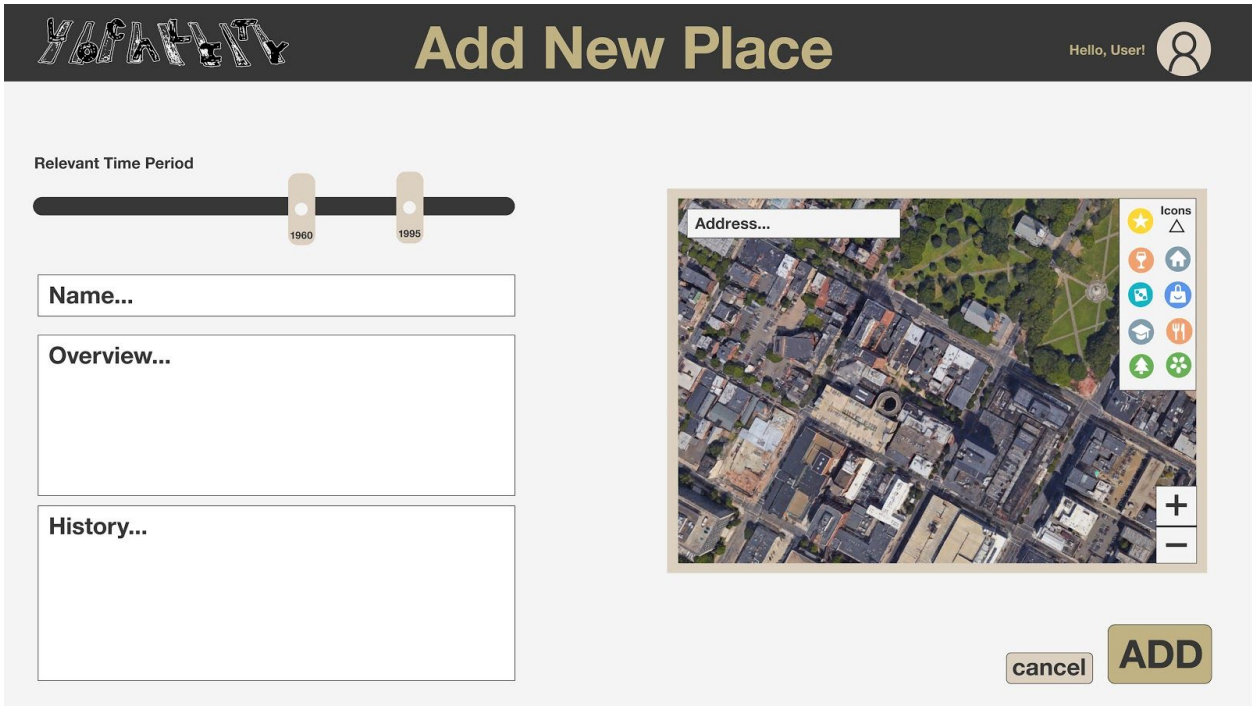
Changes: Instead of being a new page, this is located on top of the old page. The boxes are bigger so there is less white space



After clicking add media, the traditional file box opens (depending on the type of computer you have). From there, you can select an item. You can add as many as you like. Dragging it out of the box removes it.



When completing the task of **sharing**, if the user is not able to find the place that they were hoping to post about, they can choose to add a new point of interest using the Add New Place page.



The user can either type in an address and choose an icon from the drop down menu of options, or just drag an icon to the desired place on the map.

Changes: The icons are now a drop down menu, and the Overview and History text boxes are now separate.

The high-fidelity mockup is very similar to the low-fidelity mockup in its overall structure. We removed many colored elements for a sleeker design, but the overall functionality is the same: users are able to add new places of interest to a map, share memories and media about these places by creating posts, and are able to engage with the posts of others through a search functionality that relates to the map.

The biggest change between the two mockups is the ability to add new places, which came up during the creation of the low-fidelity prototype. We also needed to clarify the language used for searching, since it was unclear if users would type in the address or name of a place.

Smaller changes included the replacement of the search-results sorting and filtering options with a single search bar, a couple variations on the location and feel of the Add New Place function once we included it, and the inclusion of a standardized top bar with the logo on each page.

9. **Discussion**. Reflection of the project and discussion of the results.

The project has been challenging! There were a lot of good examples of similar systems (Facebook groups, Wikipedia, Google/Apple maps) that inspired our design and which have already shaped the expectations of our potential users. We had to lift and combine the best parts of each of these systems while prioritizing user interaction and the unique needs of our location-based media sharing goals. Keeping the mechanisms of our design clean, simple and clear has been a difficult task. One of the biggest lessons we learned is that less is almost always more. For example, where there were

two search bars, there is now one, and where there was a complicated mess of buttons to sort search results, there is now a single search option.

The process has also been a lesson in collaboration. This design stage has coincided with some of the busiest weeks of the semester for multiple of our team-members, and so budgeting time and labor has demanded careful planning and compromise. Just this fact alone had a marked effect on the final design. Because Jack was the most free over the past week, he completed a sizeable amount of the groundwork for our final prototype, working in the program that he knows best: Adobe Illustrator. This of course leaves artifacts in our design, as any program uniquely would, affecting our fonts, colors and available defaults for shapes and design-tools and techniques. It is also a program that the rest of us in the team don't know how to use quite as well, which has had compounded effects in the design process as it's continued, as we've relied largely on Jack's skills throughout.

The process also shaped the design by highlighting in no uncertain terms what assumptions we were making about the interface based on our experience and insider knowledge of it, assumptions which proved fallacious as soon as outside eyes were brought to bare. The relationship between the searching functions and map interface were especially confusing to our tested users.

Our tasks, however, have remained relatively unchanged. We are still primarily concerned with 1. allowing users to search their "locality" to access a community-built and maintained archive of personal memories, and 2. Allowing users to add to that local archive by sharing their own memories and media. Only our understanding of the precise mechanisms by which those tasks can be accomplished, which is to say our understanding of the sub-tasks underwriting both, has been forced to adapt in response to our research.

More iterations could certainly help polish the design's finer points, but over-all, we've already achieved satisfactory results in terms of usage and task-accomplishment, and we think that aesthetically our site prototype looks quite nice.

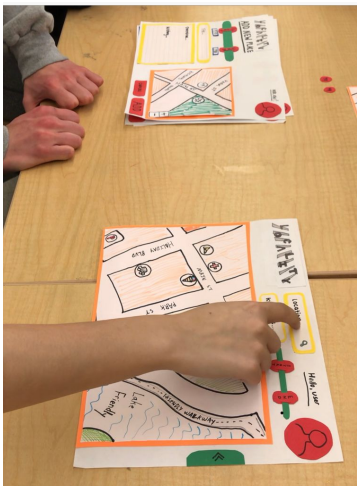
10. **Appendix**. Supplementary material with additional details on the design process, including instructions or task descriptions that were used in the tests and critical incidents.

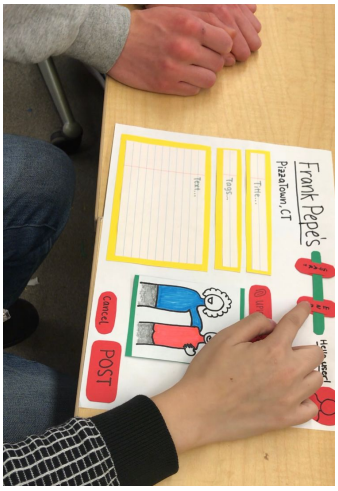
Critical Incidents during Testing:

- First user test didn't understand the purpose of the website. They just wanted to buy pizza, so we learned to better explain the product
- The final user didn't understand what "post" or "add" meant as he had less experience with computers

When we encountered critical incidents, we made careful note of the event and then "paused" the test to explain the intended usage to the user and ask them to resume as though they had known what to do.

Screenshots:





These are two screenshots from a recording of the first round of usability testing. The user explains how they would search (left) and how they would set the time period (right).

We did not have a formal script for testing, but it generally went like this:

1. Explain the purpose of the website: the overall, general goal of the design and why a person might choose to use it
    a. Make sure they fully understand the website: look for confirmation through a rewording of the goal or a reconceptualization of the broad design
2. Give an example scenario that the user might be in
3. Ask them to search for something
4. Ask questions at each step, don't use leading commands
5. Ask them to post something
6. Repeat Step 4
7. Ask them for their general opinion of the interface: if anything seemed unclear or confusing

Searching Task Description Example:

Let's say you are interested in how a pizza place you went to as a child in the 70s looked back then. How would you search for that?

Sharing Task Description Example:

So you're on a page full of information and posts about a place from your childhood. You want to add your own post including a picture you once took there. How would you add that post?

Heuristic Evaluation notes: