C.S.-A.C.T.I.O.N.S.

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Contents

1.   Product Overview and Summary

The clients, Dr. Breimer and Professor Matthews, need an easy to use application that keeps track of Computer Science alumni. C.S-A.C.T.I.O.N.S will be a web application with a collection of alumni profiles that will be accessible by other alumni, current Siena Computer Science majors, and high school students. The goal of C.S-A.C.T.I.O.N.S is to also allow current Siena Computer Science or prospective students a chance to see what career paths Siena Computer Science graduates have taken and allow them to reach out to a specific alumnus. C.S-A.C.T.I.O.N.S will also keep Siena College Computer Science alumni connected to each other.

2.   Environments

2.1 Development Environment

PC:
Operating System: Windows 7 Enterprise (x64) Service Pack 1 (build 7601)
Processor: 3.20 gigahertz Intel Core i5-3470
RAM: 6100 Megabytes Usable Installed Memory
HDD: 499.78 Gigabytes Usable Hard Drive Capacity

MAC:
Model Name: iMac
Model Identifier: iMac12,1
Operating System: OS X Lion 10.7.5
Processor Name: Intel Core i5
Processor Speed: 2.5 GHz
Memory: 4GB
HDD: 500GB

Server:
Server Name: oraserv.cs.siena.edu
Operating System: CentOS 5.2 (final)
CPU: Intel Xeon 2.66 GHz CPU
RAM: 8 GB of Memory

2.2 Operating Environment

CS-ACTIONS will be a web-based application and will be able to run on any operating system including, Mac, Windows, or Linux, and on any browser such as Google Chrome, Mozilla Firefox, Microsoft Internet Explorer, or Apple Safari.

2.3 Maintenance Environment

Most of the maintenance to this system will be done in the Software Engineering lab on the machines listed in section 1.7.1.

3.   Use Case Narratives

3.1 Student

The student will navigate to the webpage. Once the student is on the webpage, the student is able to interact with the map. The student can click on pins and view the information available to the public on any of the Alumni profiles. If the student is interested in contacting an alumnus, they have the option to send the alumnus a request for contact using the students own email address. The student will have to enter in contact information and a note indicating why the student wishes to contact the alumnus. The email entered in the contact information will indicate whether the student is a current Siena student or not.

3.2 Alumni

The Alumnus will navigate to the webpage. The alumnus will go to the login screen where the options to register, log on or change password will be offered. To register the alumnus will provide information and answer a survey to fill in the information on the profile. This information will not be shown to the public until the administrator approves the alum. To log on the alumnus will enter a unique username and password that was provided to the alumnus by email to log into C.S.-A.C.T.I.O.N.S. Once logged in, the alumnus has the ability to edit the alumni profile and the ability to change the password. The alumnus is able to disable certain content from being shown on the webpage such as contact information. As well, the alumnus may hide their profile all together from the map. The alumnus has the option to receive a new auto generated password if the alumnus forgets their password. The alumnus also has the ability to view the map and click on pins to view any other Alumni profiles. Alumni are able to send other alums a request for contact by sending the other alum contact information and a note indicating the reason for contact.

3.3 Administrator

The administrator is in charge of all alumni profiles. The administrator is able to log into C.S.-A.C.T.I.O.N.S with the username and password. Once the administrator has logged in, the administrator has the ability view all of the content generated from the alumni survey. The administrator has the ability to approve or deny pending alumni profiles. The administrator is also able to delete, create, or edit the content on any of the alumni profiles. The administrator can also delete inappropriate content. If the administrator wishes to contact the alumni, they have the option to send a message to all alumni with an account on the system. The administrator can also interact with the map in the same way as the alumni and students.

4.   UML Use Case Diagram

4.1 UML Use Case Legend

An activity or action - Actors outside the system will interact with activities
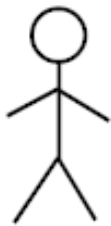
Actors - External entity that interacts with the subject.

Participation Line - Lines that connect actors with uses showing their participation
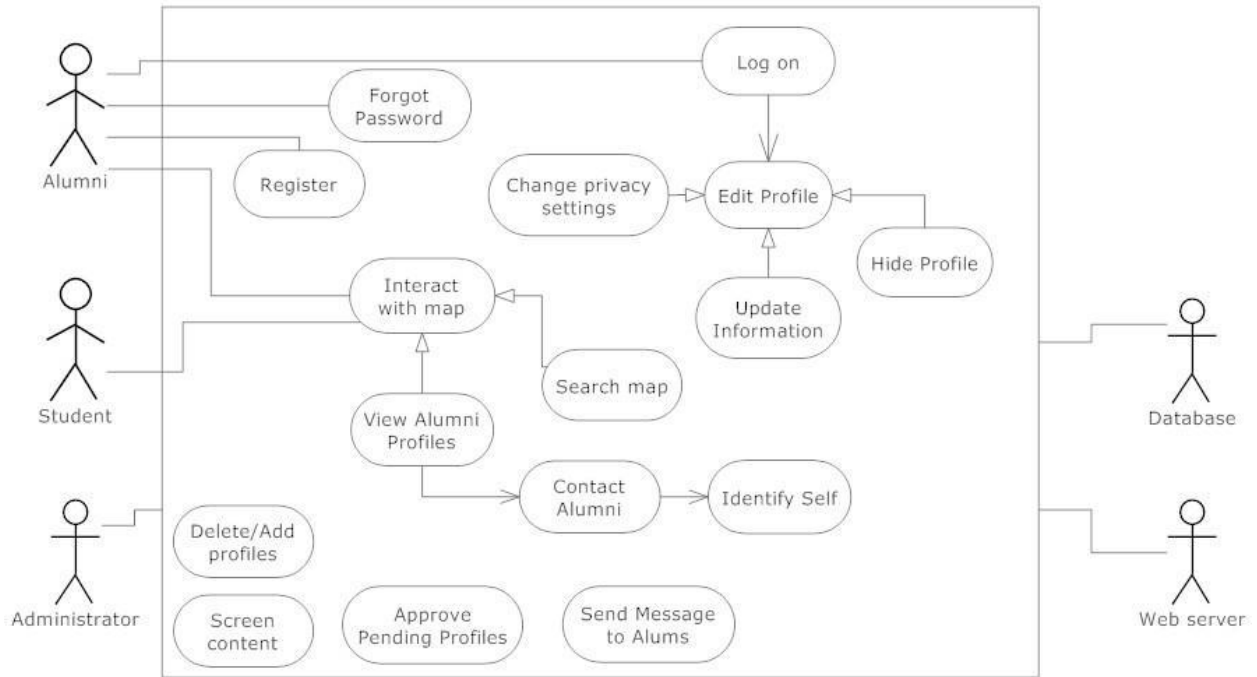
Extends Arrow - Shows sub uses that may not necessarily be accessed when their parent use is accessed.

Includes Arrow - Shows items that are included in a use

4.2 UML Use Case Diagram

5.   Data Flow Diagrams

5.1 Data Flow Legend

Data Flow Diagrams (DFD) show the movement of data as it flows through the system as well as data flows from outside entities. It is a means to document where data will be retrieved and stored through different processes. Each level of DFD's represent different levels of detail within the system.
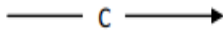
Symbols used in DFD's:

External Entity: Outside source that contributes and/or receives information.

Process: Manipulates data

Data Flow: Shows flow of data between processes and/or entities. C is the data being transferred.
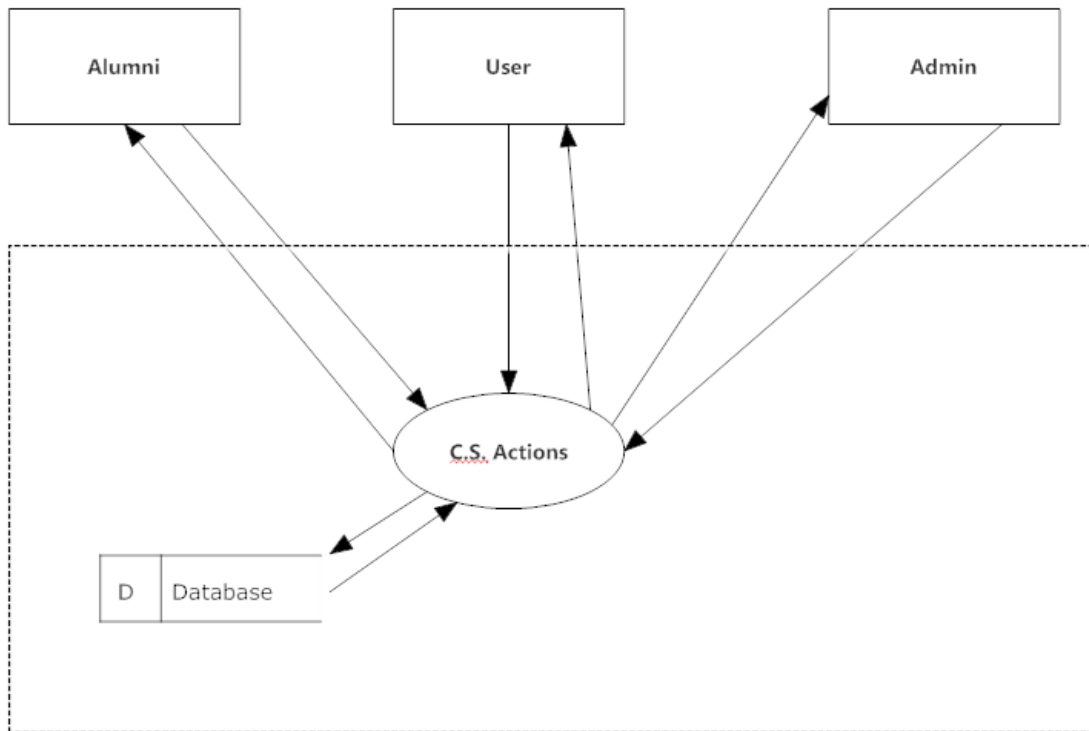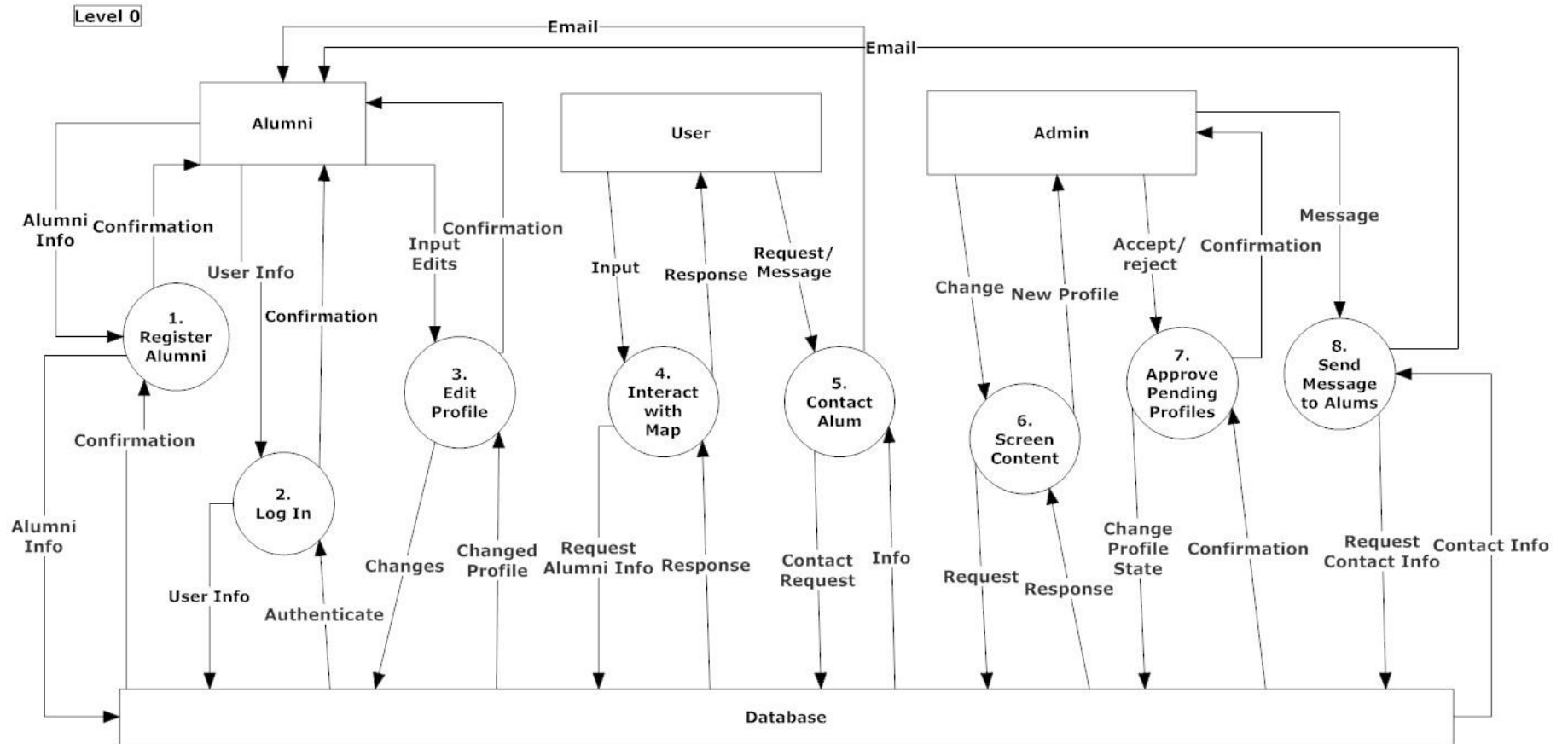
Data Store: Where data is held.

System Boundary: Anything within these bounds is considered part of the system. Anything outside is considered external to the system.
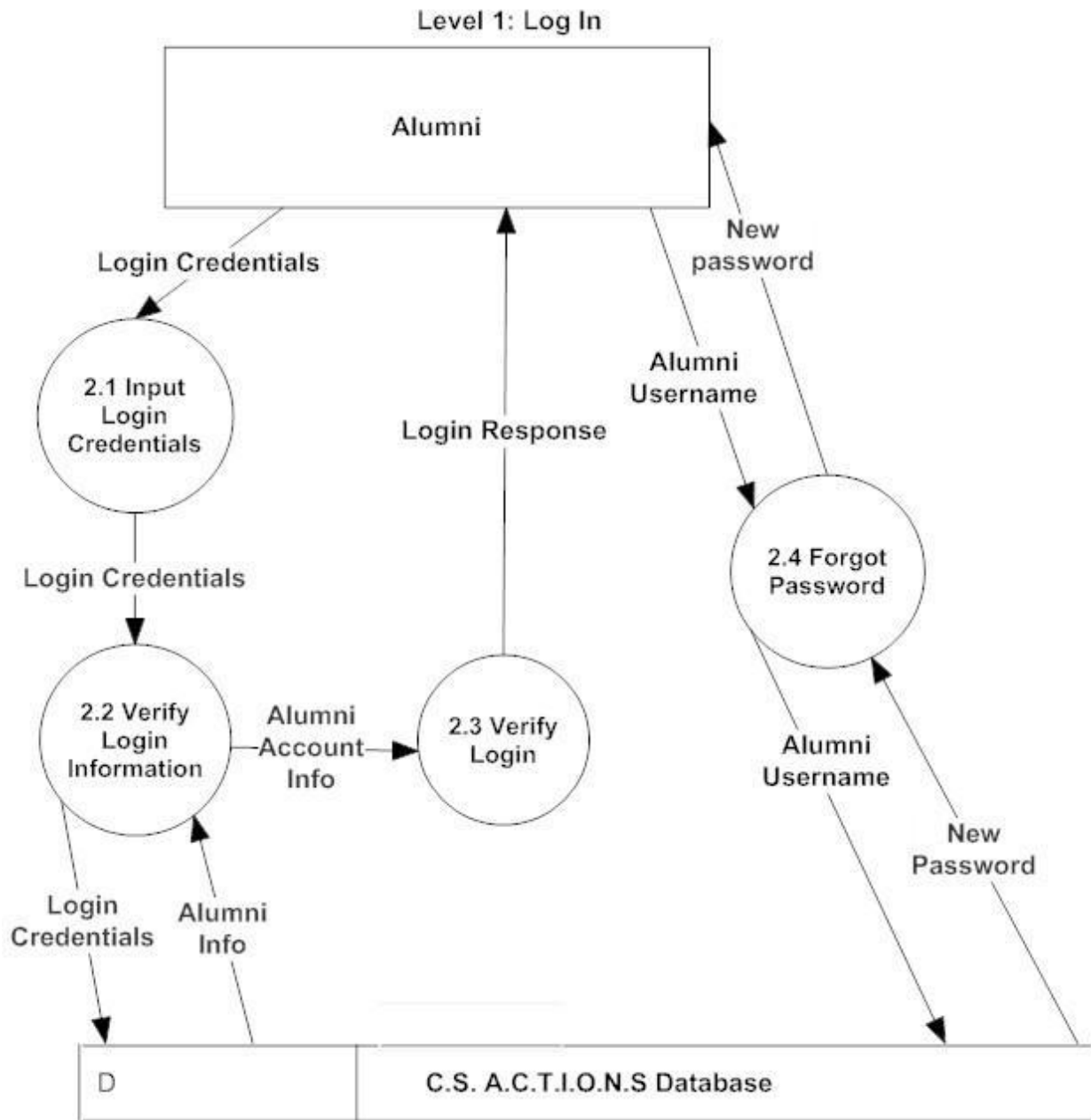
5.2 Context Diagram

5.3 Level 0 Diagram

5.4 Level 1 Diagrams

5.4.1 Log on

5.4.2 Edit Profile

Level 1: Edit Profile

5.4.3 Interact with map
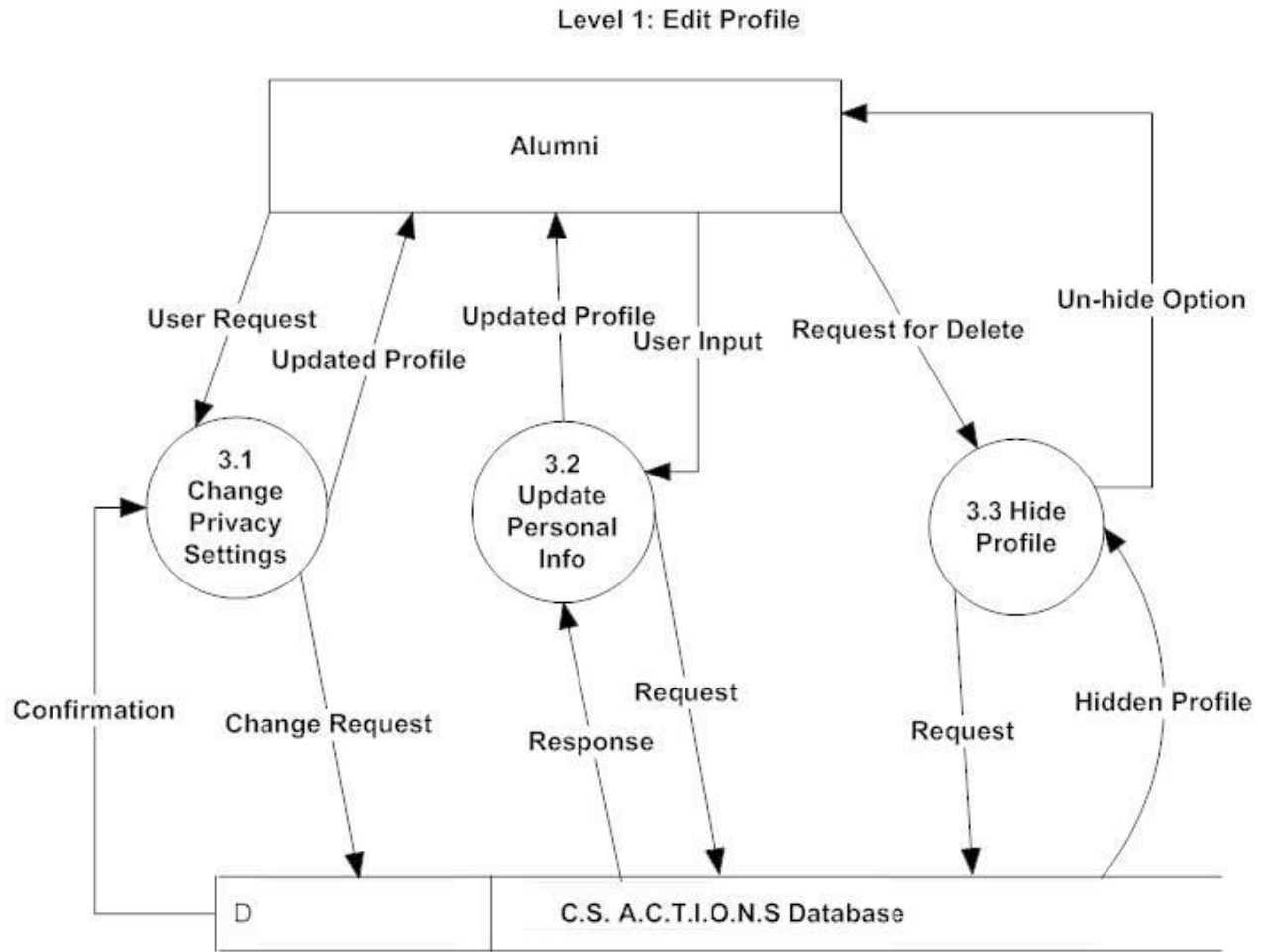
Level 1: Interact with Map
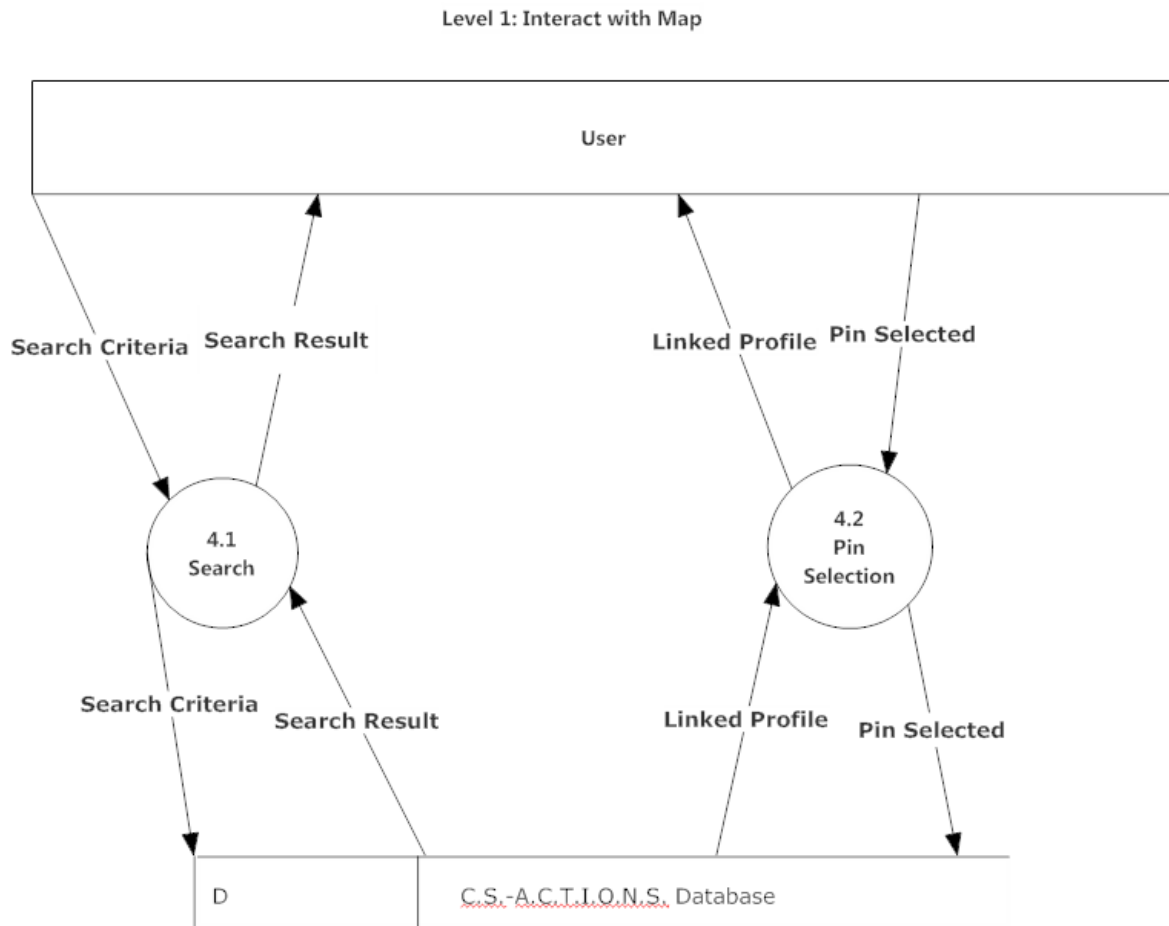
5.4.4 Contact Alumni

Level 1: Contact Alum
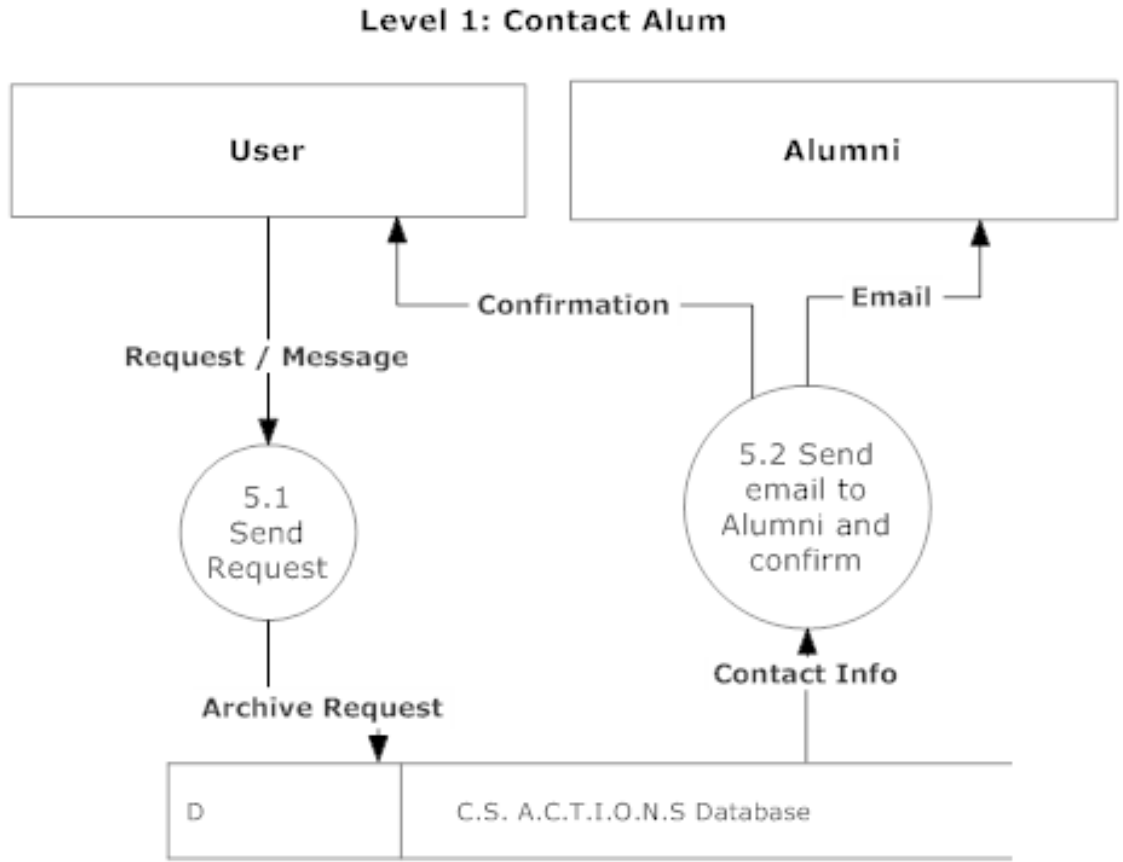
5.4.5 Screen Content

Level 1: Screen Content
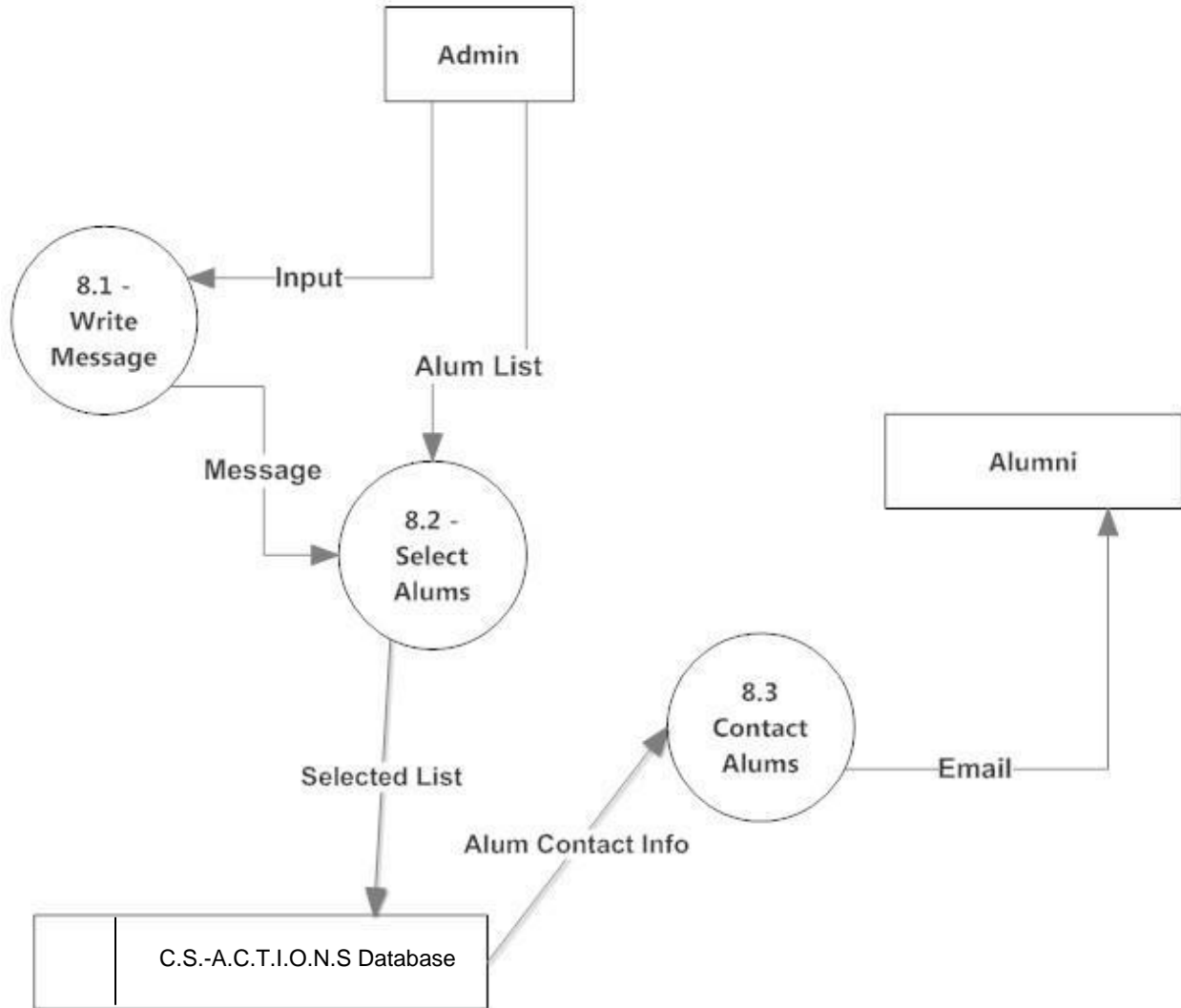
5.4.6 Approve pending profiles
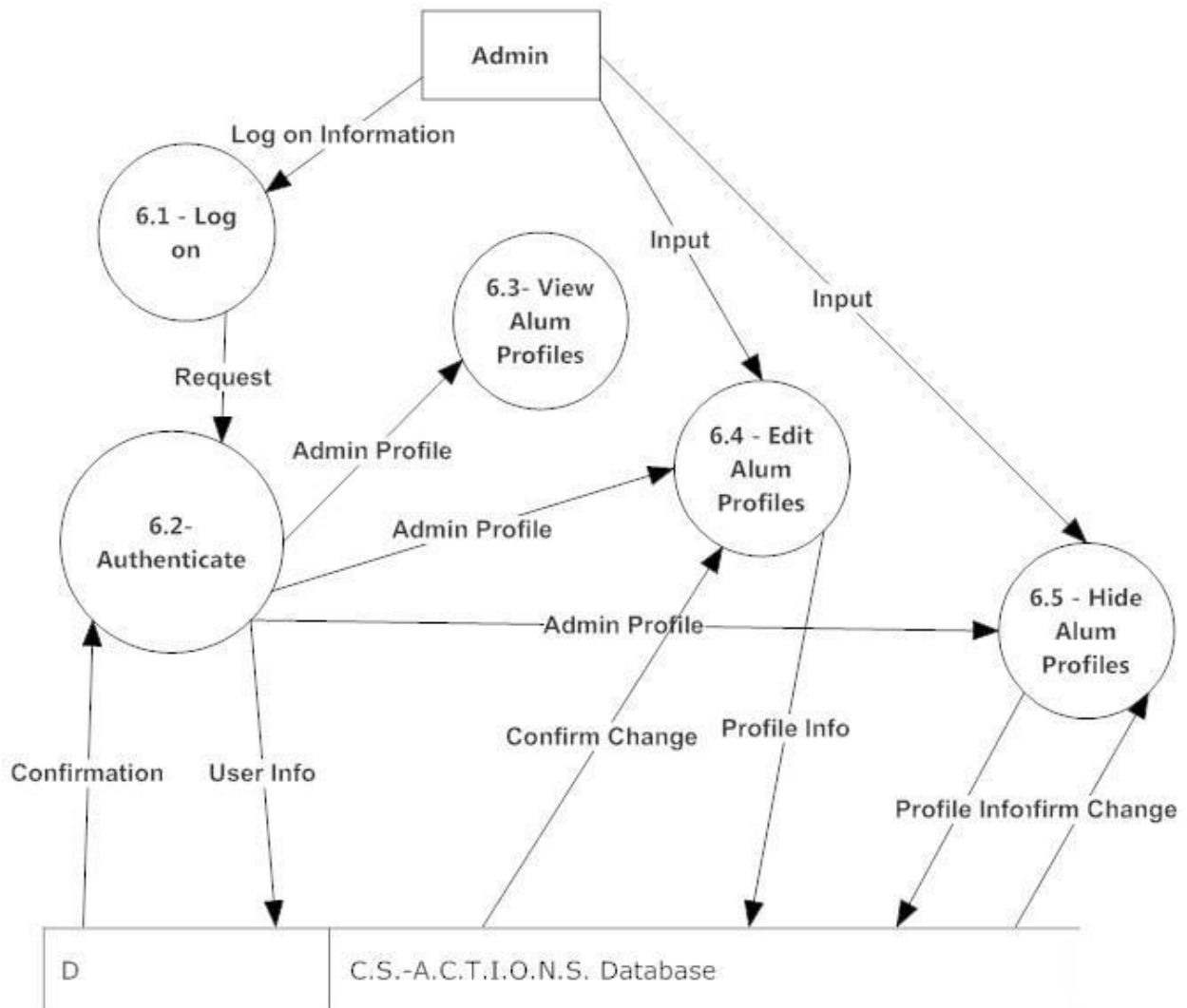
Level 1: Approve Pending Profiles
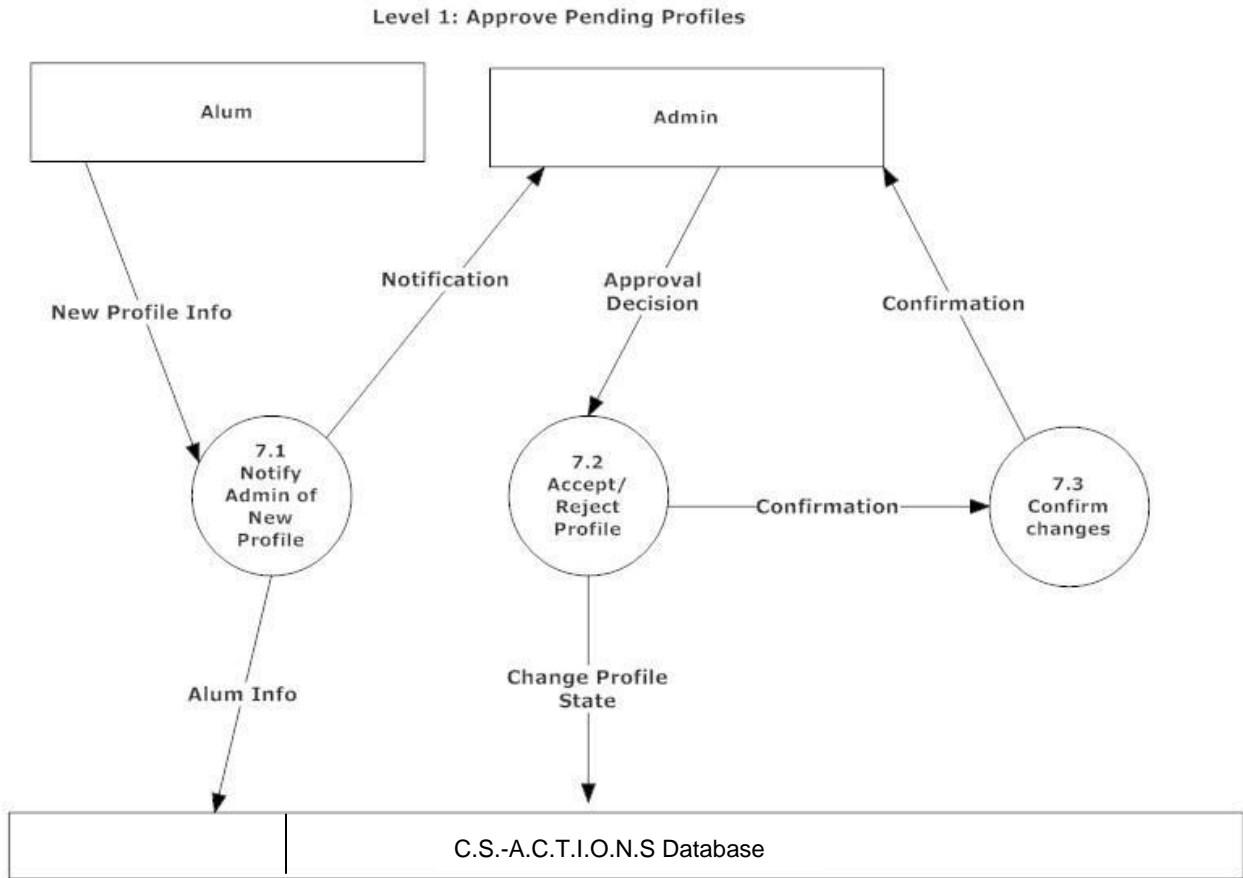
5.4.7. Send message to Alumni

Level 1: Send Message to Alums

6.   Prototypes for Discovery

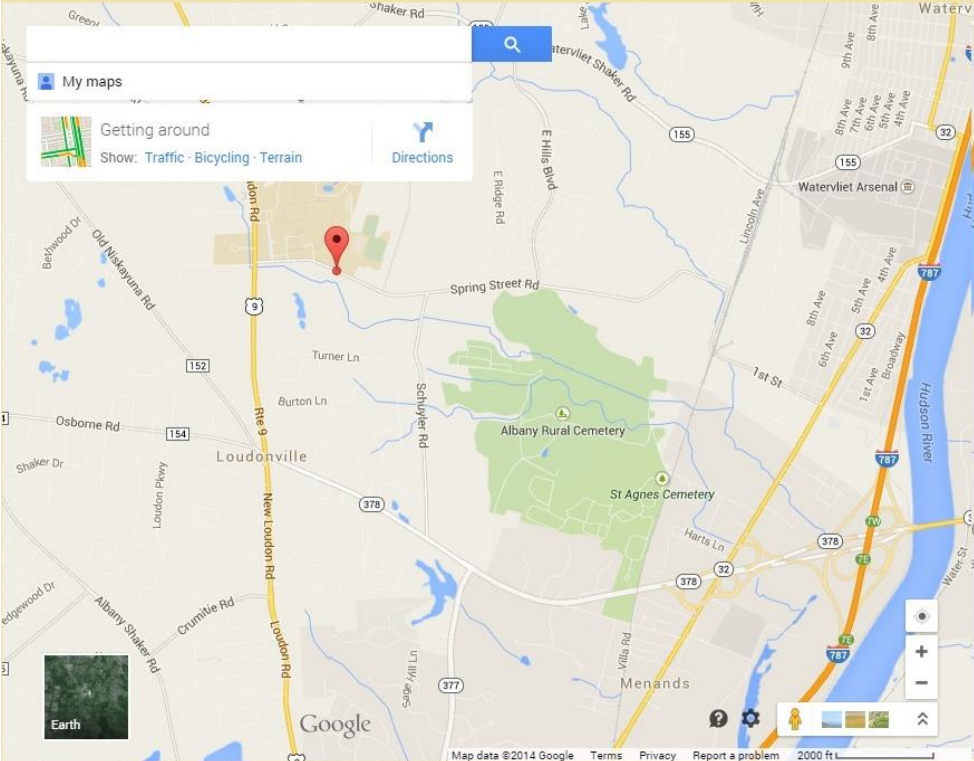# 7.   Function Requirements Inventory

7.1 Alumni:
- Will be able to set up an account on C.S.-A.C.T.I.O.N.S.
- Will be able to log into C.S.-A.C.T.I.O.N.S.
- Will be able to change password
- Will interact with map using pins representing locations of alumni
- Will be able to view other Alumni profiles
- Will be able to edit/make changes to own profile
- Will be able to change privacy settings
- Will be able to log out of C.S.-A.C.T.I.O.N.S.

7.2 Student:
- Will interact with map using pins representing hometowns of alumni
- Will be able to view Alumni profiles
- Will be able to contact Alumni

7.3 Administrator:
- Will be able to log into C.S.-A.C.T.I.O.N.S.
- Will interact with map using pins representing hometowns of alumni
- Will be able to view Alumni profiles
- Will be able to send message to all Alumni
- Will be able to edit/make changes to any information in an alumni profile
- Will be able to approve/deny pending profiles
- Will be able to log out of C.S.-A.C.T.I.O.N.S.

8.   Non-Functional Requirements

The following is a list of non-functional system requirements that specify how the system is intended to work.
- C.S-A.C.T.I.O.N.S will be user friendly
- C.S-A.C.T.I.O.N.S will run efficiently
- C.S-A.C.T.I.O.N.S will be easy to access
- C.S-A.C.T.I.O.N.S will have compatibility on multiple browsers
- C.S-A.C.T.I.O.N.S will be stable

9.   Exception Handling

MAKER Tech will ensure that C.S.-A.C.T.I.O.N.S. will be able to handle all scenarios that may occur on our system to guarantee that it functions properly at all times, even in the event of an error. All input will be screened to make certain that it works properly within our system. Error messages will prompt the user in the event that the input is invalid.

10.   Implementation Priorities

MAKER Technology intends on implementing all of our functional requirements. However, due to the constraint of time giving our team until May 2015 to finish this, it is important for our group to prioritize certain requirements. Below are our implementation priorities for C.S. ACTIONS. These requirements must be fulfilled to satisfy our customers and develop a viable prototype of our system.

- Give all users the ability to interact with the map
- Give all users the ability to view public individual alumni profiles
- Give all users ability to search for specific profiles
- Allow all users to contact individuals on our system that have a profile
- Give admin the ability to add, edit & delete profiles
- Allow alumni to log in to their profile
- Allow alumni to edit their profile
- Allow profiles to be in public, private, pending, and hidden states

11.   Foreseeable Modifications and Enhancements
These are requirements that will be added as time permits and are thus enhancements rather than core system requirements.

- Give admin their own accounts that allow them to make decision on notifications
- Allow the system to automate a process to contact possible alums not in system
- Automate process to send out update profile reminders to alums
- Interface with Linkedin API to attract more alums to system
- Log in to system using Linkedin
- Allow all users to contact individuals on our system that have a profile

12.   Testing Requirements

Our team will ensure C.S.-A.C.T.I.O.N.S. functions properly by continually testing throughout the development step. Our testing will include creating sample data such as test alumni profiles, test maps, and test alumni submissions. The test alumni profiles serve the purpose of ensuring our database can handle our desired amount of alumni information before our prototype is ready to be delivered to our clients. The test maps will ensure that our mapping interface will withstand a variety of different abnormal cases, such as alumni from out of the area and out of the country. The test alumni submissions will test our screening process that integrates an alumni survey into said alumni's profile on our system. Testing will not be done only at the conclusion of our first system but will be done continually throughout the year to ensure that all parts of the system can be integrated together with minimal errors. Testing will be done with input from our clients to ensure that the system will meet their every need. Before our system will be released for public use it will need to pass a strict series of tests that ensure it will be able to withstand rigorous use.

13.   Acceptance Criteria

C.S-A.C.T.I.O.N.S will contain the following features:
Alumni will be able to:
- Create a profile
- Share their experiences with the Siena community
- Have a customized social network to keep in touch with fellow Siena College Computer Science grads

Faculty/Admin will be able to:
- Reach out to alumni to ask for participation
- Manage all content on the system

Students will be able to:

    Prospective students will be able to:
    - View an interactive map with the locations of all participating alumni
    - View the profiles of alumni from any area they wish (aimed at finding alumni from their hometown/high school)
    - View the accomplishments of Siena Computer Science graduates

    Graduating Siena seniors will be able to:
    - Use the map as a resource to see what alumni are doing today
    - Contact alumni who wish to be a point of contact for their employer in search of jobs

14. Appendices

Appendix A: Cross Reference Index

C.S.-A.C.T.I.O.N.S. Context Diagram 5.2

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C.S.-A.C.T.I.O.N.S. Level 1 Send Message to Alumni 5.4.7

Appendix B: Sources of Information

Our primary source of information will come from Dr. Breimer and Professor Matthews through emails, and client meetings. Other sources of information include lectures from Dr. Meg Fryling in class, Dr. Lim in lab and through different reliable World Wide Web resources.

Appendix C: Glossary of Terms

API - Application **P**rogramming **I**nterface specifies a software component in terms of its operations, their inputs and outputs and underlying types

CS-ACTIONS – Computer Science Alumni Connection Through Interactive Open Networking System – This is the name and acronym for our system.

Gantt – a chart in which a series of horizontal lines shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those periods.

HTML – HyperText Markup Language – language used to develop websites

Java - Object-oriented programming language developed by and maintained by the Oracle Corporation

JavaScript - Computer programming language used primarily in web browsers for based client-side scripts

SQL - Structured Query Language, language used to develop databases

Appendix D: Timeline

Task	Time Span (days)	Start	Finish
Form Teams	1	9/5	9/5
Build Software Plan	10	9/10	9/18
Build Team Website	15	9/15	9/29
Software Plan Due	1	9/19	9/19
Software Plan Presentation	1	9/23	9/23
Team Website Due	1	9/30	9/30
Requirements Specifications	34	9/24	10/27
Requirement Documents Due	1	10/28	10/28
Requirement Presentation	1	10/28	10/28
Preliminary Design	28	10/29	11/25
Preliminary Design Due	1	11/26	11/26
Preliminary Design Presentation	1	12/2	12/2
Team Meetings	83	9/10	12/1
Client Meetings	76	9/11	11/25