

# ***MEMA***

*Memory Management for Museum Exhibitions*

*Independent Study Report 2970 Fall 2011*

*Author: Xiaoning Bai*

*Yuanyuan Ye*

*Supervisors: Dr. Peter Brusilovsky, Yiling Lin*

## ***Part I. Introduction to MEMA***

MEMA is short for Memory Management. The essential is to allow user to publish their flash ideas of daily lives by some popular social media, such as twitter, Facebook, which are convenience to share users' immediate opinion. After that, user could retrieve those pieces of ideas from the social media website and edit, reorganize, save and publish and share the accomplishment as a report like article or gallery, or in any other way they would like to.

For the current version, MEMA focus on the Museum Exhibition direction, which was triggered by the Teenie Harris Pittsburgh Old Photograph Exhibition (<http://teenie.cmoa.org/>) from Carnegie Museum of Art (<http://web.cmoa.org/>).

Imagine that a visitor of the photo gallery visitor who would love to share something with the host, aka, the museum, or other visitors, what should that be? In the convention way, we probably will rely on the pencil and notebook. For the most advanced way, user might be login the website of museum and publish something there. This gap between the individual user and others, and the host, is caused by the traditional way of exhibition, which is more concern the individual visiting experience. Especially, for a photograph exhibition, both the number and the size of photos are impossible for both user and host to share too much information in the gallery.

With MEMA, we organize an online gallery for the exhibition, which allow user to visit during the exhibition by their hand-hold device, and view the relative information and the exhibited items on both the gallery wall and their devices. Meanwhile, visitor could add comment, tags, to the items digitally, even more, could share their opinion to some particular items on the social media. And retrieve them from the social websites and the database of the exhibition after the exhibition.

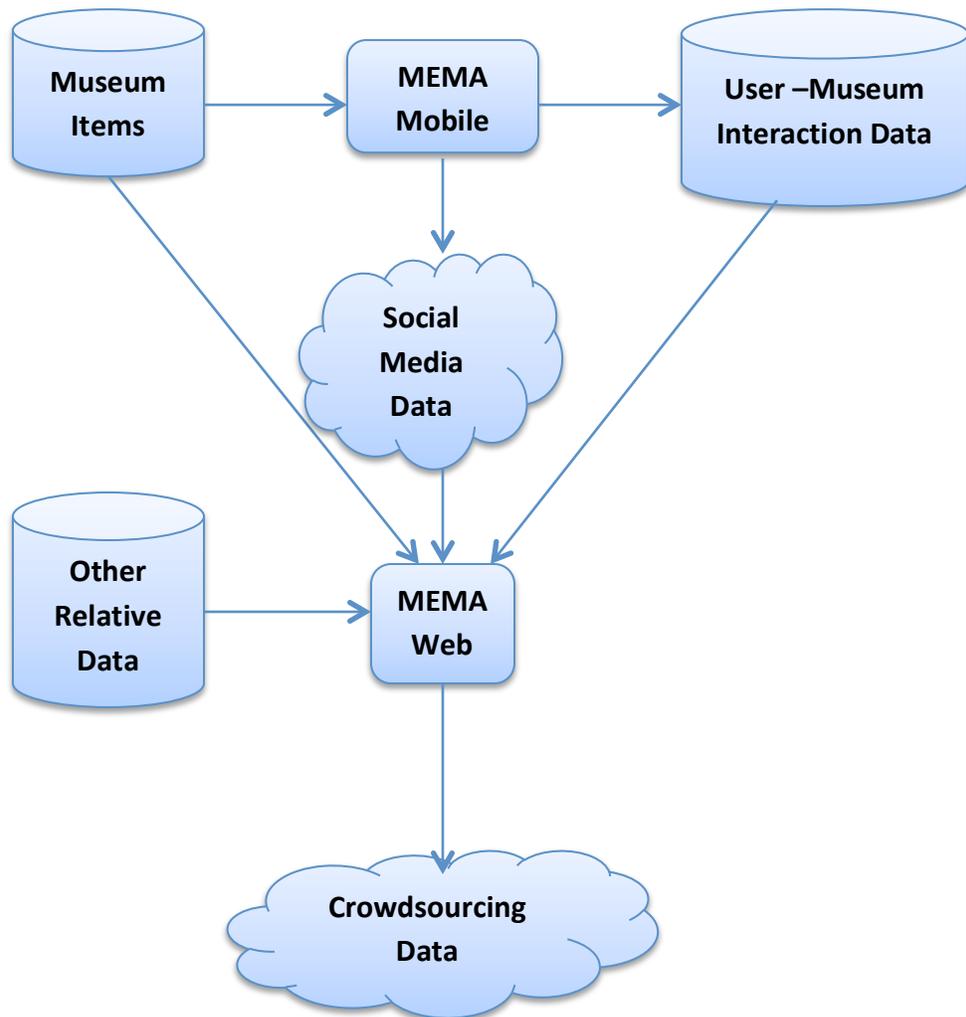
This would benefit both the visitor and the host.

For visitor, they could record their immediate idea or inspirations once they were created. And the followed retrieving and editing progress allow them to refine the drafts they left on the items prior.

For the host, based on currently design, the museum, they could get many crowdsourcing from the users' tags and comments, which make the classification and metadata of items more activity.

## *Part II. Design of MEMA*

### **Data Flow and Data Processing of MEMA**



## **1. Museum Data:**

Representing the data source provided by the Museum or other organizations whoever would love to use the MEMA system. In current version of MEMA, this part of data is Teenie Harris Exhibition Photograph Items data table, including the url, descriptions and some other basic information of the items.

## **2. User-Museum Interaction Data:**

Including the comments tags and likes information from visitor of the exhibition, which were provided during their visiting. This part of data could be considered as one of the major sources of the crowdsourcing data.

## **3. Social Media Data:**

The ideas or opinions shared via Facebook Like, Tweet or other kind of social media platforms. This is the other major source of the crowdsourcing data. All published message would include some external links direct to the MEMA website which includes the involved item's information.

## **4. Other Relative Data:**

It means relative data held by user or from Internet or any other sources. This data source makes the crowdsourcing data more flexible and more activity. Take the Teenie Harris Photo Exhibition as an example, the relative data could be some other photos owned by user but related to items in gallery.

## **5. Crowdsourcing Data:**

This part of data could be considered as the researching destination of MEMA. All what we have done here is to make this part of data more valuable and analyzable. This kind of data could be a blog for a individual user, a report for an education purpose user, an article for a professional user, or some statistic graphic or report for the host.

## **6. MEMA Mobile:**

Providing a mobile website for visitor who comes with a hand-held device. Representing exactly same content with the exhibition itself, but with some feature to allow user to interacted with other visitor or the host.

## **7. MEMA Web:**

A website with social network functionalities, which provides user a possibility to retrieve their specified message from other major social network websites. And allow user to edit, add, modify their words locally for saving or publishing.

## ***Part III. Technical Detail of MEMA***

### **Development Environment and techniques**

1. PHP 5.3
2. MySQL 5.5
3. Apache Server
4. jQuery and AJAX
5. NetBeans 7.1 for PHP
6. OpenID Registration and Login API

### **Deploy environment**

For localhost user: WAMP Server 2.2 (<http://www.wampserver.com/en/>)

For remote server user: see the development Environment please.

### **Technique Detail**

MEMA mobile widely used AJAX to transport data between front-end user interface and back-end PHP services, which made the system more consistent in the user experience view.

MEMA web uses some open source component to achieve the tag management, article-style editing, and user group functionalities.

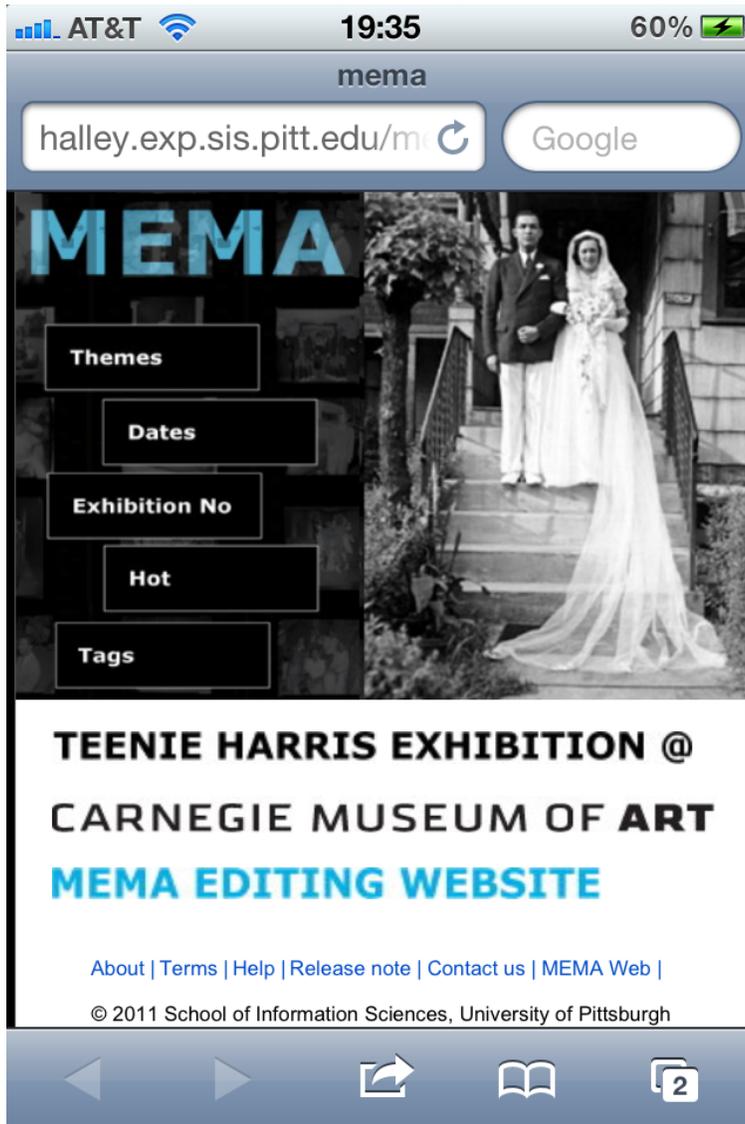
For the Tweet retrieving, we add some # topics in the default text contents of the tweet and retrieve them according the topics.

For Facebook like button, MEMA use the newest metadata API to specify the url, image, and other basic information of the Facebook link in the new feeds.

## *Part IV. MEMA Scenarios, Screenshots and system detail*

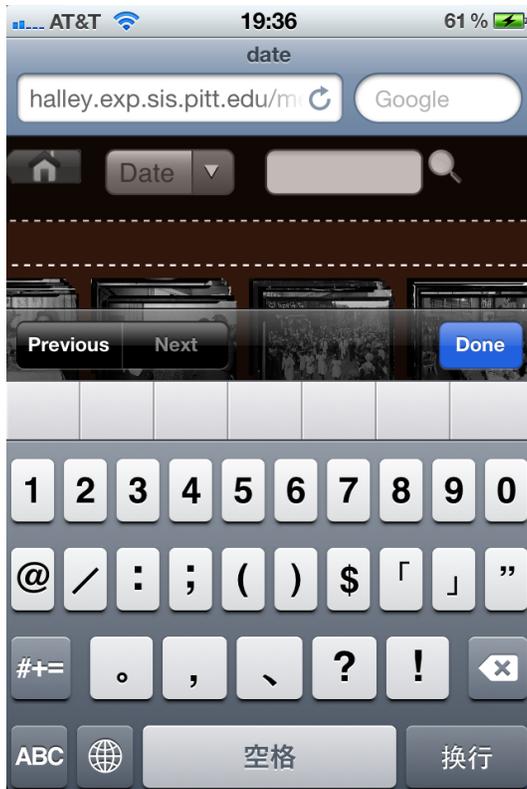
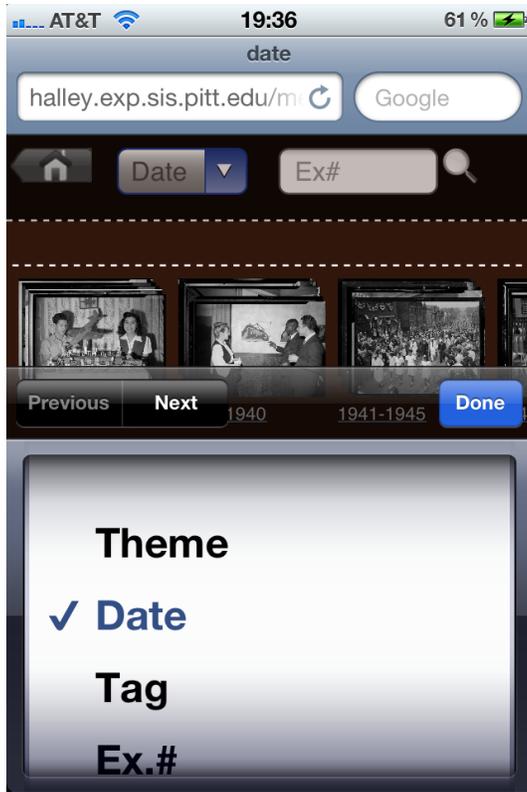
### 1. MEMA Mobile

Home Page: this homepage could adaptively fix the users' screen size. There are five categories on the index page. Theme stands for different themes classifying the photos. Data is in different data range. Exhibition No separated the 900 photos in groups whose scale is 50 items. Hot contains the items that most interactions happened. Tags classified for frequency and alpha-beticle tag list.



Here is the date category view. There is a button on the tool bar to return to main page. And a dropdown list for category choosing was available. And one searching by Exhibition Number functionality was provide here.





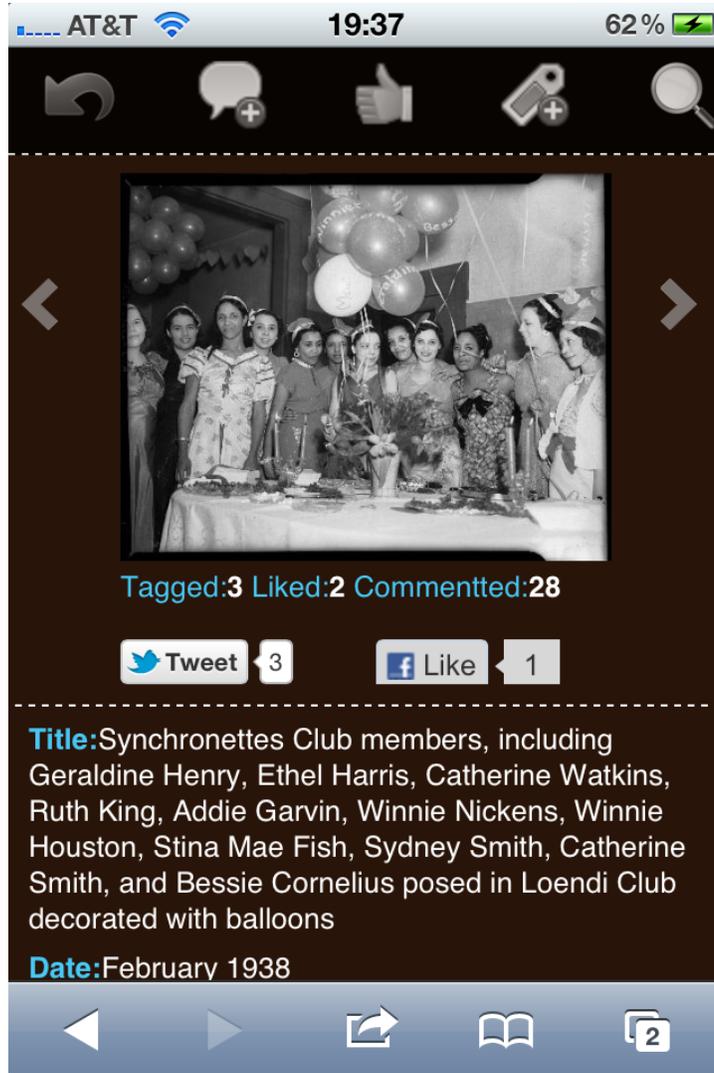
Here is the tag category, MEMA provides a alpha-beta list on top of the tags list, and all the lists are organized by scale.



Gallery view of every category.



These are the description views (before login), including all the metadata information of the item and interaction summary information. The five functionalities on the top bar are back, comment, like, tag, and search. But before login, user could not accomplish the interaction behavior.



AT&T 19:37 62%

Tagged:3 Liked:2 Commented:2

Tweet 3 Like 1

**Title:**Synchronettes Club members, including Geraldine Henry, Ethel Harris, Catherine Watkins, Ruth King, Addie Garvin, Winnie Nickens, Winnie Houston, Stina Mae Fish, Sydney Smith, Catherine Smith, and Bessie Cornelius posed in Loendi Club decorated with balloons

**Date:**February 1938

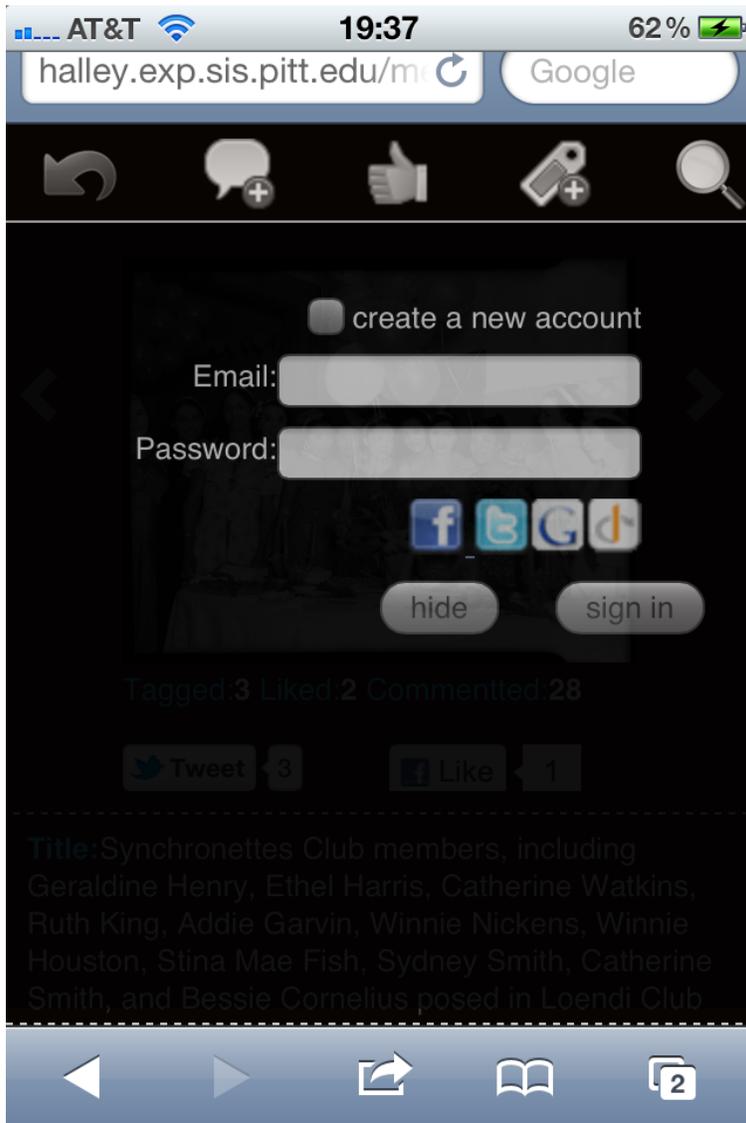
**Caption:**Cutline of image published in Flash Newspicture Magazine, February 28, 1938, pg. unknown, reads: "The Synchronettes (lower right) composed of non-natives of Pittsburgh is one of the town`s most fashionable clubs. They are Geraldine Henry, Ethel Harris, Catherine Watkins, Ruth King, Addie Garvin, Winnie Nickens, Winnie Houston, Stina Mae Fish, Sydney Smith, Catherine Smith, and Bessie Cornelius. (Pgh. photos by Charles `Teenie` Harris)."

**Exhibition NO.:**013

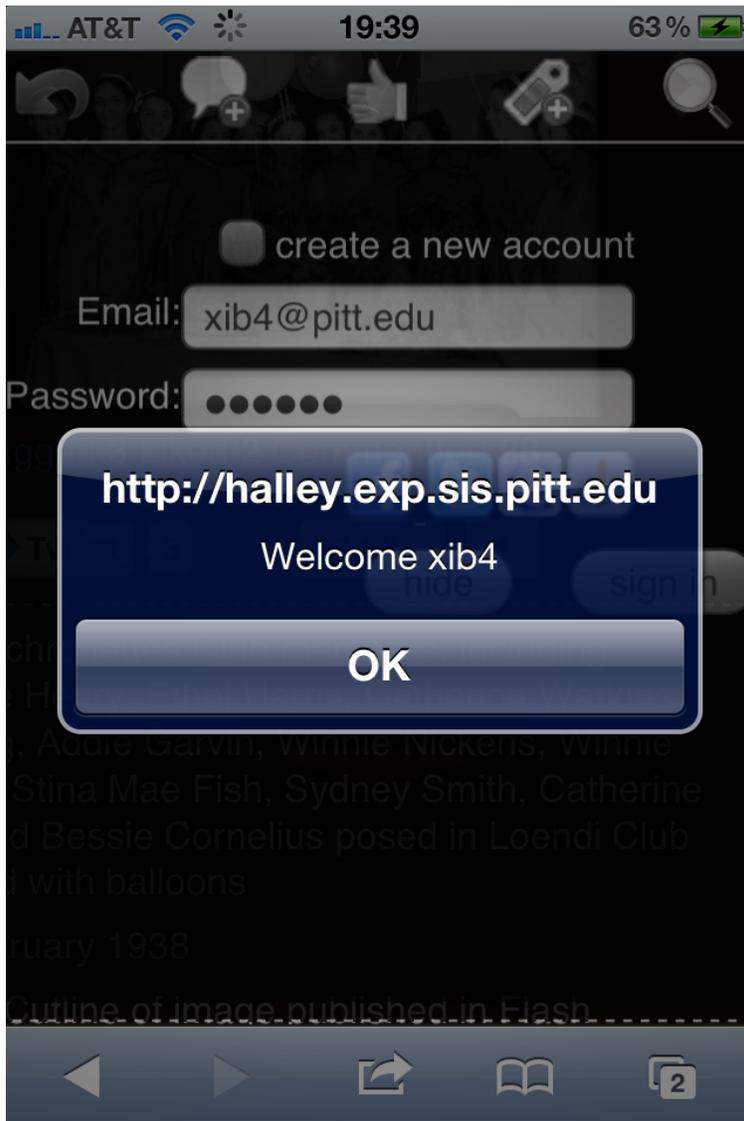
**Theme:**At Home

Navigation icons: back, forward, share, bookmark, and a tab indicator with the number 2.

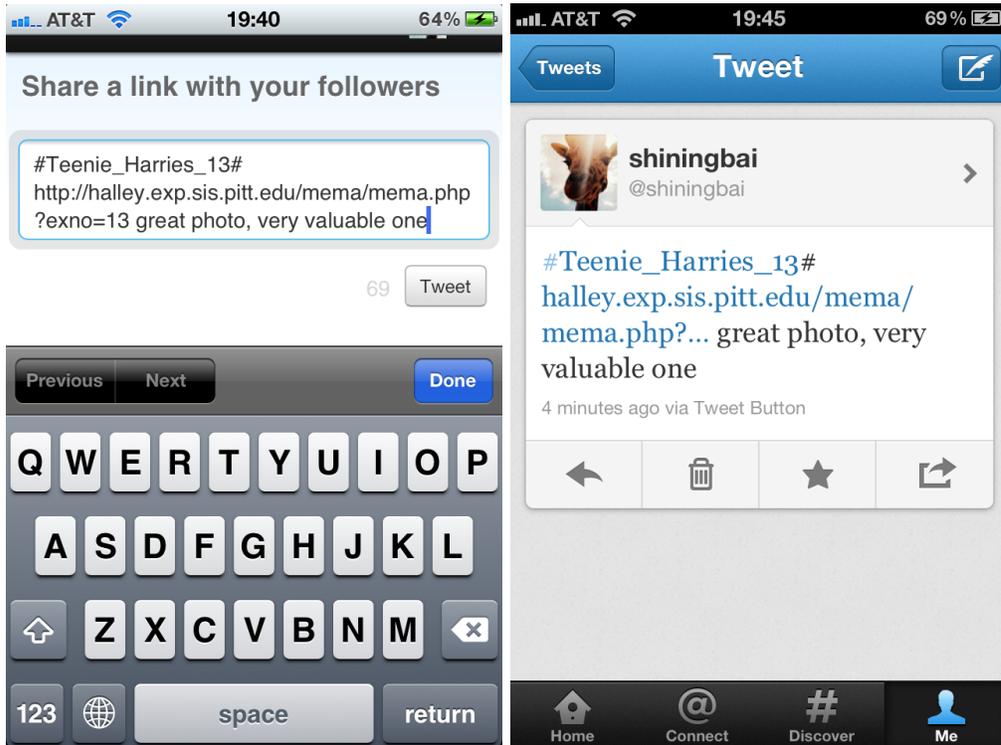
Sign in: user could sign in, sign up, and sign in with other social media account, which mostly simplify the registration and login process.



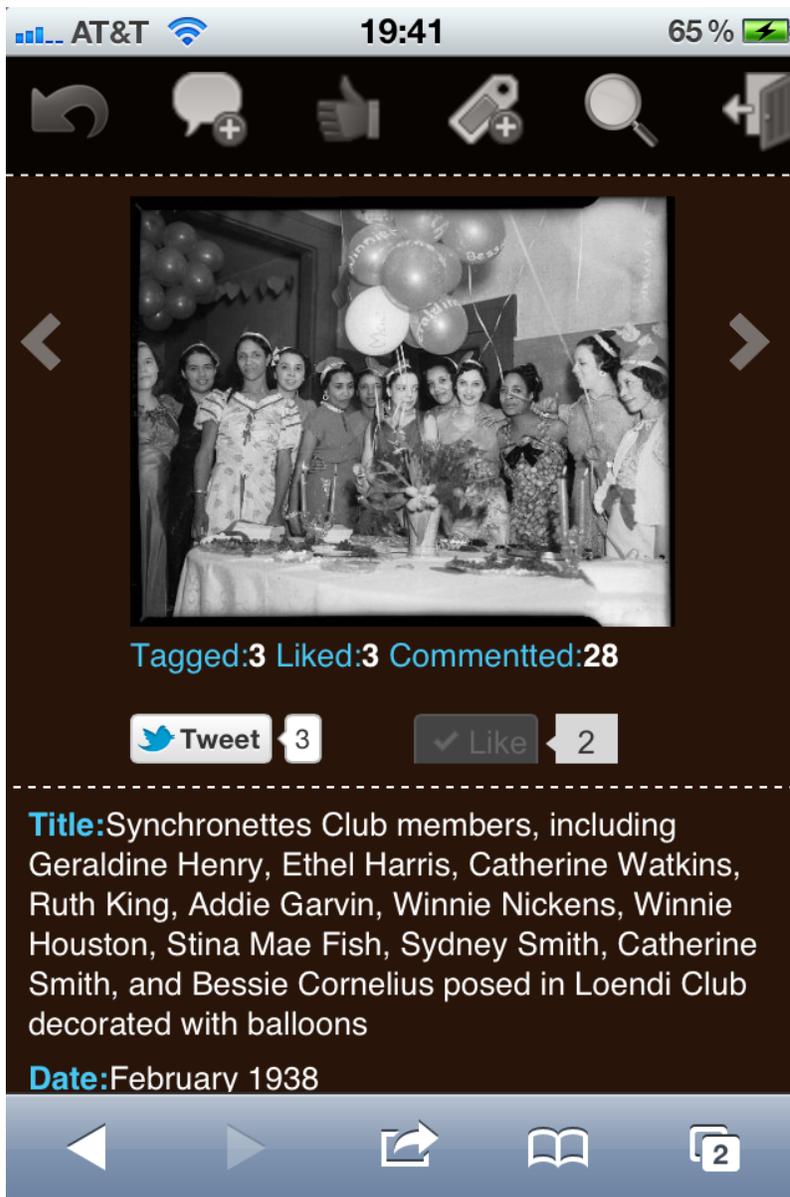
Sign in successfully and the feedback message.



tweet content: implemented with twitter API. Here is the default and edited tweet content and the result showed in Twitter.



**Facebook Like:** a Facebook Like button was added to publish information on facebook.



After liking, the like icon changed color to remind user that they already liked this item. Here is the after like view.

AT&T 19:39 64%

Share Comment Like Add Search



Tagged:3 Liked:3 Commented:28

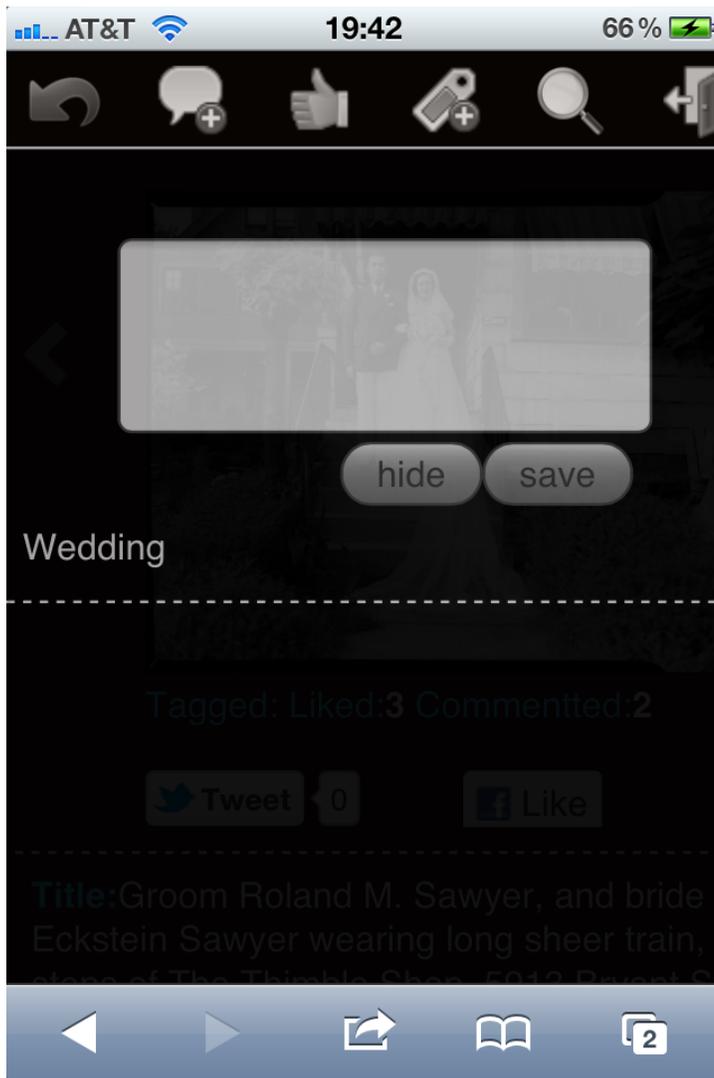
Tweet 3 Like 1

**Title:**Synchronettes Club members, including Geraldine Henry, Ethel Harris, Catherine Watkins, Ruth King, Addie Garvin, Winnie Nickens, Winnie Houston, Stina Mae Fish, Sydney Smith, Catherine Smith, and Bessie Cornelius posed in Loendi Club decorated with balloons

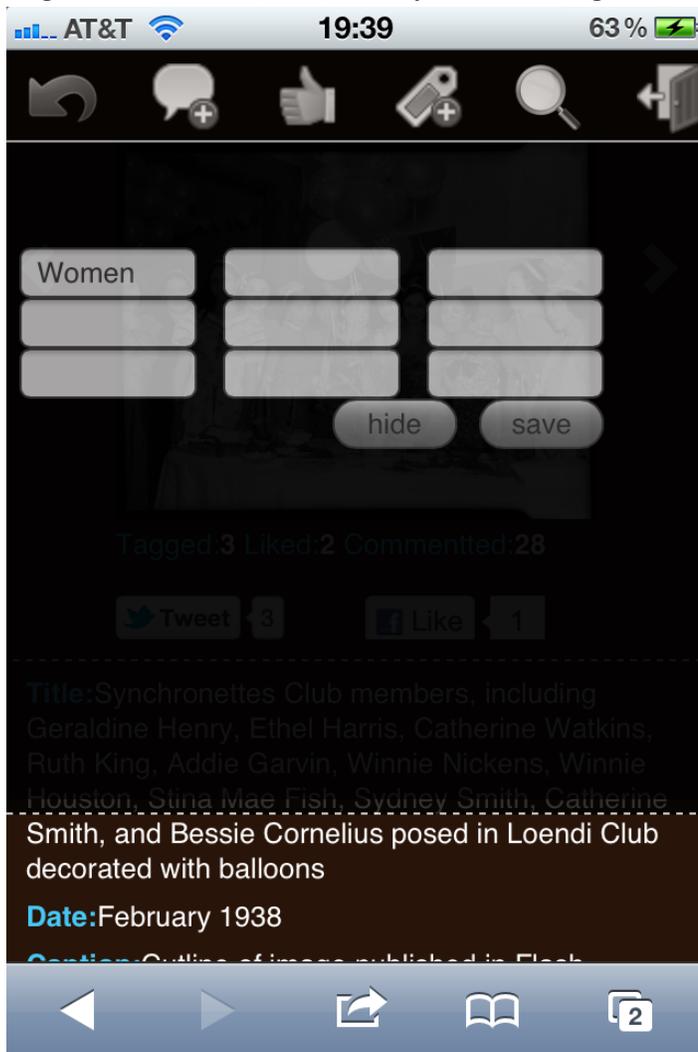
**Date:**February 1938

Navigation: Previous, Next, Share, Bookmarks, 2

Comments: user could see their previous comments at the bottom of the comment text area.



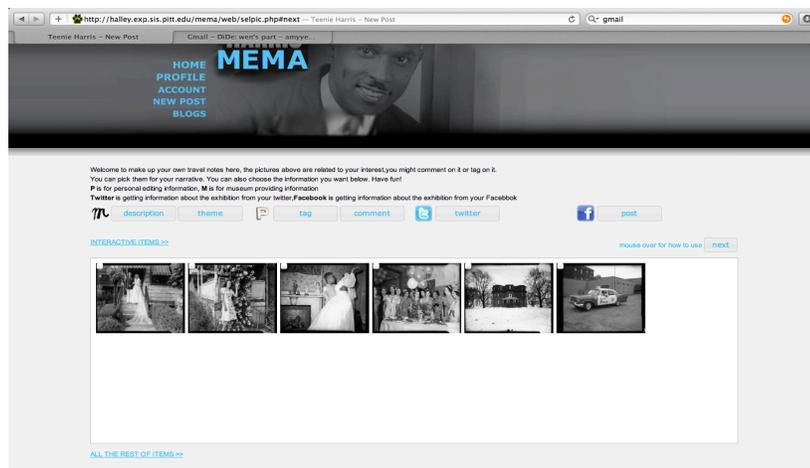
Tag: user could add, edit, modify their own tags about the item.



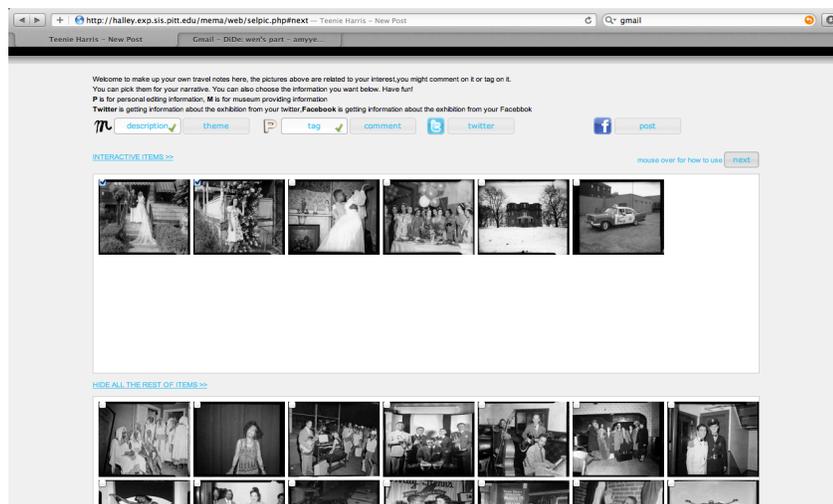
## 2. MEMA Web

The website part of MEMA allows user to capture and manage four types of feedback data they created and to elaborate upon their feedback to compose their personal narratives. The data components included 1) the information that created by museum, 2) the feedback from the mobile function “like”, “comment”, “tag”, that created by users themselves, 3) the feedback from posted on Twitter and Facebook that are created by users themselves as well, 4) the images that the users interacted with during their visits.

When they click on “NEW POST” button on the navigating index, they are allowed to begin to edit their own story or report just as figure shows below.



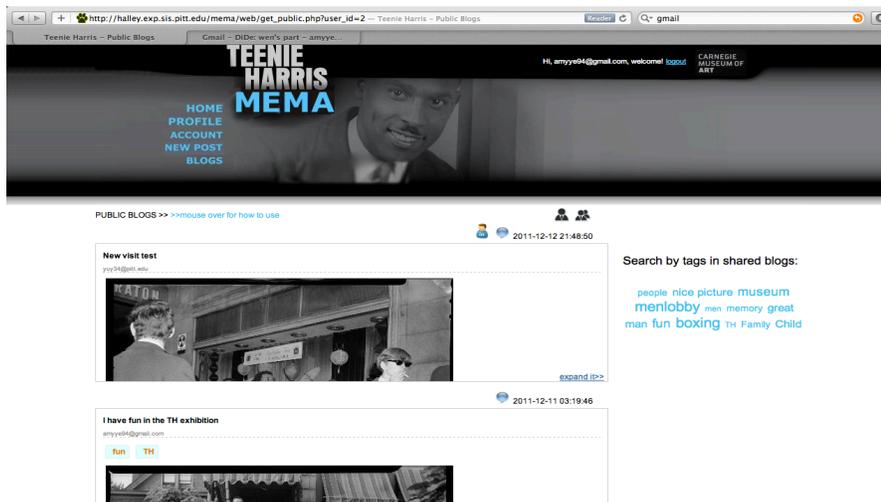
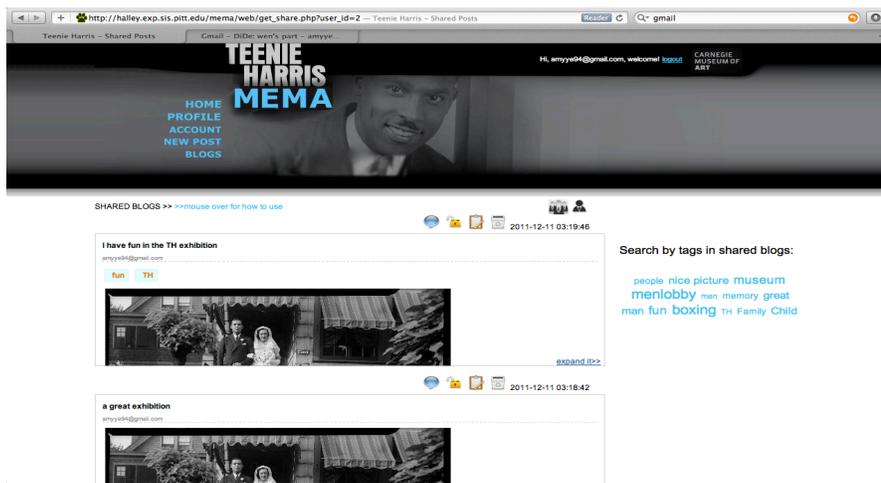
If the user has experience in using mobile function, they can choose the images they have interacted. If not, they still can choose ALL THE REST OF ITEMS to show all images and pick whichever they like to edit, just as figure shows below.



An edited panel is provided in the system, after users choose the data components and images and click on NEXT button, all the stuffs they pick will be put into the edited panel and allow users to edit. Besides, different data components, interacted images, and all images are displayed on the sidebar menu adjacent to edit panel, which would be more convenient for user to make changes. Besides, user can invite their friends to edit blogs together. User can choose to save the narrative as private post or as shared publically so that others can access their material. The edit panel is showed as bellow.



There are three types of blogs here: private blogs, shared blogs, and public blogs. User can editing their own blogs' (including private one or public one) privacy, content, or delete them. Public blog will show all the shared blogs by all users. In this part, user can only view blogs or make a comment and make a request to author of editing together. A tag cloud composed by tags of shared blogs is on right side adjacent to blog list. With it users can locate target blogs easily. The picture below shows the view of private blogs, shared blogs and public blogs in order.

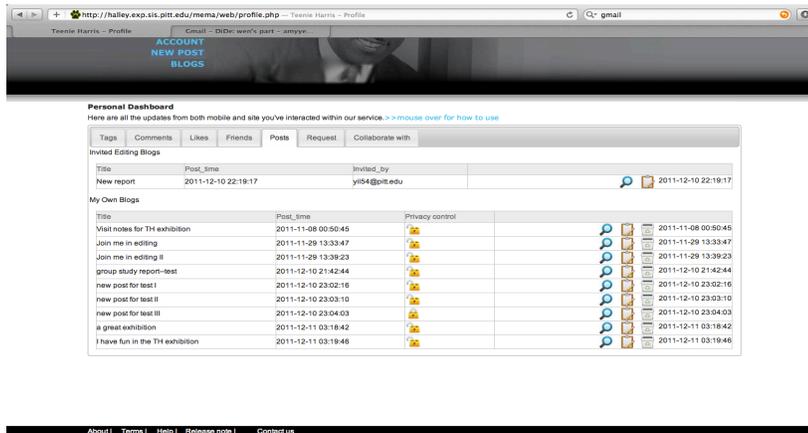


In the PROFILE function, a dashboard is designed for users to manage all editing content included: Tags, Comments, Likes, Friends, Request to edit, and Collaborated with.

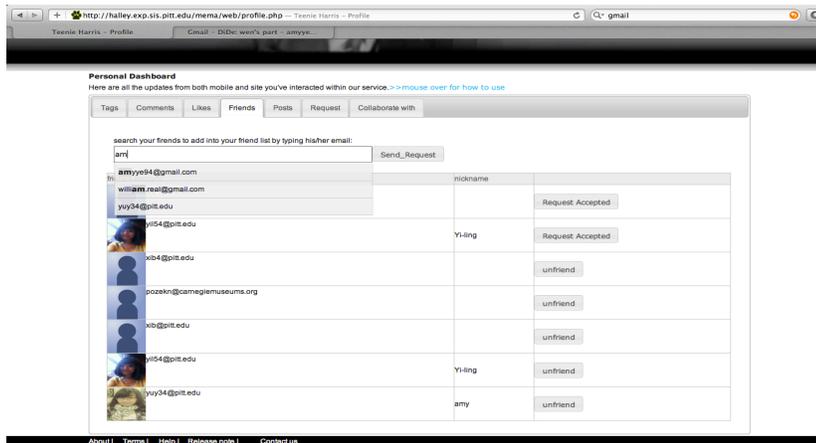
For the Tags, Comments, Likes of an image, user can delete them by closing the certain content or add them by inputting new content. Tags management is just as figure show below, and the Comments and Likes is in the same style.



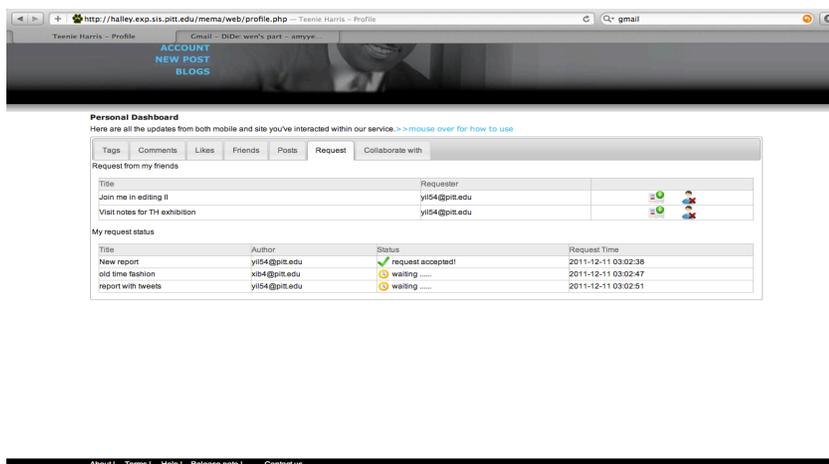
Post function is put all the editing components of a post on one table, which makes the content more clear and easy for users to manage, just as the figure showing below:



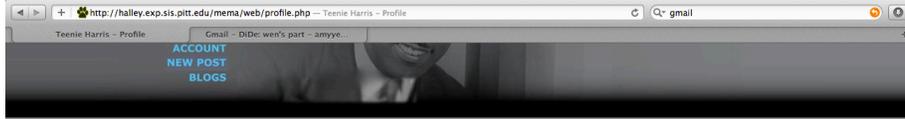
Friend function is show as below.



Request to edit is show the status of request to edit. On the public blogs there is a function allows user to sent an request to others to edit certain blogs together, the processing of request from others and the status of users own request will show here. Figure shows as below:



In collaborated with, user can edit collaborated users by deleting or adding.



**Personal Dashboard**

Here are all the updates from both mobile and site you've interacted within our service. >> [mouse over for how to use](#)

Tags	Comments	Likes	Friends	Posts	Request	Collaborate with
Collaborate with My Own Blogs						
Title		Partner				
Visit notes for TH exhibition		<a href="#">xib4@pitt.edu x</a>	<a href="#">ceez11@pitt.edu x</a>	<a href="#">yil54@pitt.edu x</a>		
Join me in editing		<a href="#">yil54@pitt.edu x</a>				
group study report-test		<a href="#">yil54@pitt.edu x</a>				
new post for test I		<a href="#">yil54@pitt.edu x</a>				
new post for test II		<a href="#">yil54@pitt.edu x</a>				