

# Prototype Report

**We Are Trojans (WAT) Network**

**Team #1**

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**10/13/2014**

# 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	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. Draft FCP for Valuation Phase</li></ul>
			<ul style="list-style-type: none"><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>

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# **1. Introduction**

## **1.1. Purpose of the prototype**

## **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. 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.

## 2. Navigation Flow

No Current Navigation Flow for We Are Trojan (WAT) Network.

## 3. 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 the 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 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.

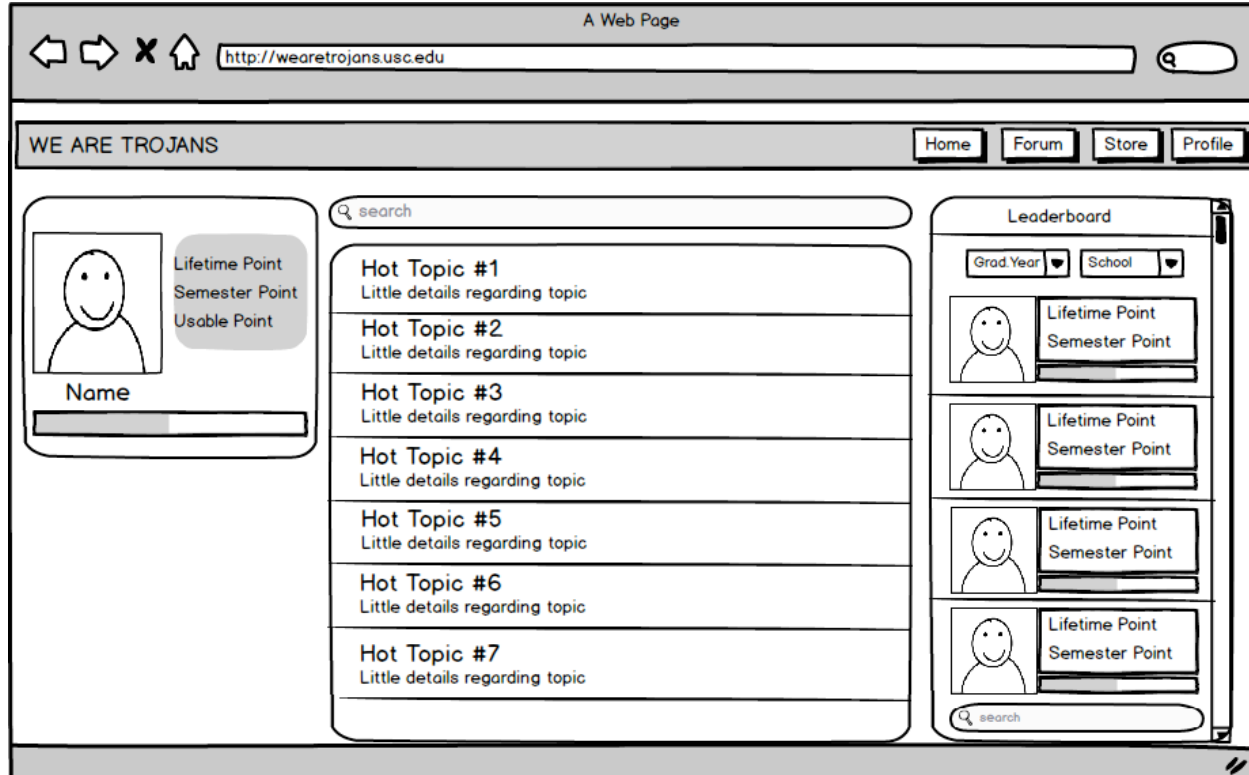
The design will also be beneficial for us to understand how the things need to be represented, and will enable us to prioritize development tasks. In this prototype we will use buying information methodology by demonstrating the user interface visually and getting feedback from client for risk mitigation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

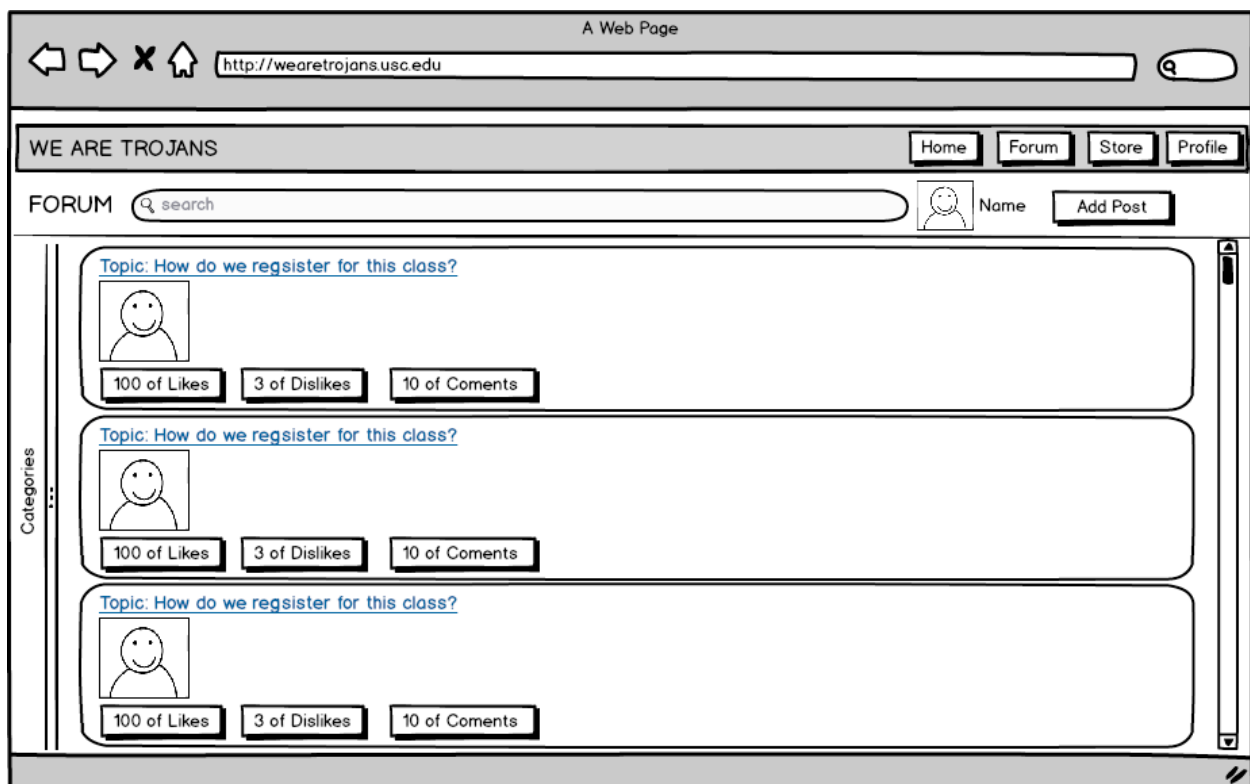
Description	This screenshot is of the <b>home page</b> of the “We Are Trojans (WAT) Network.”
Related Capability	<p>The home page should contain the following components:</p> <ul style="list-style-type: none"> <li>• Leaderboard</li> <li>• Notification System</li> <li>• User Profile</li> <li>• Main menu</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 Trojan (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 topics 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 1: Forum page**

**Table 3: Profile Page**

Description	<p>This screenshot is a prototype/wireframe of a <b>profile page</b> of “We Are Trojans (WAT) Network.”</p> <p>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.</p>
Related Capability	<p>The profile page should contain the following components:</p> <ul style="list-style-type: none"> <li>• Update Profile Functionality</li> <li>• Personal Wall (to post status / summary )</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	<p>The user can update their status, change password, and manage their account within this page.</p> <p>The user can also check his or her friends' profile page ( but of course, they can't update or post anything on others page)</p>

**Figure 4: Profile page**

## 3.2 Prototype #2 Point System

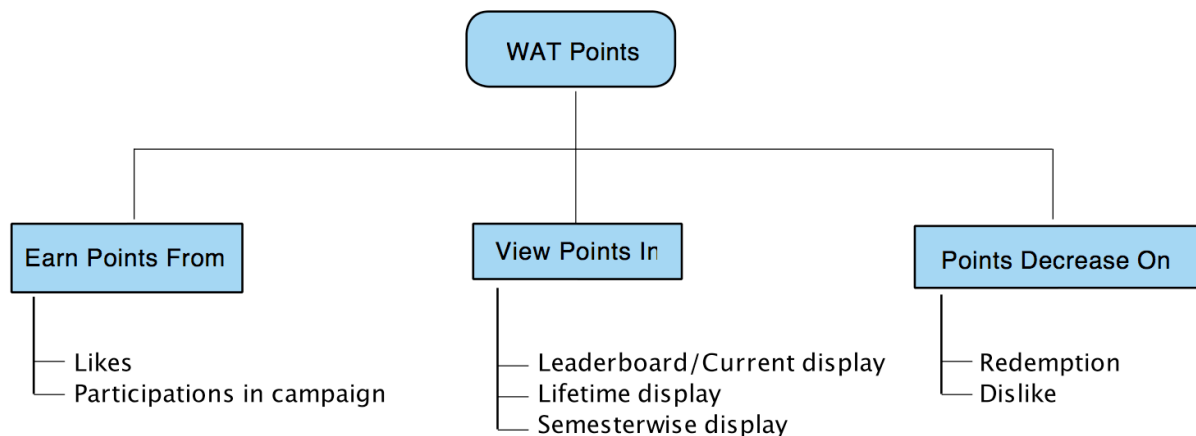
### 3.2.1 Purpose of the prototype

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 post. 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 Usuable Point
  - Redeem items from gifts store.



**Figure 4: Work-Breakdown Structure Specific to “WAT” Points Functionality**

### 3.2.3 Current Problems

In the WAT points system there are two 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 post can only contribute positively to a user’s points”—which mean a post 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 post 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 post point

Requirement: A post 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 5: Calculation of Post’s Points**

- 2). Monthly Point Update (solve problem 3)

Assumption:

After 1 month, a post score will be stable.

Procedure:

- 1). All point gain and lose of a post (from like and dislike) will be kept as “pending.”
- 2). The post point from #1 will be calculated only when **the post** is one month old.

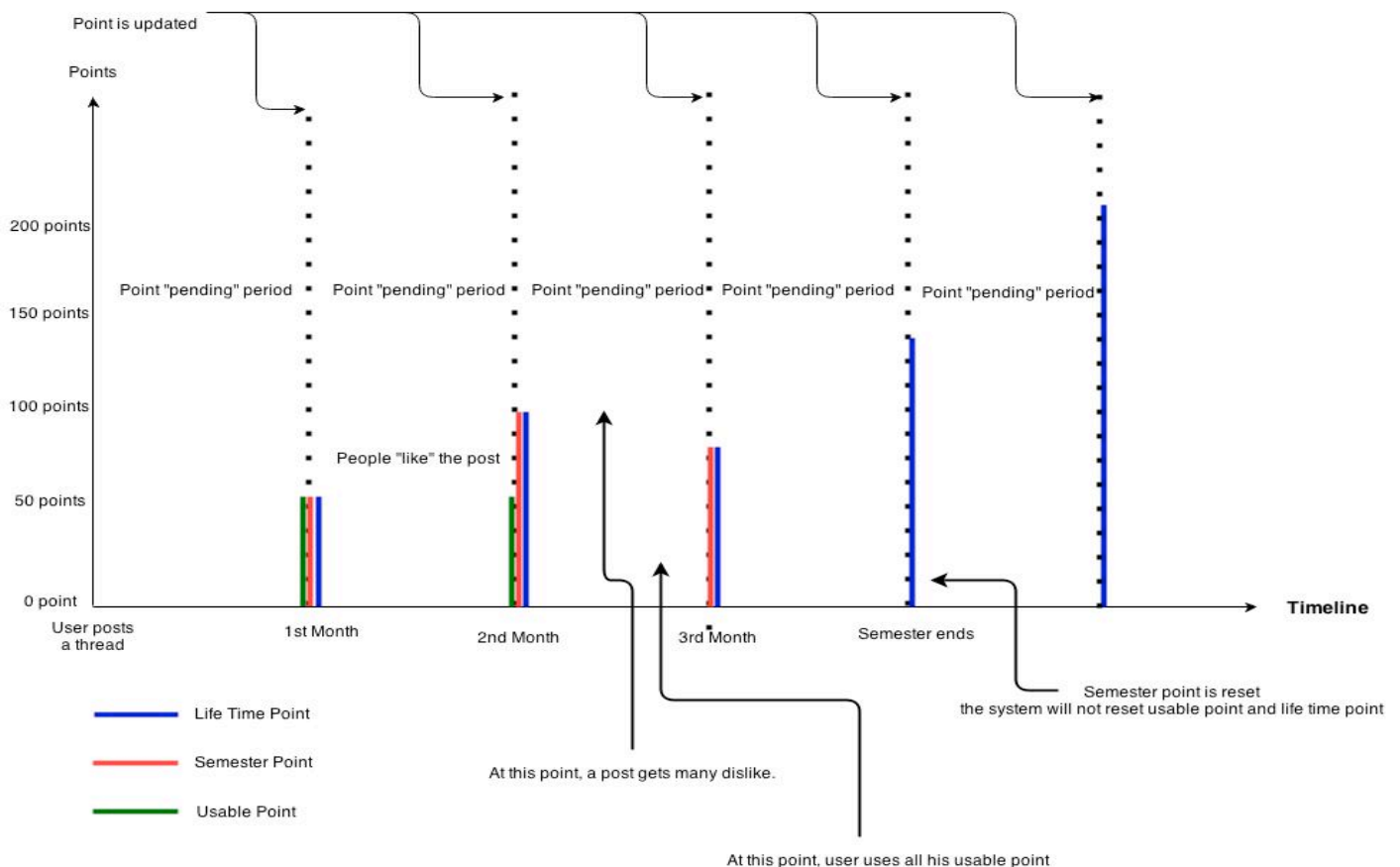
- 3.). At the time of calculation, the point will be added to the user's useable point, lifetime point, and semester point.
- 4). However, after the point is updated, that post score will no longer affect user's useable point. The point will still affect a user's lifetime point and semester point.

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

### **We propose 2 Alternatives (from the combination of 2 solutions mentioned at 3.2.4)**

**Alternative 1:** All points are updated 1 time each month. This basically means that all 3 points will get updated one time each month. (i.e. when a post is one month old (all points gathers that month will be added to the user's point at the end of the month). However, this approach might add a complexity to the database design since we need to keep track of when this particular "like" is stored in order to check which month it belongs to.

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



**Figure 6: Alternative #1 for monthly update mechanism**

**Alternative 2:** Only usable gets updated by monthly update mechanism, 2 others point gets updated every time someone likes or dislikes the post. 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 post gets a "like" and "dislike." This way we don't have to worry about knowing when the "like" is stored (reduce complexity, unlike in alternative #1)

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

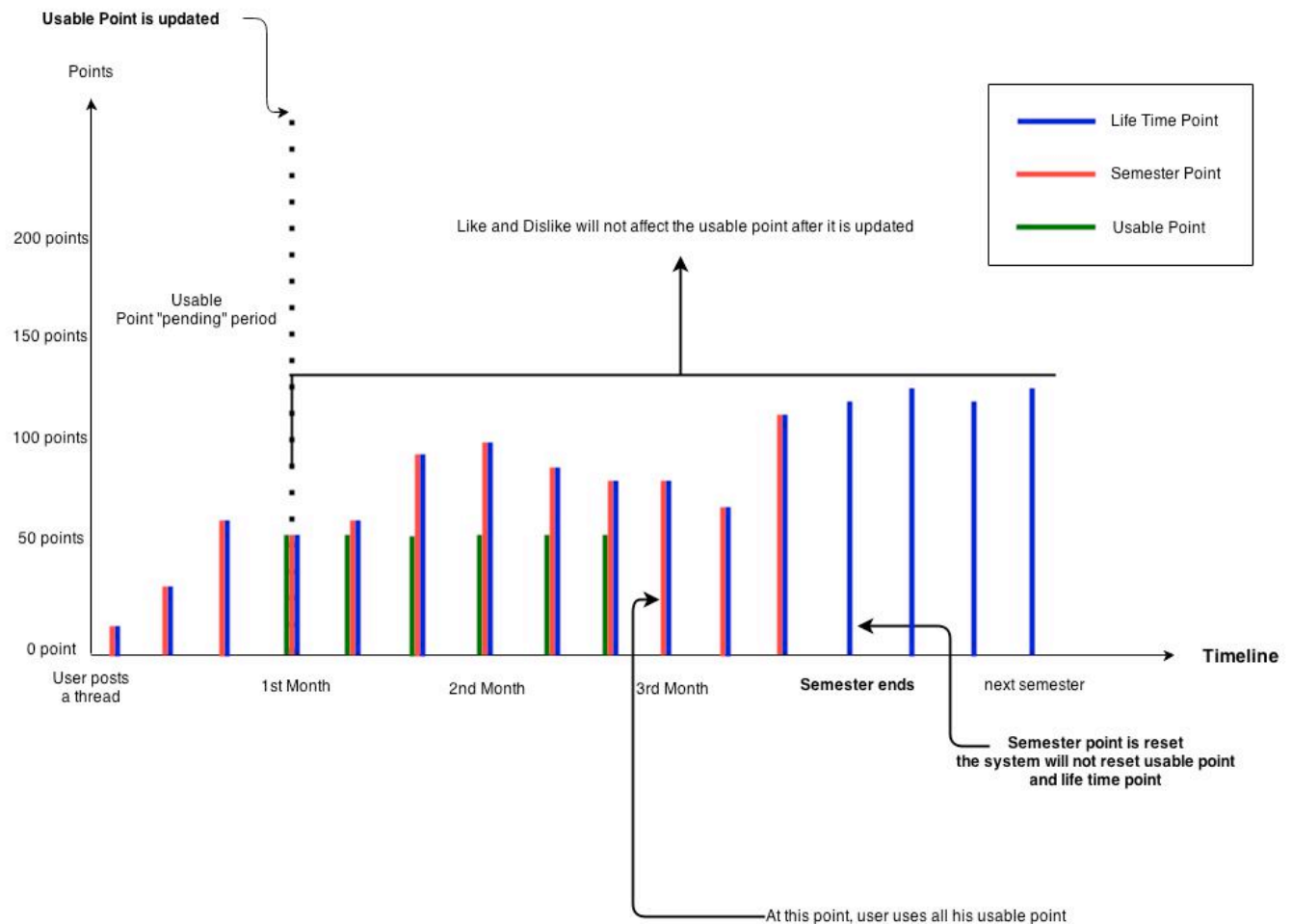


Figure 7: Alternative #2 for monthly update mechanism