

---

# **CMPT 275 – Design Document**

## **iRemember**

---

Instructor: Dr. Herbert Tsang

TA: Jordon Phillips

Group Number: 11

Group Name: Double One

Due: October 12, 2012

### **Group Members:**

Nicholas Pan

Charles Shin

Matt Numsen

Jake Nagazine

Steven Tjendana

## Table of Contents

<b>Revision History .....</b>	<b>2</b>
<b>Abstract.....</b>	<b>2</b>
<b>Guidelines .....</b>	<b>3</b>
Technical Guidelines .....	3
Ethical Guidelines .....	4
Legal Guidelines .....	4
<b>System Diagrams.....</b>	<b>5</b>
Use Case Diagram.....	5
Sequence Diagram .....	6
Database Diagram.....	7
Class Diagram.....	8
<b>Data Requirements .....</b>	<b>8</b>
User Input.....	8
Output .....	8
Online Use .....	9
<b>Feature Priority List .....</b>	<b>9</b>
Version 1 .....	9
Version 2 .....	9
Version 3 .....	9
<b>References .....</b>	<b>10</b>

## Table of Revisions

Revision	Status	Revision Date	Revised by
1.0	Created design plan document.	October 7, 2012	Matt Numsen Jake Nagazine Nicholas Pan Charles Shin Steven Tjendana
2.0	Added all sections, including diagrams, and references.	October 9, 2012	Nicholas Pan
3.0	Added data requirements and feature priority list.	October 10, 2012	Matt Numsen
4.0	Revised document and addressed grammatical issues.	October 12, 2012	Matt Numsen Jake Nagazine Nicholas Pan Charles Shin Steven Tjendana

*Figure 1 shows the Table of Revisions, which contains a revision number, status (description), date, and author for each revision made to the document.*

## Abstract

This design document will address the outlining architecture of our memory-aid application. The scope for this document is intended to those who are technically versed in software development by providing greater detail. The following document will provide group guidelines, system designs, data requirements from the user, and a feature priority list.

# Guidelines

The guidelines section will discuss the agreed standards to ensure complete cohesion within the group.

## Technical Guidelines

Technologies used in the construction of our project will strictly abide by generally agreed standards within the group. We reviewed the technologies most widely used in the industry, in hopes to foster individual growth and group efficiency in developing our application.

### Development

Our software is targeted to the latest Apple iPhone product which requires native applications to be developed for iOS using the Cocoa Touch framework in XCode 4.4. In addition, we will use built in testing tools, interface builder, and the iPhone simulator.

In terms of team collaboration we are using a hybrid of Google Drive Documents for document sharing, review and publishing. In addition, we are using another cloud-based service, GitHub (using Git), as our source control system. We intend to use a hybrid of these technologies to provide code analytics, peer-review, and team cohesion.

The following is a more detailed list of technologies we have and will use for the creation of our project:

Technology Name	Description	Reason
XCode 4.4 (using Cocoa Touch)	Integrated Development Environment that provides a suite of tools developed by Apple, in addition to the UI framework.	Required for developing iOS applications.
Google Drive	Cloud-based collaboration service that provides a suite of productivity tools.	Collaboration of work among team members.
GitHub (using Git)	Web-based hosting service for housing a Git revision control system.	Allows for a singular place for code, primarily used for multi-developer project, code-review and work consolidation.
Microsoft Word 2010	Word processor in the Microsoft Office suite.	Used for creation of the team documents for submission.
Microsoft Project 2010	Project management software that is designed to assist project managers.	Used for creation of the team Gantt Chart.
Microsoft Visio 2007	Part of the Office-suite of products. 2D-object drawing application, primarily for creating diagrams.	Tool used for creating use case diagrams, class diagrams, sequence diagrams and database diagrams.
Apple OSX	Main operating system running behind	Required for developing iOS

Mountain Lion	Apple's computers.	applications.
Apache HTTP Server	Server software that provides web content over HTTP to the World Wide Web.	Backend hosting software for project site.

*Figure 3 shows a detailed list of technologies used by the group, including descriptions and reasoning.*

## Ethical Guidelines

The following is ethical standards that our written software and team will abide by:

- No mature or offensive material shall be used or included in the project, from software to documentation.
- No usage of illegally obtained software in the development of our project.
- Each software engineer accepts full responsibility of the work produced.
- Disclose all software-related dangers.
- Produce software that respects diversity.
- Protect and ensure the privacy of the users, as in, no disclosure of private information without consent by the user.
- Use data provided by the users of the program, legitimately.
- Be fair and truthful in all matters.

The ethical guidelines have been produced by the entire team, referencing the "Software Engineering Code of Ethics, Version 3.0" by the IEEE-CS/ACM Joint Task Force on Software Engineering Ethics and Professional Practices, written by Gotterbam, Miller, Rogenon [3] and from "The Social Responsibilities of Computer People" by Berkeley [2].

## Legal Guidelines

The following is legal standards that our written software and team will abide by:

- All code developed for the iRemember project is developed by the aforementioned team members except in cases of external code (library and helper method) usages; in cases of referencing external code, the respective authors will be credited.
- All code developed for this project is licensed under the GNU General Public License, version 3 [1].
- Finalized software will not cause any physical harm to the user.
- All technologies used in the project will be credited and referenced.

## System Diagrams

The system diagrams section will cover the all the major components of the system from interactions with the user, scenarios with inter-system events, the structure of the application, to highlighting the system storage details.

### Use Case Diagram

The following diagram is our application main use case with various actions and return sequences:

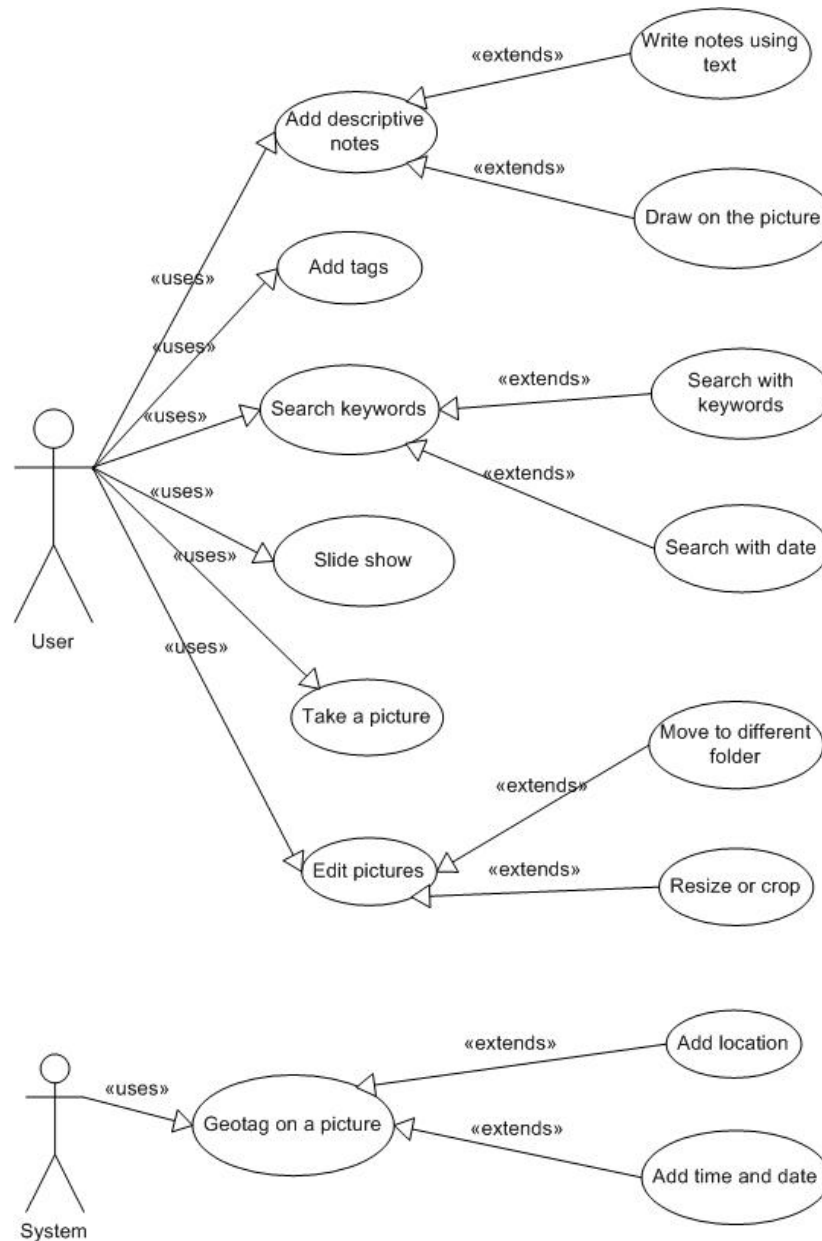


Figure 4.a depicts the following use case with two actors interacting with the system.

## Sequence Diagram

The following diagram is our application sequence diagram that shows the detail interactions within the components of the system:

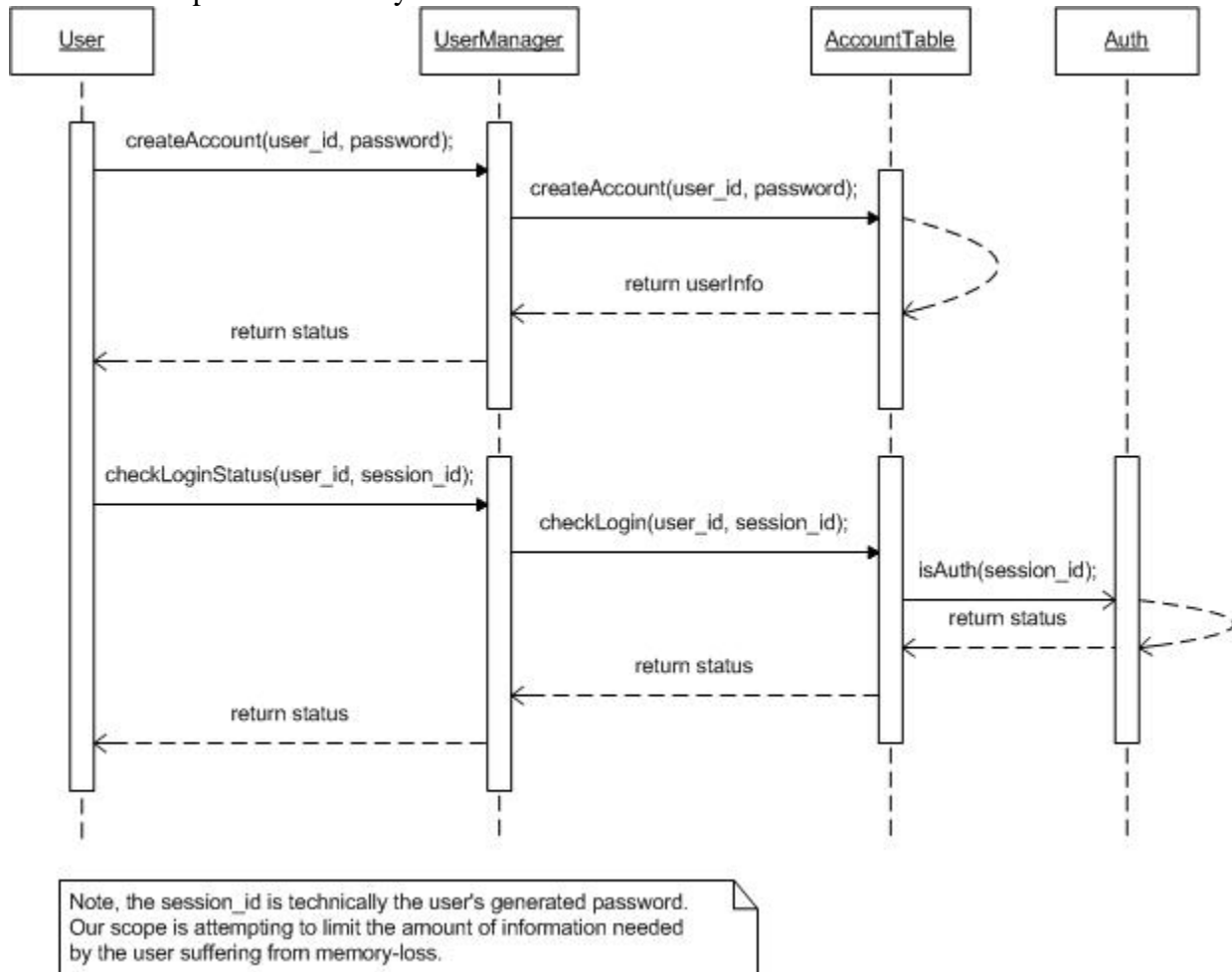


Figure 4.b depicts the interactions between actors and the objects in our system.

## Class Diagram

The following diagram is our class diagram of our system that shows the blueprint from a developer's perspective:

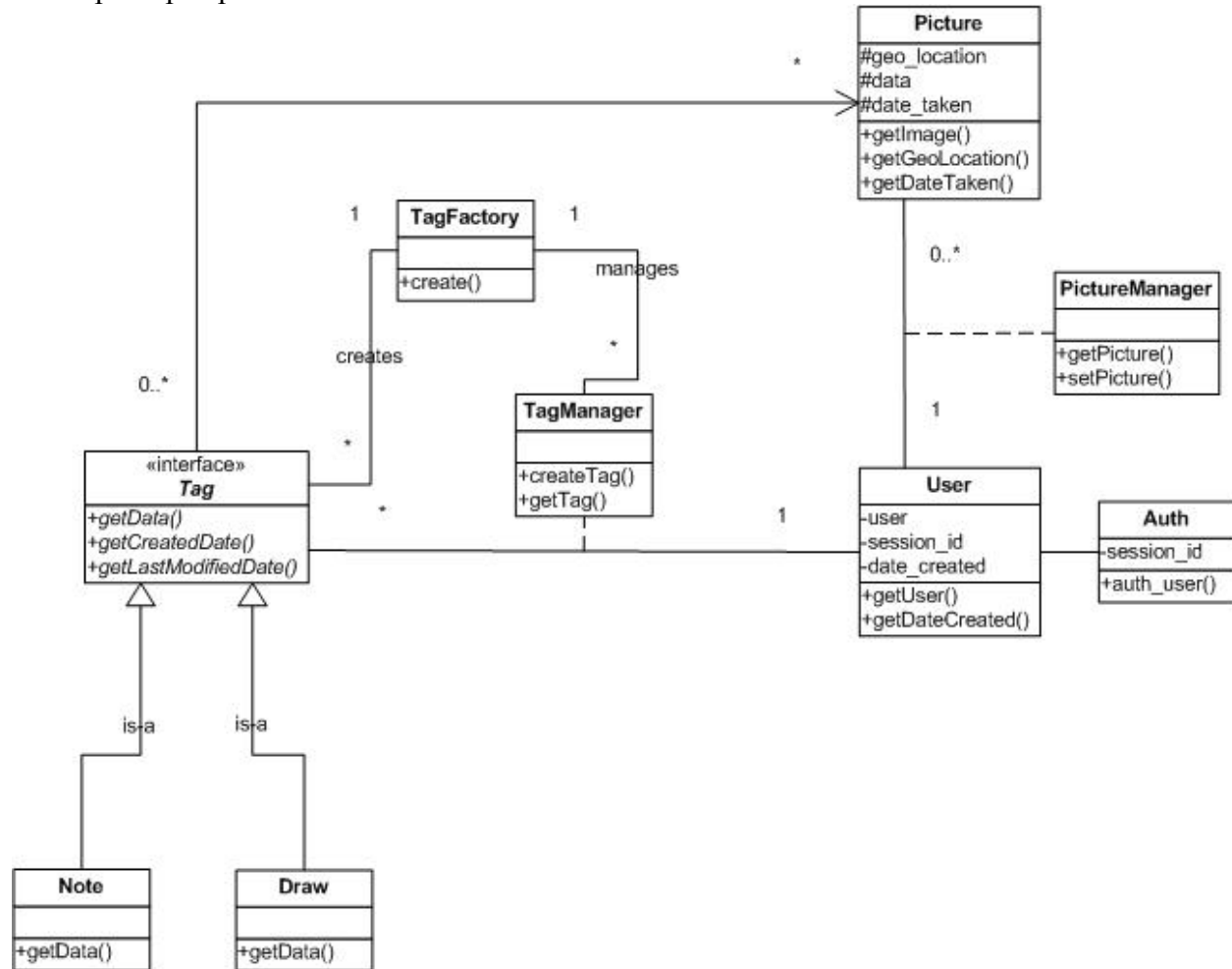


Figure 4.c depicts the structural model to display the organization of the system in terms of components and the relationships.



## Database Diagram

The following diagram is the database diagram that shows the table structure of our database schema:

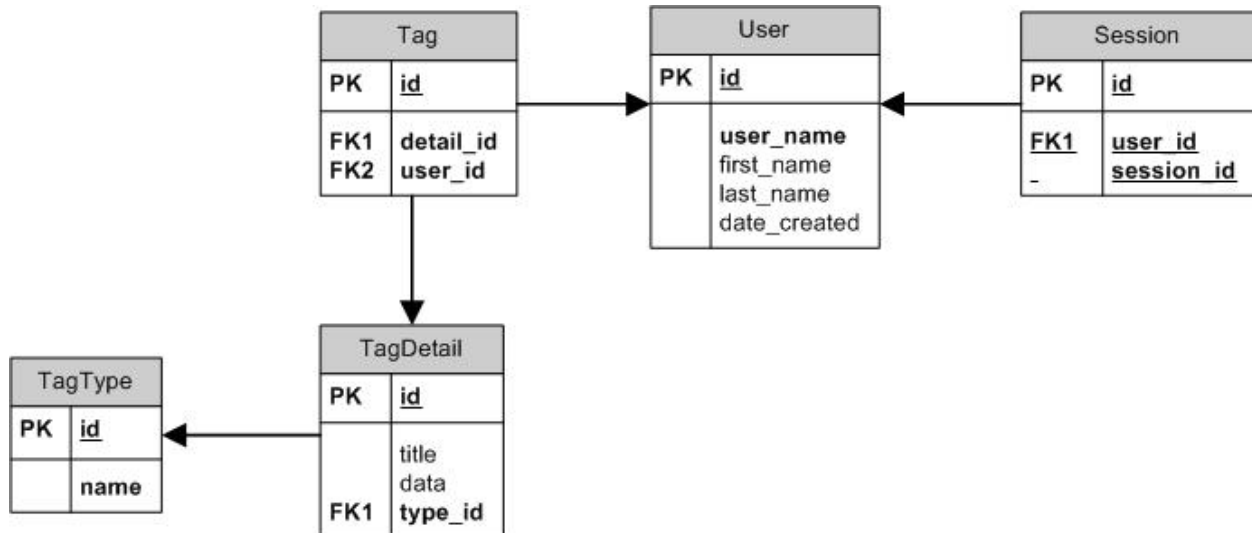


Figure 4.d depicts the database diagram for our SQLite storage on the iPhone.

## Data Requirements

### User Input

The user will be able to input information by use of the multi-touch screen. The graphical user interface of this application will have text fields and buttons that the user will need to ‘tap’, which will allow them to navigate through the app to various features, and input their information.

Users will also be using the 8-megapixel iSight camera built in to the iPhone 5 to take pictures which will be stored by the application. Pictures taken will be saved as a JPEG file, as is the default format for the Apple iPhone.

### Output

The major form of output for this application is visual, through the use of the iPhone 5’s 4 inch, 1136-by-640-pixel resolution with 326 ppi retina display. Any sound effects generated through the use of this application will output through the use of the built in speakers, or via a connected set of headphones.

## **Online Use**

The software will be able to connect and pull direct images from the internet via the application. The user will also be able to perform searches for images and add those files to the phone's internal storage.

## **Feature Priority List**

### **Version 1**

1. The ability to take a picture
2. Adding Tags to a picture:
  - a. Writing a description for the image
  - b. Adding 1 word tags for search and recall purposes
3. A function to view all pictures from a certain day

### **Version 2**

1. Setup the first time the app is opened
2. Allow picture cropping
3. A function to display the most frequently used tags
4. A function to display all picture related by certain specified tags
5. A Slideshow function

### **Version 3**

1. A function to view all pictures from a specified time range of any length
2. The ability to add a picture from somewhere online
3. The ability to share pictures or albums to Facebook
4. Drawing on the image as a tag
5. Automatically geo-tag images when possible

## References

- [1] Freedom Software Foundation. (29 June 2007) *GNU General Public License*, Version 3 Internet. Available: <http://www.gnu.org/licenses/gpl.html>
- [2] E. Berkeley, “*The Social Responsibilities of Computer People*”, Garden City, N.Y., pp. 461-471
- [3] D. Gotterbam, K. Miller, and S. Rogenon, “*Software Engineering Code of Ethics, Version 3.0*”, Journal, Oct. 1997, vol.30, no.10, pp. 88-92