

# Prototype Report (PRO)

We Are Trojans (WAT) Network

Team01

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# Version History

Date	Author	Version	Changes made	Rationale
08/20/12	SK	1.0	<ul style="list-style-type: none"> <li>Original for CSCI477; Tailored from ICSM OCD Template</li> </ul>	<ul style="list-style-type: none"> <li>To fit CS477 course content</li> </ul>
10/11/14	KS, SE, SP	1.5	<ul style="list-style-type: none"> <li>Include Prototype for We Are Trojans (WAT) network Project</li> </ul>	<ul style="list-style-type: none"> <li>To mitigate risks and to finish CS577a group prototype deliverable.</li> <li>Draft FCP for Valuation Phase</li> </ul>
10/20/14	KS,SE, SP	2.0	<ul style="list-style-type: none"> <li>Added purpose of prototype, edited text and deleted alternative 1 because alternative 2 is the one we will be using</li> </ul>	<ul style="list-style-type: none"> <li>For FCP</li> </ul>
11/29/14	KS	2.5	<ul style="list-style-type: none"> <li>Added HTML/CSS UI mockup and user survey result</li> </ul>	<ul style="list-style-type: none"> <li>Draft version before the actual 3.0</li> </ul>

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# Introduction

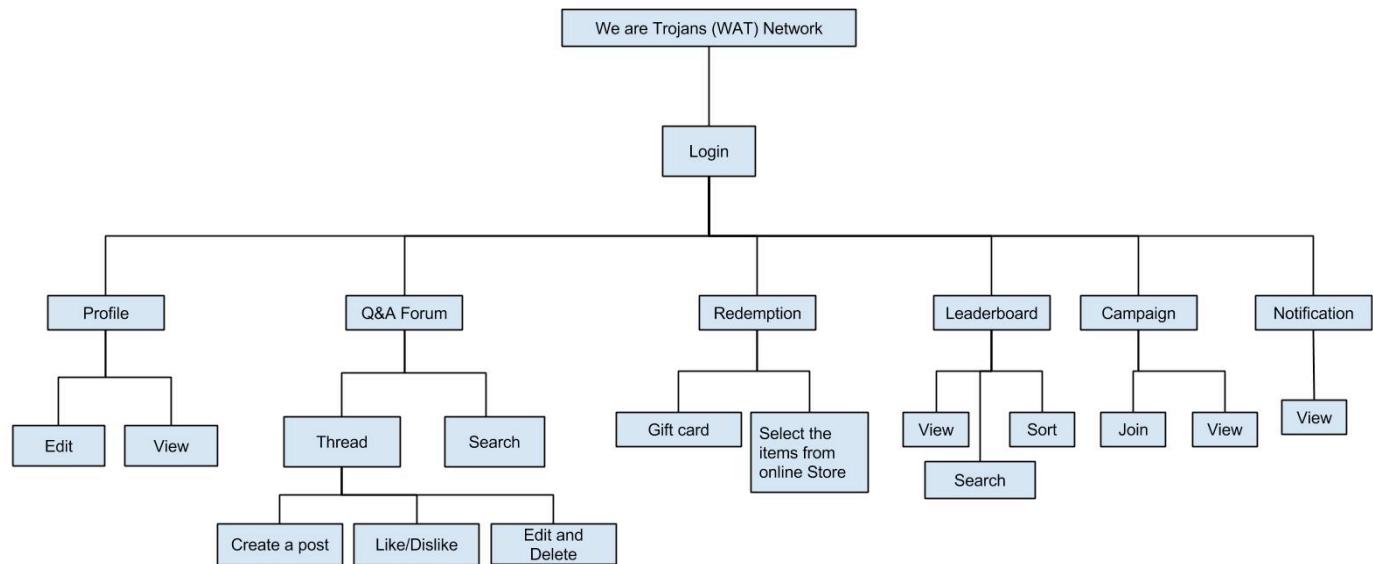
## 1.1. Purpose of the prototype

Prototype is one way to mitigate risk. Our prototype currently includes Graphical User Interface and Algorithmic approach to solve a problem. We are developing prototype for our team members and clients to have mutual understanding of the particular features of the system. This way, we can demonstrate our understanding to the client visually so that we can get a feedback that is clear and accurate. Prototype also serves as feasibility evidence. We gain knowledge about how difficult to implement a particular feature will be so that we can mitigate or solve this problem early.

## 1.2 Status of the prototype

We developed an initial GUI prototype and WAT points system prototype and presented to the client in the 2<sup>nd</sup> win-win negotiation and also in ARB presentation. In this report, we made changes to the initial prototype according to the client's feedback. These prototypes serve as a placeholder for group members to share the same understanding of the subject. They also act as feasibility evidence.

# 1. Navigation Flow



**Figure 1: Navigation Flow**

## 2. Prototype

### 3.1 Prototype #1 User Interface

#### 3.1.1 Purpose of this prototype

The clients have specified the requirements, but the design and functionality of the user-interface is not strictly determined. In addition to that, prototype of user interface will enhance the team's understanding of whether the features requested by the clients are feasible within the specified time-frame or not.

The initial UI is designed based on clients' requirements following the good UI Design practices namely:

- Maintain consistency
- Easily reversible actions
- Informative feedback
- Reduce short-term memory load

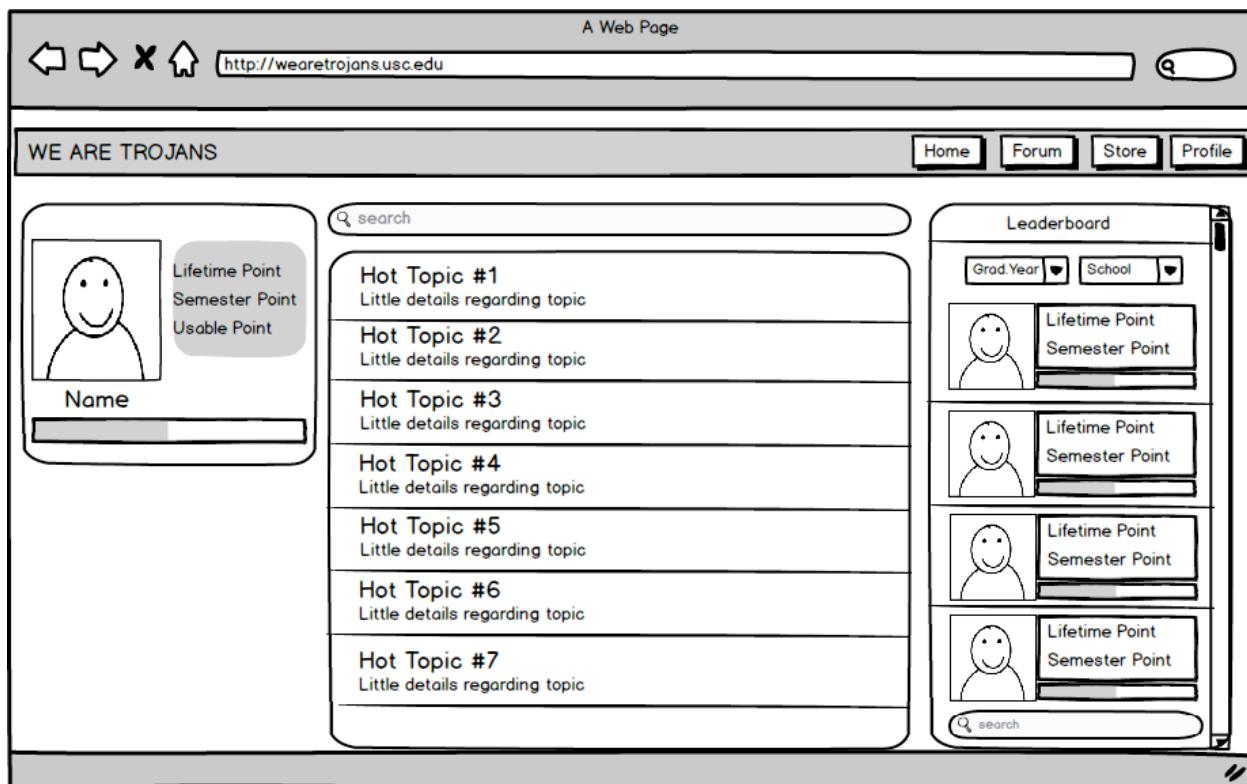
The visual layout design will enable the clients to view how their requirements will be implemented on the web-page. The informative feedback from clients will eliminate the risks (client is not satisfied with the product design). This methodology of buying information where we prototype a critical feature helps us mitigate the risk of creating an unsatisfactory UI design.

The design will also be beneficial for us to understand how the things need to be represented, and will enable us to prioritize development tasks. In this prototype we will use buying information methodology by demonstrating the user interface visually and getting feedback from client for risk mitigation of understanding user interface and its functionalities.

Once the prototype is approved or certain changes needed to be made are understood, the design can be easily manipulated to accommodate the changes. It is easy to make changes on static pages where SLOC = 0. Whereas designing the page using SLOC > 0 might be a detrimental factor for cost and schedule.

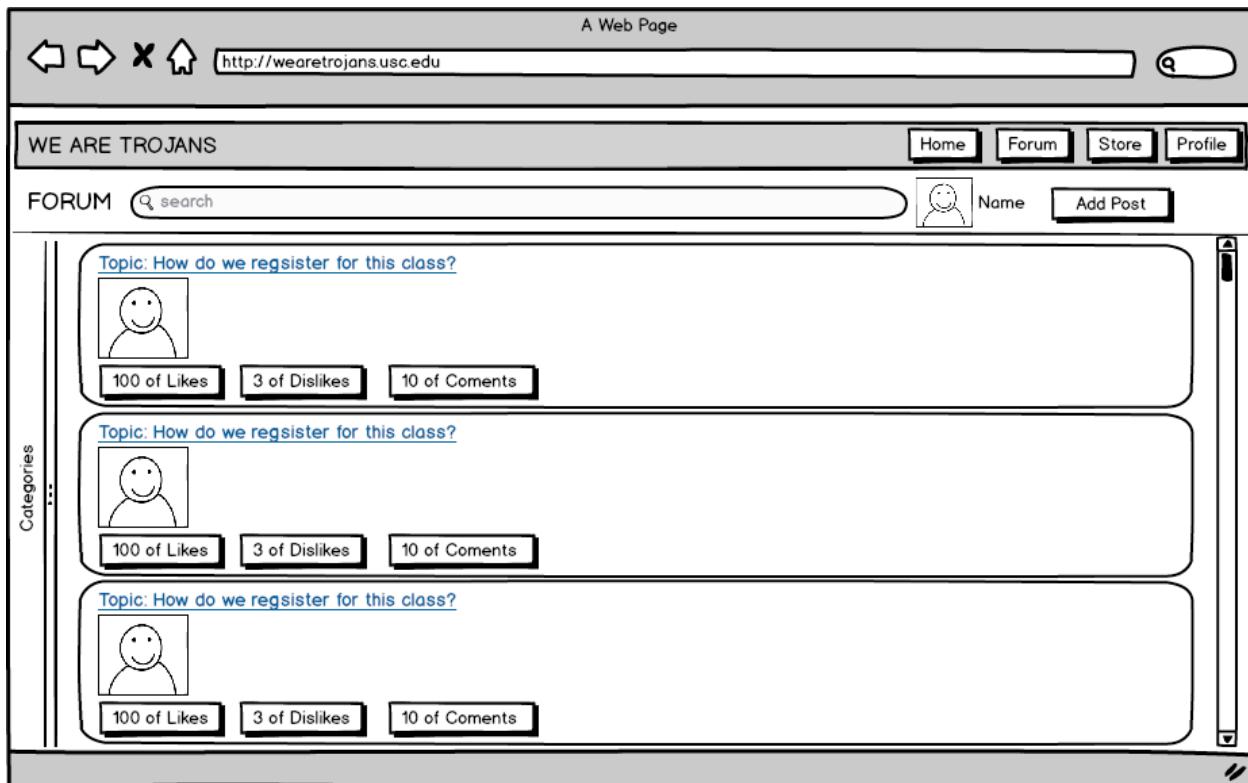
**Table 1: Home Page**

Description	This screenshot is of the <b>home page</b> of the “We Are Trojans (WAT) Network.”
Related Capability	The home page should contain the following components: <ul style="list-style-type: none"> <li>• Leaderboard</li> <li>• Notification System</li> <li>• User Profile</li> <li>• Main menu</li> <li>• Search Option</li> <li>• Experience Level</li> </ul>
Pre-condition	The user enters true user name and password at the “log-in page” and clicks “log-in” button.
Post condition	<ul style="list-style-type: none"> <li>• A user can see the leaderboard of current semester.</li> <li>• A user can see his/her level from the level bar</li> <li>• A user can search the forum within the home page for easy content access.</li> <li>• A user can see the hot topic threads, which has gotten highest number of likes.</li> <li>• Depending on what user selects, a user will be directed to another page.</li> </ul>

**Figure 2 Home Page**

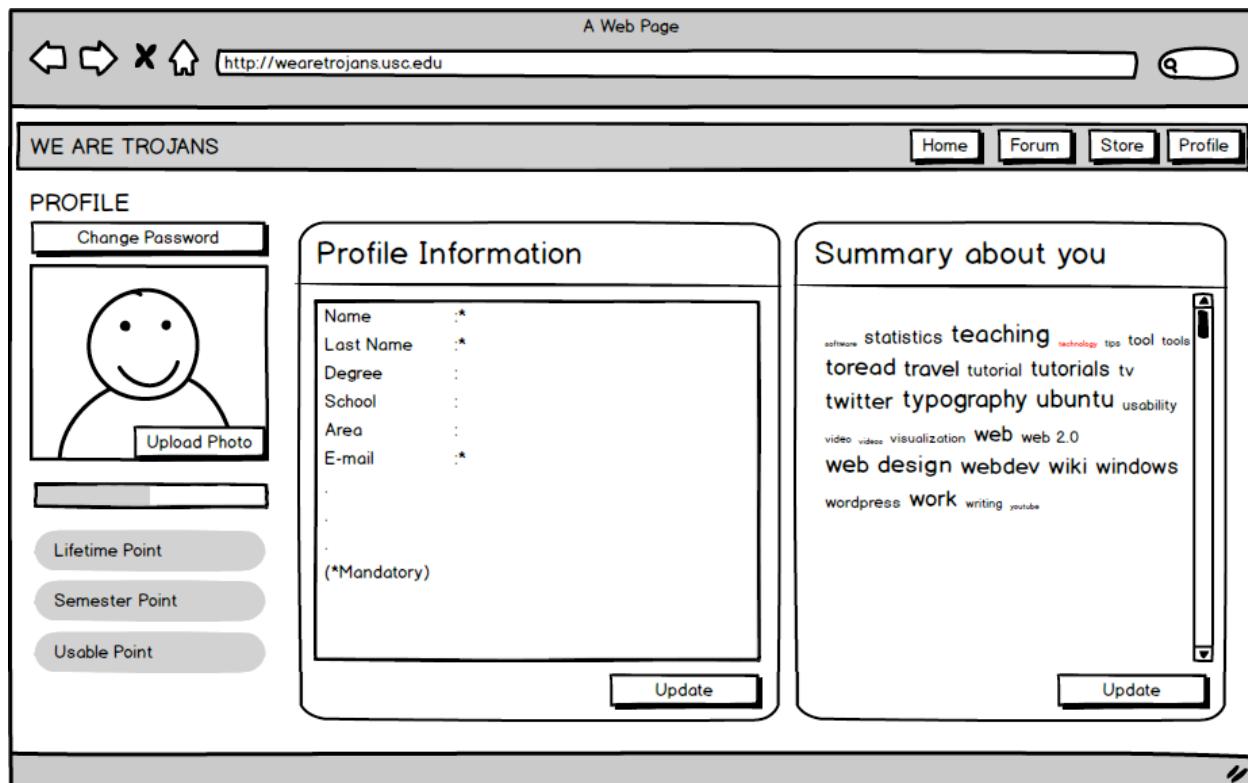
**Table 1: Forum Page**

Description	This screenshot is a prototype/ wireframe of a <b>forum page</b> of “We Are Trojans (WAT) Network.” This forum is one of the biggest parts in the project. It serves as a place for students to share their knowledge in all fields related and unrelated to the school. Like and Dislike functionalities are also important can be accessed only within this forum
Related Capability	The forum page should contain the following components: <ul style="list-style-type: none"> <li>• Categorization (collapsible, will only show when click)</li> <li>• Like Functionality</li> <li>• Dislike Functionality</li> <li>• Search Option</li> <li>• Main Menu</li> </ul>
Pre-condition	A user either clicks the forum icon at the home page or uses search function on the home page.
Post condition	The user can see category tab on the right side when click to show the tab The user can be directed to related threads according the search. The user can create a thread within this page by clicking “add post” button. The user can read a thread by clicking at each entry in the forum The user can give likes and dislikes to any thread he or she sees useful

**Figure 3: Forum page**

**Table 3: Profile Page**

Description	This screenshot is a prototype/wireframe of a <b>profile page</b> of “We Are Trojans (WAT) Network.” It serves as a place for a user to check his or her involvement (by seeing the WAT score) or connect with other students by checking their profile page. In the profile page, a user can update their status or write a summary about himself.
Related Capability	The profile page should contain the following components: <ul style="list-style-type: none"> <li>• Update Profile Functionality</li> <li>• Personal Wall (to post status / summary of his/herself)</li> <li>• Experience Level</li> <li>• Main menu</li> </ul>
Pre-condition	A user either clicks the profile icon on the menu bar or click a picture of any other users to check out others profile page
Post condition	The user can update their status, change password, and manage their account within this page. The user can also check his or her friends' profile page ( but of course, they can't update or post anything on others page)

**Figure 4: Profile page**

## 3.2 Prototype #2 Point System

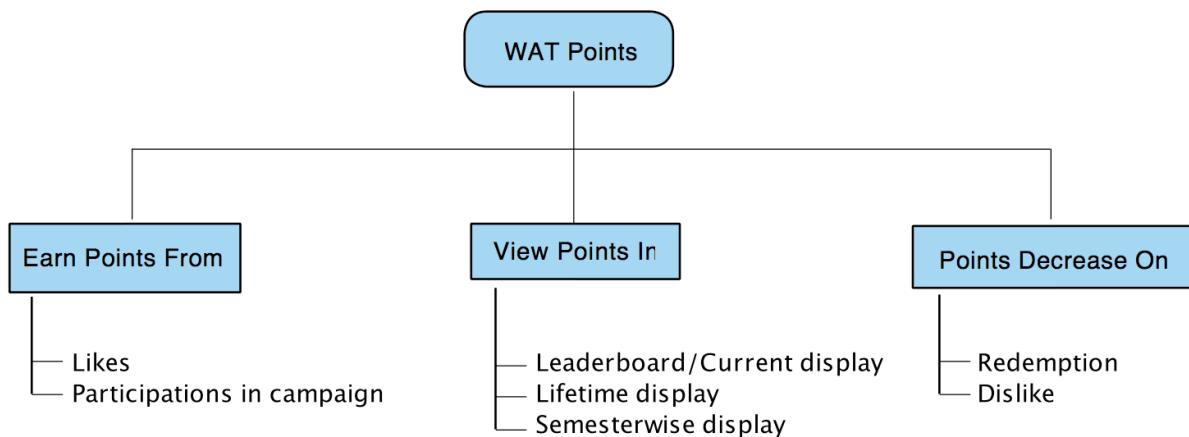
### 3.2.1 Purpose of the prototype

The points system is a critical feature of the system. It serves as the base for the development of other features of the system such as the leaderboard and the like/dislike functionality for a thread or a comment. In order to determine the feasibility of the proposed points system and create mutual understanding among the team member, there is need to prototype the points system.

### 3.2.2 Flow Chart (Point System) breakdown

In the points system every user has 3 different points system:

- Total points (TPoint)
  - Accumulated lifetime points of a user
  - Identify the credibility of the user
- Semester points (SPoint)
  - Reset every semester
  - Compete with other user in the system
- Current points (CPoint) or Usable Point
  - Redeem items from gifts store.



**Figure 5: Work-Breakdown Structure Specific to “WAT” Points Functionality**

### 3.2.3 Current Problems

In the WAT points system there are three problems:

**1).** How to keep track and sync three different types of WAT point for the like and dislike? (They could change at any time)

**2).** Client specifically says that “each thread or comment can only contribute positively to a user’s points”—which mean a thread or a comment cannot give a negative point to a user even though the total points of dislike is greater than those of like. (Assume 1 like = 1 points, 1 dislike = -1 point).

**3).** If a user use all his or her usable point to redeem something (so usable point will be 0) After that, what will happen when his thread or comment get a dislike? Will his usable point become negative?

### 3.2.4 Approach Solution

1). An algorithmic approach to solve problem 2 and 1, namely how to calculate a thread or a comment point

Requirement: A thread or a comment can only contribute positively to a user’s points.

NL = Number of Like

ND = Number of Dislike

LV = Like Value

DV = Dislike Value

$$Post's\ Point = \begin{cases} 0 & \text{if } NL \cdot LV - ND \cdot DV < 0 \\ NL \cdot LV - ND \cdot DV & \text{if } NL \cdot LV - ND \cdot DV \geq 0 \end{cases}$$

**Figure 6: Calculation of Threads or comments’ Points**

2). Monthly Point Update (solve problem 3)

Assumption:

After 1 month, a thread or a comment score will be stable.

Procedure:

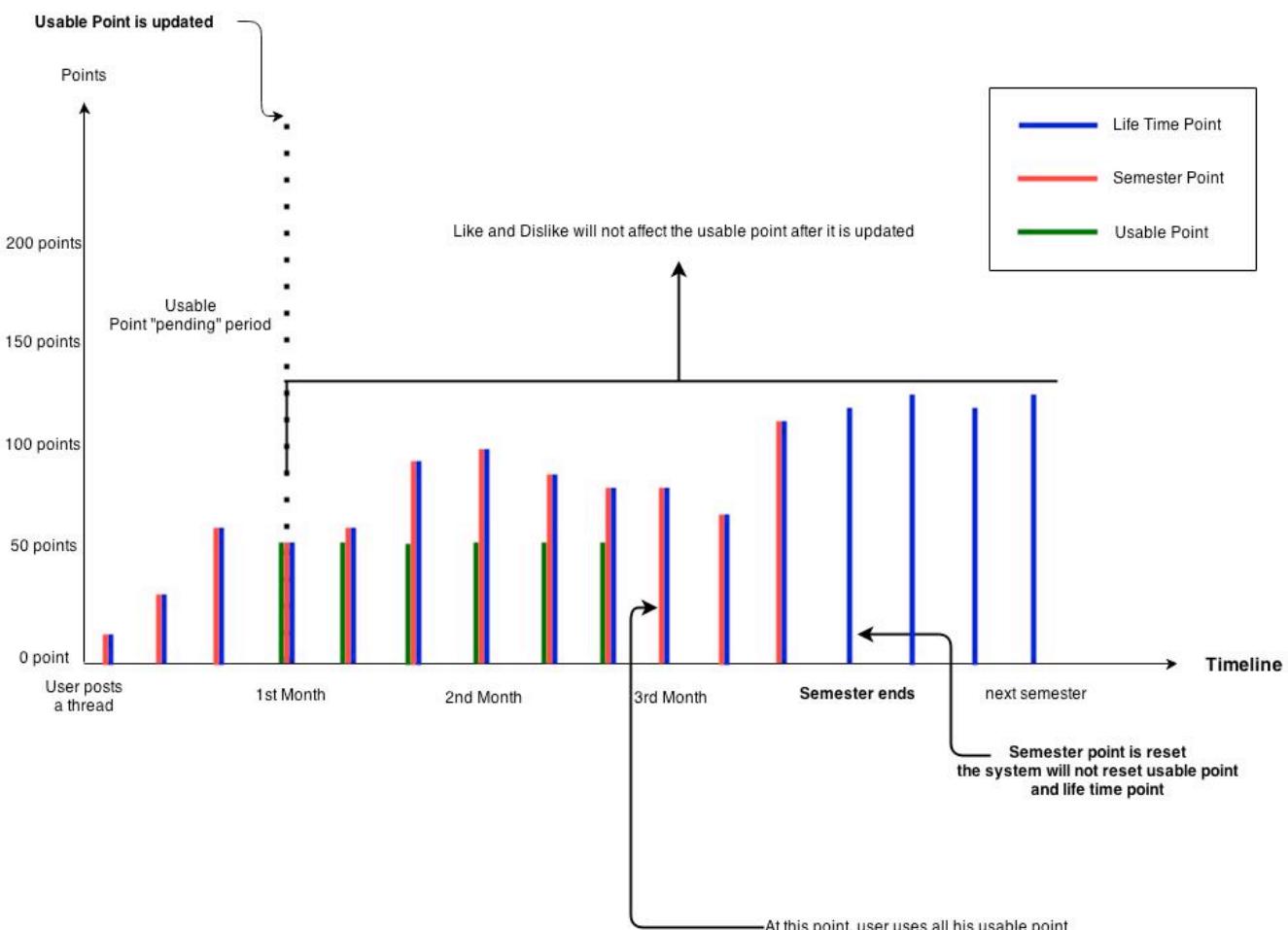
- 1). All point gain and lose of a thread or a comment (from like and dislike) will be kept as “usable pending.”

- 2). The thread or comment point from #1 will be calculated into a usable point only when **the thread or comment** is one month old.
- 3.). At the time of calculation, the point will be added to the user's useable point.
- 4). However, after the point is updated, that thread or comment score will no longer affect user's useable point. The point will still affect a user's lifetime point and semester point.

This approach solves the issue of negative balance (useable point) when a user has 0 useable point and someone dislikes the thread or comment. Like and dislike functionality will determine the position of the thread or comment in the forum (rank)

**Summary Solution:** Only usable gets updated by monthly update mechanism, 2 others point gets updated every time someone likes or dislikes the thread or comment. This is by far the best solution as of now. We will keep track of only usable point for the first month. After the first month, the usable point will be added to the user's points. However, all other 2 points (semester point and lifetime point) are not restricted by this monthly update mechanism. They get updated every time the thread or comment gets a "like" and "dislike."

**Assume that this is the only post that the user has posted.**



**Figure 7: Diagram for the monthly update mechanism**

### 3.3 Prototype #3 HTML/CSS/JS UI mockup

#### 3.3.1 Purpose of the prototype

Some of our developers do not have any experience on web designing and it will take us a lot of time if we want to design HTML/CSS/JS in the development phase. We already designed our initial UI mockup with a program called balsamiq mockup so we think it is a good time to start designing the real UI on actual web programming language. This way when we work on the selected framework, we can just apply this UI and we will reduce a lot of time if we want to add or delete something.

Also, this UI mockup helps us and our clients to be on the same page about the UI design. We already showed this UI prototype to our clients. However, these prototypes are not the final version. We will use them as our evolutionary prototype and alter them as we go. This way, we will save a lot of time in the future.

We also could create a UI survey and let our potential users use the system and see how they like the UI.

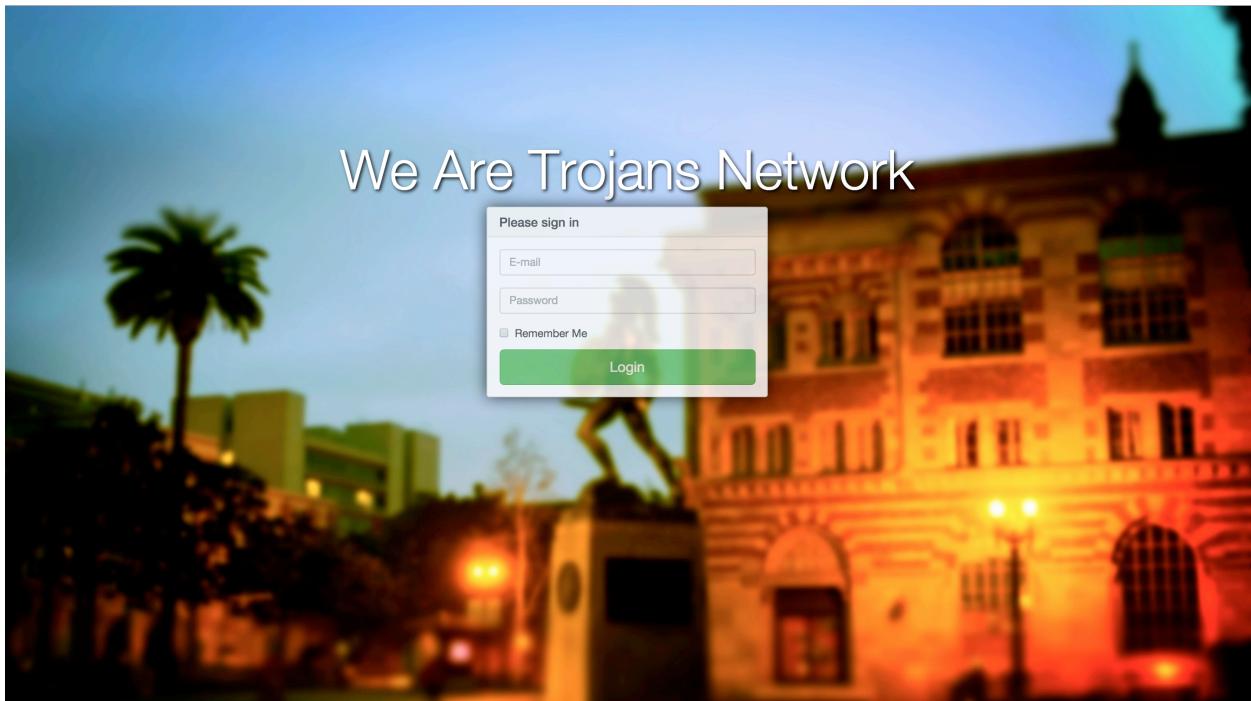


Figure 8: Login Page

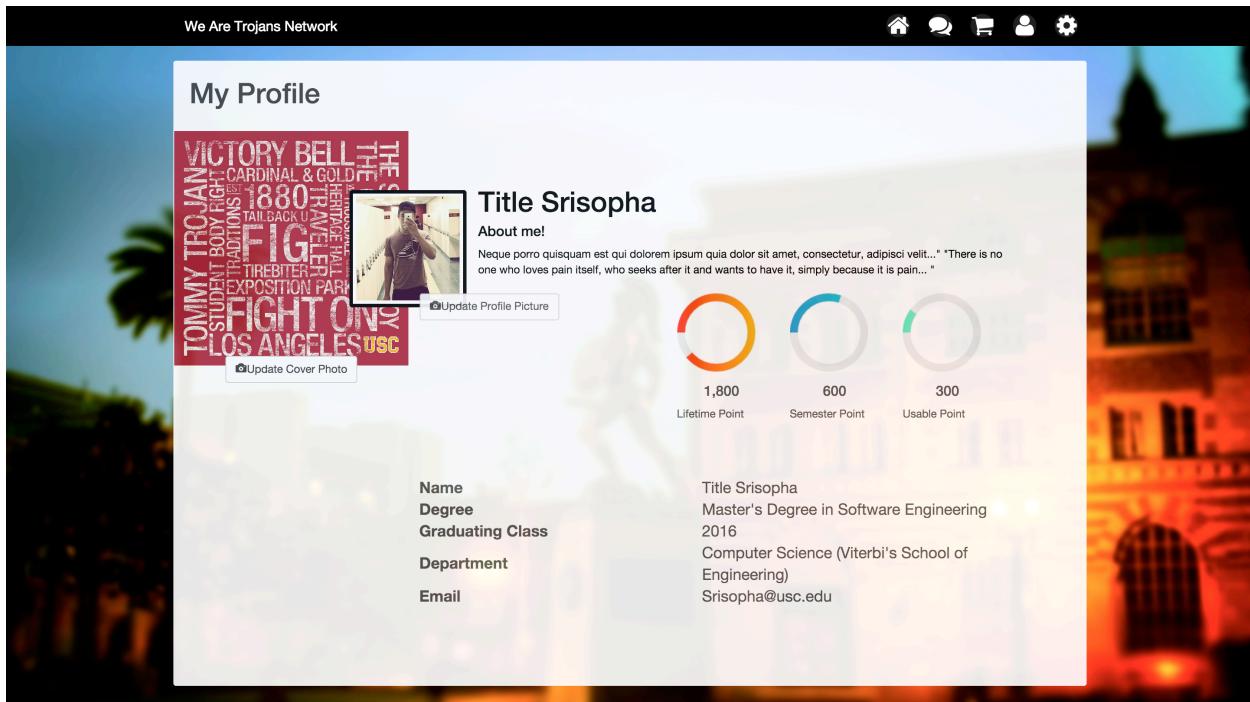


Figure 9: Profile Page

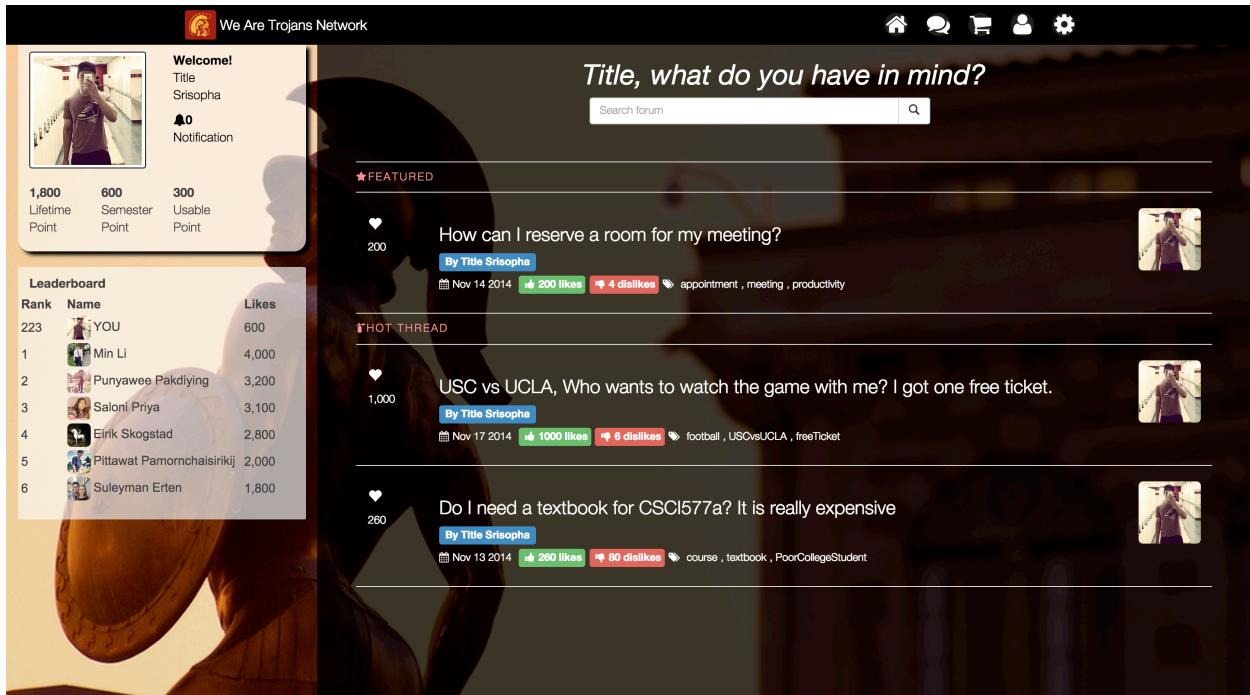


Figure 10: Homepage

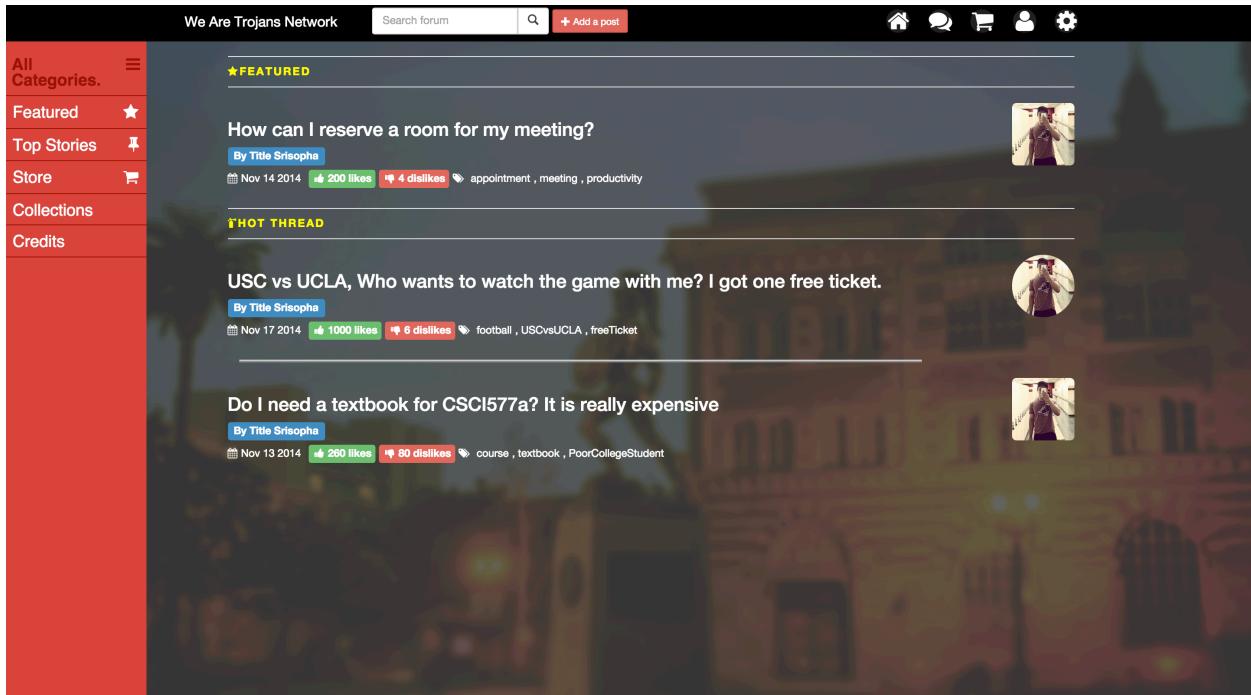


Figure 11: Forum Page (collapsible menu on the right side is fully shown)

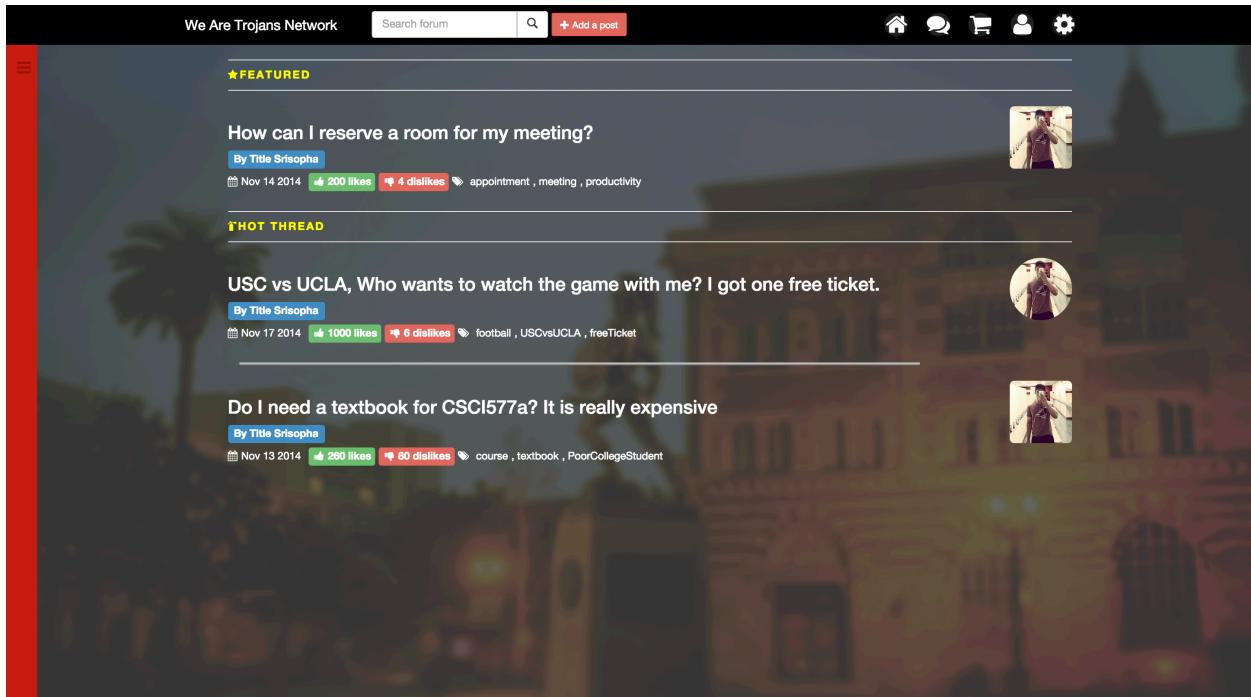


Figure 12: Forum Page (the menu on the right is hidden)

## 3.4 Prototype #4 User Survey

### 3.4.1 Purpose of the prototype

In this survey, we want to know if We Are Trojan (WAT) Network could help USC students on getting answer efficiently. We prepare ten questions to compare the ways how USC students get help currently and how We Are Trojan (WAT) Network could help them. Moreover, we want to know what USC students expect most in the We Are Trojan (WAT) Network. With this survey, we find concrete evidence to prove the concept of our system could solve users' problems and users would participate in the system.

### 3.4.2 Status of this prototype

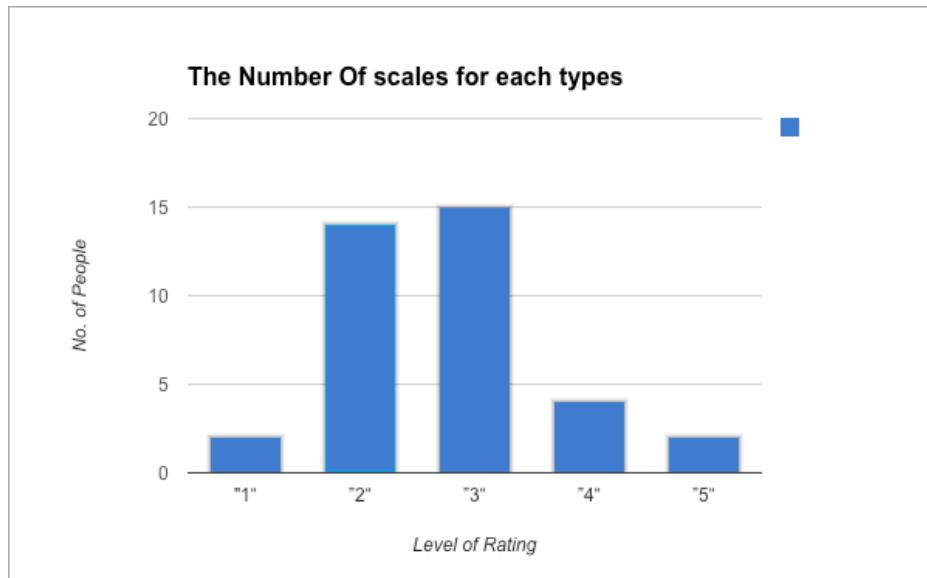
In this survey, the number of respondents is 37 and 70% of all respondents are graduate students. We obtained and analyzed the survey. The results are as followed.

A few points to note:

- The first two questions act as a problem setter. We want the respondents to see the problems regarding the current system they are currently using, and then we propose a solution.
- The two most important questions are question #x and #y in this survey. The result shows that users acknowledge the convenience that could be brought by WAT network and their interests to the system.

Question 1

***On a scale of 1-5 (with 5 being the hardest), how difficult is it to find answers to USC-related questions?***



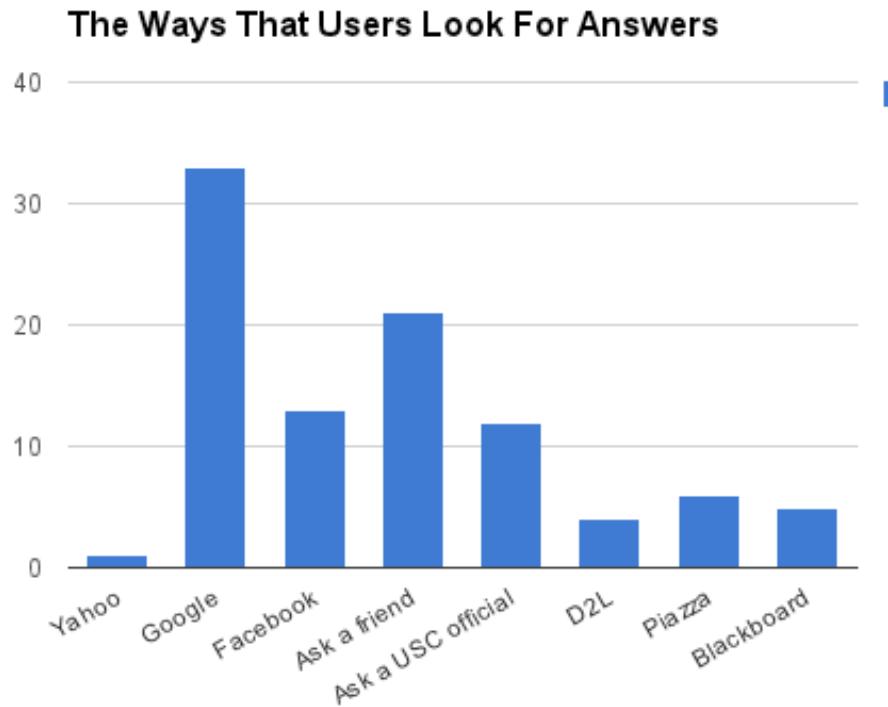
**Figure 13: survey question #1 result**

**The purpose of this question:**

the level of rating helps us to identify whether it is difficult for USC students to get information related to their queries.

Question 2

*How do you normally find answers to your USC-related questions?*



**Figure 14: Survey result of question #2**

**The purpose of these questions:**

To identify current sources that students are using to get information. Based on the result it can be concluded that there is not any common platform where students can get their queries answered. The system like D2L, Piazza and Blackboard are not used frequently by students to get their problem resolved.

## Question 3

*If there was a centralized forum providing credible information for Trojans, would you participate?*

The Percentage of People who will use WAT

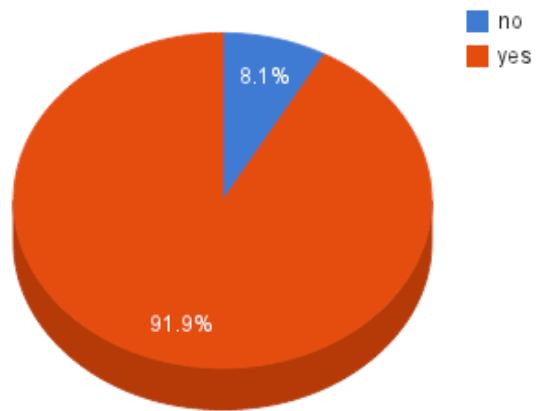


Figure 15: Survey result of question #3

**The purpose of this question:**

To identify if there is a demand for such a system, and the result clearly identifies that the system would be welcomed by the potential users.

## Question 4

*Would a system where you are awarded points for helping other Trojans increase your participation?*

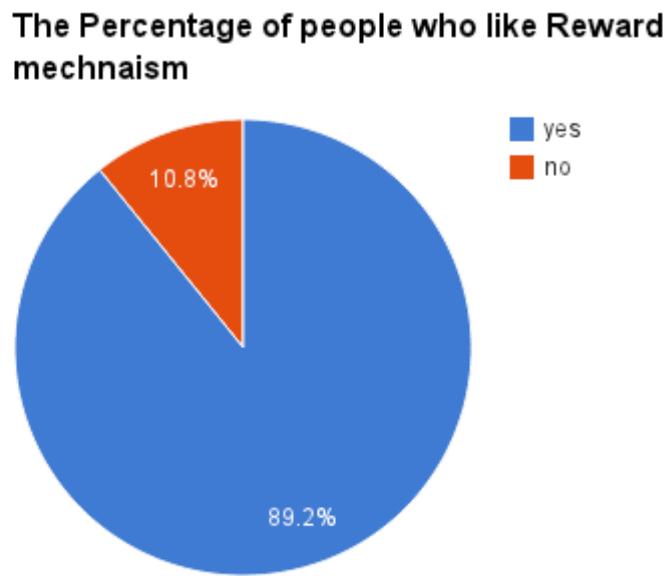


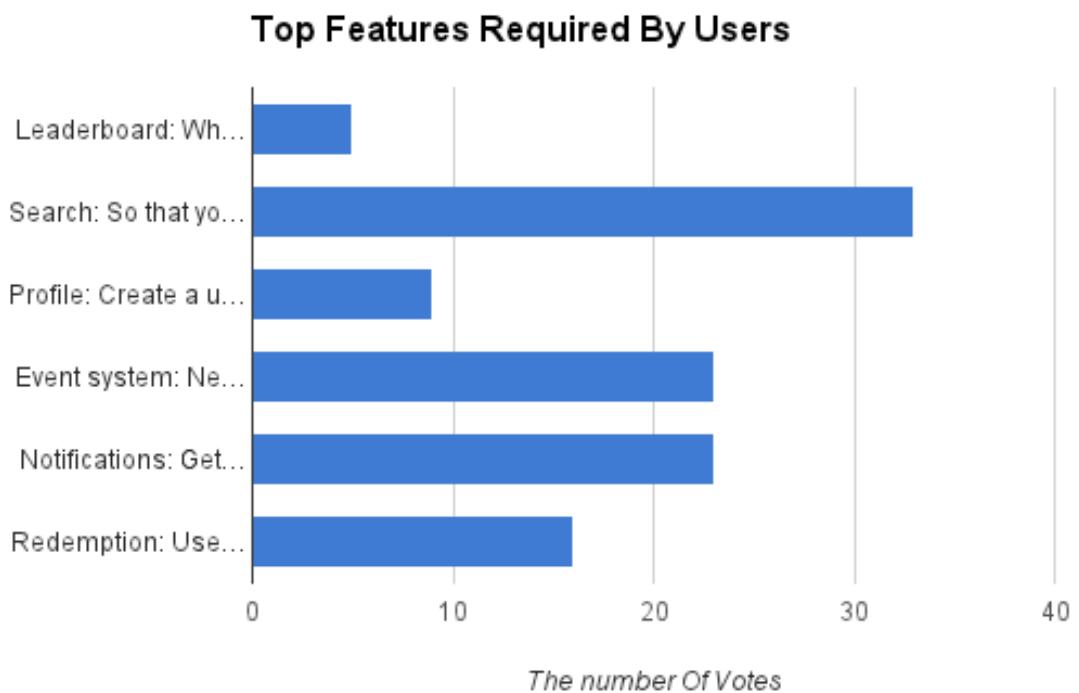
Figure 16: Survey result for question #4

**The purpose of this question:**

To find out if people are interested in WAT point system.

## Question 5

***Which three features do you find most important in such system?***



**Figure 17: Survey result for question #5**

Choices are:

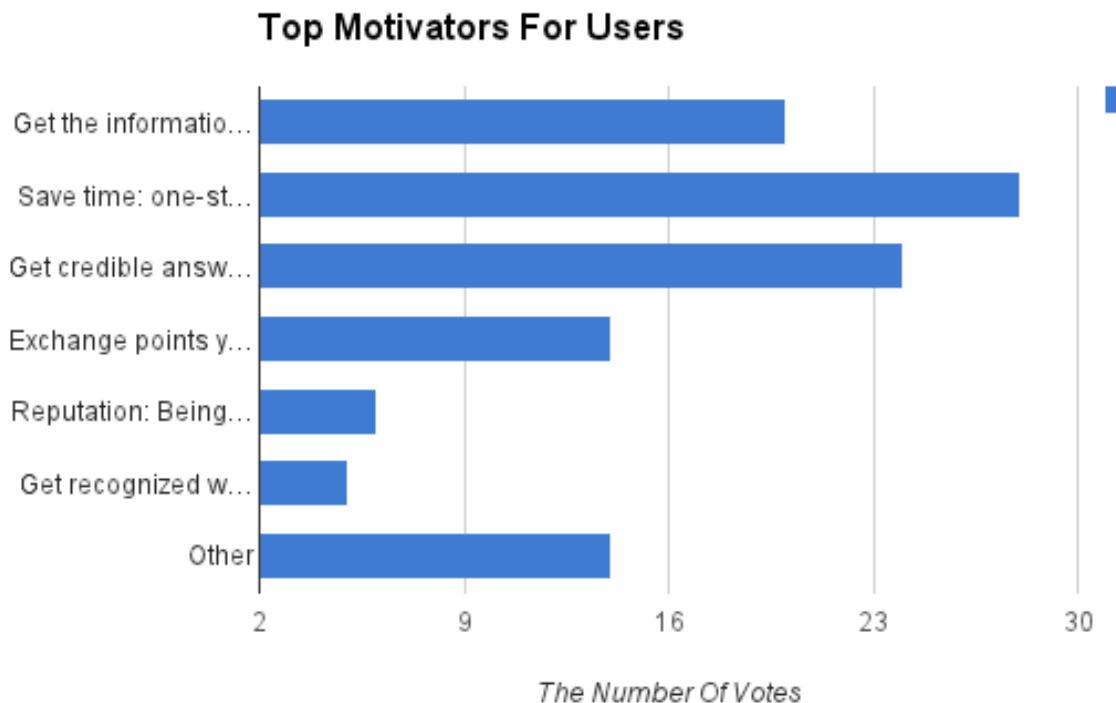
- 1). Leaderboard: Where you can see users with the most points so you can compare your points to theirs
- 2). Search: So that you can find information quickly in the forum
- 3). Profile: Create a user profile and see others' profiles
- 4). Event system: Newsfeed about campus events (such as career fair or technical talk)
- 5). Notifications: Get notifications about people answering your posts, etc.
- 6). Redemption: Use points you earned to redeem an item or a gift card

**The purpose of this question:**

To identify the most important features that the users will use in our system. We can prioritize our work based on this server.

## Question 6

***What will be the top three motivators for you to participate in such system?***



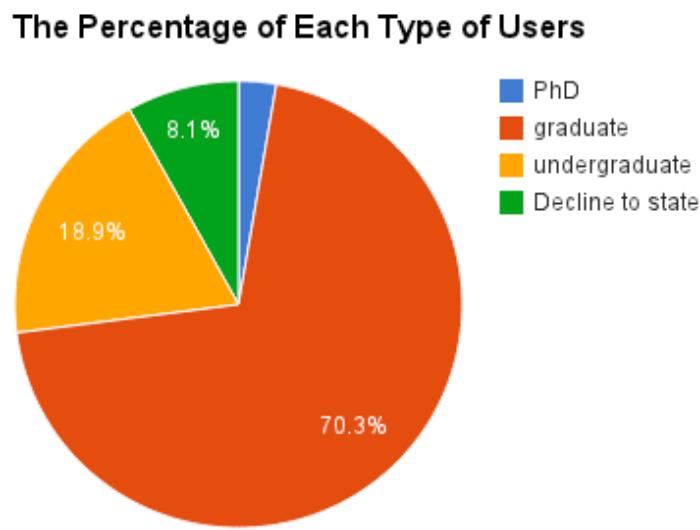
**Figure 18: Survey result for question #6**

Choices are:

- 1). Get the information about events on campus
- 2). Save time: one-stop shop to find information related to USC
- 3). Get credible answers to your specific questions from one platform/source rather than from multiple platform/sources
- 4). Exchange points you earned for an item or a gift card
- 5). Reputation: Being in top ranking in the leaderboard, by having higher point
- 6). Get recognized when your answer or your post provides useful information to others as a point
- 7). Other

## Question 7

***What is your current level of studies?***



**Figure 19: Survey result for question #7**

**The purpose of this question:**

To identify our priority audience and show that we take in consideration of all USC students' level of studies.