MyTab

Increment III Report

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1 Scope

The aim of this project is to create a Phase 1 prototype web site for a start-up company. The prototype will be used for demonstration to potential investors and as a prototype of the user interface for the eventual production system.

The goal of MyTab.com is to provide web users with a "master account," through which they can access and navigate their many on-line accounts through a single, safe platform – eliminating the need to continually retype user-names and passwords as well as open new tabs inside their web browser to access accounts.

For the Phase I prototype, the scope has been revamped to target different accounts of Cornell University.As per our client's directives, MyTab will now be a subscription based application which can be contracted out to any organization that requires it. For the purpose of this project we will be working under the assumption that Cornell has contracted with MyTab as an account management vendor, thus eliminating any legal concerns.

The current and final scope of the project is to deliver a website which provides users with a master account and the provision to access their Piazza, Blackboard, CMS, Cornell StudentCenter, CCNet and MyGannett accounts from within the master account.

2 Current Progress

This increment mainly includes modularizing and decoupling the overall system architecture so as to make the application deployment feasible with minimal code changes for multiple clients. Other progress items include:

2.1 Inclusion of usage policy

As part of the current increment, we have added the following links to login/register page.
1. Terms and Conditions
2. Data Use Policy
3. Cookie Use

These pages provide information to the user, on the privacy policy and how the user input data is being used by our website.

2.2 Modifications to the home page

1. We have added functionalities to edit and delete the user's Cornell registered accounts to the MyTab page. The logged in user can edit or delete these accounts by single click on the buttons attached with the thumbnails.

2. The logged in user now has the option to change his login credentials using the Settings option present on the home-page.

3. The user would be notified of all his actions through email notification process.

2.3 User-input validations

1. We have implemented the client-side input validations to ensure clear, correct and useful data.

2. These validations include rules for the different user-input fields present on our website.

3. The user is notified if an invalid input is given by an error message, and the user is required to enter valid data while interacting with the website.

2.4 Security

As security is a critical aspect of this project, the website is using HTTPS protocol and SSL encryption for all data-transmission. The users are notified of each of these actions through e-mail notifications. This is done to discourage malicious access of the user accounts. Further, all the user-provided information is being encrypted before being stored, to prevent unauthorized access. As a part of secure application code, we are handling the cross-site scripting vulnerabilities and preventing sql injections. We are using AES encryption standards while storing the user-data in our databases. The security policies being implemented have been discussed as a separate section in detail.

2.5 Testing

The beta version of the website has been released and we are collecting the user feedback as part of user testing.

Besides, we have also done functional testing, link testing and compatibility testing of our website.

For the current implementation, the website is using VPS hosting provided by the godaddy.com, which is the world's largest web-hosting service provider. The currently supported browsers are Firefox and Chrome.

2.6 Analytics

In order to track the customers at our website, we have added google analytics and webmaster support for mytab. This will help us determining the number of users and their demographics.

3 Test Plan

3.1 Testing Objectives

MyTab.com is a website that allows users to access multiple accounts related to Cornell University using a single log-in. Since, we are aiming for a contract based website that institutions can implement for their students to access multiple accounts relevant to their institution we have tested the website thoroughly to ensure that it meets the expected quality requirements. We used different strategies on the features, functionality, security and usability of the website to discover bugs, design and security issues and fix them to provide a quality product.

3.2 Testing Scope

The URL: https://mytab.org is the web site under consideration for this test plan. As part of the website we are primarily testing the Login Page and the Main Page and all the features of the two pages.

3.3 Testing Strategies

The test plan contains a series of test cases under each of the following strategies:

a) Whiteboxtesting:
Testing was done on the internal structures and workings of the website and the implementation source code for programming bugs, control flows and code performance, optimization and reusability. We have used this strategy at the integration and system testing levels.

b) Blackboxtesting:
Testing was done on the functionality by providing different cases of inputs and testing if the behavior is as expected for each input.

3.4 Features Tested

The features of the website were thoroughly tested as per the various test cases included in the test plan classified by the approaches:
- Registration & Account Verification
- Password Reset
- Login and Logout
- Adding Accounts
- Accessing Accounts
- Editing and Deleting Account Credentials
- Navigating between Accounts
- Design & Layout
- Content

3.5Testing Approaches

The above strategies shall be tested on the following levels:

a) Integration testing:
The units were integrated and the working of integrated code modules , in this case , program written for each feature, was tested to ensure that the bug free units work together to fulfill their respective and behavior expected from them.

b) System testing:
All the code modules were integrated and the entire systems code was tested to ensure that the website's source code fulfills the expectations and behavior and supports all tasks.

c) Link Testing: All the links and anchors on MyTab.org were tested to ensure that the code for accessing all the pages and forms works correctly and the navigation is smooth.

d) Performance Testing : The website is being hosted on a server that we verified could support allow a large number of users . The performance of the features accessed within the website was tested.

e) CompatibiltyTesting : The website was thoroughly tested for all functionality on different browsers and the compatible and supported browsers were determined.

f) User Testing : The Beta version of mytab.org was released for an initial focus group to access and an intuitive survey covering the entire website's usage was provided. Responses to the survey have been collected and analyzed. Analytics and Webmaster tools have been used to keep track of user demographics and visitor information.

3.6 Test Requirements

Hardware:
We tested the website using Laptops and Computers with Internet Connectivity.

Software / Web Components:
PHPUnitTestFrameWork

Usage Tracker:
Google Analytics
Webmaster

3.7 Test Cases and Results

Test Case ID	Test Case	Result
LG_1	Verify that complete page is displayed correctly and no overlaps are present in any forms or images or buttons	Pass
LG_2	Validate that the color used for the whole page is the required blue (according to the client requirements)	Pass
LG_3	Verify that MyTab logo is displayed correctly	Pass
LG_4	Verify that MyTab logo is displayed in top left corner	Pass
LG_5	Verify that the color & size of the MyTab logo are appropriate according to the client's requirements	Pass
LG_6	Verify that the image showing the various sites offered is displayed to the left-center of the website and the text 'One Account. All of Cornell!' is displayed on top of it	Pass
LG_7	Verify that the image contains the logos of all the websites MyTab supports	Pass
LG_8	Validate that all fields of username, password, first name and last name are displayed correctly and the fields are empty	Pass
LG_9	Verify that the username and password are auto-populated in the login section if the username and password are saved in the browser	Pass
LG_10	Verify that the buttons of Login, forgot password and create account are displayed correctly	Pass
LG_11	Verify that the copyright message ©2013 MyTab Inc. is displayed at the bottom of the page	Pass
LG_12	Verify that the links of terms, data use policy, cookie use, about and contact are displayed and they are blue in color	Pass
LG_13	Verify that on clicking terms button, the terms and conditions page is displayed	Pass
LG_14	Verify that on clicking data use policy button, the data use policy page is displayed	Pass
LG_15	Verify that on clicking cookie use button, the cookie use page is displayed	Pass
LG_16	Verify that on clicking about button, the about page is displayed	Pass

LG_17	Verify that on clicking contact button, the contact page is displayed	Pass
LG_18	Verify that on clicking forgot password without entering any username or password, a forgot password dialog box requesting the first name, last name and user name should be displayed	Pass
LG_19	Verify that on clicking forgot password after entering a username and no password is entered, a forgot password dialog box requesting the first name, last name and user name to be entered should be displayed	Pass
LG_20	Verify that on clicking forgot password after entering a password and no username is entered, a forgot password dialog box requesting the first name, last name and user name to be entered should be displayed	Pass
LG_21	Verify that on clicking forgot password after entering a username and a password, a forgot password dialog box requesting the first name, last name and user name to be entered should be displayed	Pass
LG_22	Verify that on clicking forgot password & on display of forgot password dialog box, pressing cancel or close button should redirect to the login page	Pass
LG_23	Verify that on entering correct first name, correct last name and correct user name in forgot password dialog box and clicking Submit, an email should be sent to the user's email id	Pass
LG_24	Verify that if incorrect username or incorrect first name or incorrect last name are entered and submit button is clicked, a dialog box stating invalid credentials should be displayed	Pass
LG_25	Verify that on clicking OK in invalid credentials dialog box, user is redirected to the forgot password dialog box	Pass
LG_26	Verify that on entering invalid username format in forgot password dialog box, message saying that invalid username format should be displayed (possibly in red color)	Pass
LG_27	Verify that if first name is left empty in forgot password dialog box and Submit button is clicked, a message stating that please enter your first name should be displayed	Pass
LG_28	Verify that if last name is left empty in forgot password dialog box and Submit button is clicked, a message stating that please enter your last name should be displayed	Pass
LG_29	Verify that if username is left empty in forgot password dialog box and Submit button is clicked, a message stating that please enter your username should be displayed	Pass
LG_30	Verify that if more than one of the fields in forgot password dialog box are empty and Submit button is clicked, respective error	Pass

	messages should be displayed	
LG_31	Verify that on entering invalid email id in registration form, message saying that invalid email id should be displayed (possibly in red color)	Pass
LG_32	Verify that if an existing email id is entered in registration form and create account button is clicked; a message stating that username is already registered should be displayed	Pass
LG_33	Validate that minimum length of password in registration form is 6 characters	Pass
LG_34	Validate that maximum length of password in registration form is 40 characters	Pass
LG_35	Validate that the password in registration form has atleast 1 digit	Pass
LG_36	Verify that if first name is left empty in registration form and create account button is clicked, a message stating that please enter your first name should be displayed	Pass
LG_37	Verify that if last name is left empty in registration form and create account button is clicked, a message stating that please enter your last name should be displayed	Pass
LG_38	Verify that if email is left empty in registration form and create account button is clicked, a message stating that please enter your email should be displayed	Pass
LG_39	Verify that if password is left empty in registration form and create account button is clicked, a message stating that please enter your password should be displayed	Pass
LG_40	Verify that if more than one of the fields in registration form is empty and create account button is clicked; respective error messages should be displayed	Pass
LG_41	Verify that on entering first name, last name, valid email id and valid password and clicking on the create account button, the user should be sent a verification email and a message stating that verification email has been sent should be displayed	Pass
LG_42	Verify that on entering first name, last name, valid email id and valid password and clicking on the create account button, the database is updated with the new user's information	Pass
LG_43	Verify that if user tries to login with valid username and correct password but has not verified the email account, user should be displayed the message that you are a registered user & check your email for verification	Pass
LG_44	Verify that in login form if username is left empty and password is entered, on clicking Login a message stating that please enter your	Pass

	username should be displayed	
LG_45	Verify that in login form if password is left empty and username is entered, on clicking Login a message stating that please enter your password should be displayed	Pass
LG_46	Verify that in login form if both username and password are left empty, on clicking Login a message stating that please enter your username and password should be displayed	Pass
LG_47	Verify that on entering incorrect username and correct password and clicking on the login button, a message stating invalid credentials should be displayed	Pass
LG_48	Verify that on entering correct username and incorrect password and clicking on the login button, a message stating invalid credentials should be displayed	Pass
LG_49	Verify that on entering incorrect username and incorrect password and clicking on the login button, a message stating invalid credentials should be displayed	Pass
LG_50	Verify that on message stating invalid credentials being displayed, clicking on close or OK button should redirect to login page	Pass
LG_51	Verify that on entering correct username and correct password and clicking on the login button, the user's MyTab home page should open	Pass
HP_1	Verify that complete page is displayed correctly and no overlaps are present in any forms or images or buttons	Pass
HP_2	Validate that the color used for the whole page is the required blue (according to the client requirements)	Pass
HP_3	Verify that the Home button is at the top left of the page	Pass
HP_4	Verify that the Settings and logout buttons are at the top right of the page	Pass
HP_5	Verify that the Message "Hi First Name!" is displayed at left middle of the page	Pass
HP_6	Verify that the correct first name of the user is displayed in the "Hi First Name!" message	Pass
HP_7	Verify that the add account button is placed at the center of the page	Pass
HP_8	Verify that if no accounts are added by the user previously, there should not be a single account icon displayed	Pass
HP_9	Verify that if User has deleted all accounts previously, there should not be a single account icon displayed	Pass
HP_10	Verify that if user has added some accounts previously, the added account's icons are displayed	Pass
HP_11	Verify that if user has added some accounts previously, the accounts	Pass

	which are not added, their icons are not displayed	
HP_12	Verify that on clicking on logout, user is redirected to MyTab login page	Pass
HP_13	Verify that on clicking Setting, user is displayed the correct account credentials like username, first name and last name	Pass
HP_14	Verify that user can change firstname and save it	Pass
HP_15	Verify that user can change lastname and save it	Pass
HP_16	Verify that user can change password and save it	Pass
HP_17	Verify that user can change firstname, lastname& password and save them	Pass
HP_18	Verify that on changing credentials the database is updated with the new information	Pass
HP_19	Validate that on updating credentials, the updated first name of the user is displayed in the "Hi First Name!" message on MyTab home page	Pass
HP_20	Verify that on clicking Get Started button, icons of various Cornell accounts are displayed	Pass
HP_21	Verify that on clicking Get Started button, icons of various Cornell accounts that are not added already are displayed	Pass
HP_22	Verify that on clicking on CCNet account icon & entering credentials, the CCNet account icon is added to MyTab home page	Pass
HP_23	Verify that on clicking on Student center account icon & entering credentials, the Student center account icon is added to MyTab home page	Pass
HP_24	Verify that on clicking on Gannett account icon & entering credentials, the Gannett account icon is added to MyTab home page	Pass
HP_25	Verify that on clicking on Piazza account icon & entering credentials, the Piazza account icon is added to MyTab home page	Pass
HP_26	Verify that on clicking on CMS account icon & entering credentials, the CMS account icon is added to MyTab home page	Pass
HP_27	Verify that on clicking on Blackboard account icon & entering credentials, the Blackboard account icon is added to MyTab home page	Pass
HP_28	Verify that on not entering complete credentials and clicking add account, message stating username/password cannot be empty is displayed	Pass
HP_29	Verify that user's new account credentials are added to account information database	Pass
HP_30	Validate that edit account button is present next to the added account's icon	Fail

HP_31	Verify that user can edit/update account credentials for CCNet account	Pass
HP_32	Verify that user can edit/update account credentials for Student center account	Pass
HP_33	Verify that user can edit/update account credentials for Gannett account	Pass
HP_34	Verify that user can edit/update account credentials for Piazza account	Pass
HP_35	Verify that user can edit/update account credentials for CMS account	Pass
HP_36	Verify that user can edit/update account credentials for Blackboard account	Pass
HP_37	Verify that user's edited account credentials are added to account information database	Pass
HP_38	Validate that delete account button is present next to the added account's icon	Fail
HP_39	Verify that user can delete CCNet account by clicking on the delete button	Pass
HP_40	Verify that user can delete Student Center account by clicking on the delete button	Pass
HP_41	Verify that user can delete Gannett account by clicking on the delete button	Pass
HP_42	Verify that user can delete Piazza account by clicking on the delete button	Pass
HP_43	Verify that user can delete CMS account by clicking on the delete button	Pass
HP_44	Verify that user can delete Blackboard account by clicking on the delete button	Pass
HP_45	Verify that user's deleted account credentials are cleared from the account information database	Pass
HP_46	Verify that on clicking CCNet account icon, CCNet website opens in same tab and the name 'CCNet' is displayed on the header	Pass
HP_47	Verify that on clicking Student Center account icon, Student Center website opens in same tab and the name 'Student Center' is displayed on the header	Pass
HP_48	Verify that on clicking Gannett account icon, Gannett website opens in same tab and the name 'Gannett' is displayed on the header	Pass
HP_49	Verify that on clicking Piazza account icon, Piazza website opens in same tab and the name 'Piazza' is displayed on the header	Pass
HP_50	Verify that on clicking CMS account icon, CMS website opens in	Pass

	same tab and the name 'CMS' is displayed on the header	
HP_51	Verify that on clicking Blackboard account icon, Blackboard website opens in same tab and the name 'Blackboard' is displayed on the header	Fail
HP_52	Verify that on clicking Home button, user is redirected to the MyTab home page	Pass
HP_53	Verify that on clicking on an account name on the header, user is redirected to that account	Pass
HP_54	Verify that on clicking right arrow, user is redirected to the site on the right as per the header	Pass
HP_55	Verify that on clicking left arrow, user is redirected to the site on the left as per the header	Pass
HP_56	Verify that on clicking right arrow, user is redirected to the home page if user is on the rightmost site on the header	Pass
HP_57	Verify that on clicking left arrow, user is redirected to the home page if user is on the leftmost site on the header	Pass
HP_58	Verify that on clicking right arrow, user is redirected to the home page if user is using only one account in MyTab	Pass
HP_59	Verify that on clicking left arrow, user is redirected to the home page if user is using only one account in MyTab	Pass
HP_60	Verify that the CCNet account gets removed from the header when user deletes the account	Pass
HP_61	Verify that the Student center account gets removed from the header when user deletes the account	Pass
HP_62	Verify that the Gannett account gets removed from the header when user deletes the account	Pass
HP_63	Verify that the Piazza account gets removed from the header when user deletes the account	Pass
HP_64	Verify that the CMS account gets removed from the header when user deletes the account	Pass
HP_65	Verify that the Blackboard account gets removed from the header when user deletes the account	Pass
HP_66	Verify that user is sent an email when a new Cornell account is added to MyTab home page	Pass
HP_67	Verify that user is sent an email when a Cornell account credentials are updated	Pass
HP_68	Verify that user is sent an email when a Cornell account is deleted from the MyTab home page	Pass
HP_69	Verify that user is sent an email when MyTab account credentials are updated	Pass

WS_1	Repeat above test cases for all browsers to test compatibility	Pass

4 User Testing

4.1 Overview

The beta version of the website https://mytab.org has been tested. The users who tested include technical and non-technical users from Cornell community.

4.2 Test Objectives

a) To test the user interface of the systems for any errors and usability issues.
b) To check the working of the functionality of the system like creating a MyTab account, logging into the system, adding new accounts, accessing the added accounts and editing/deleting the added accounts.

4.3 Method

a)Participants

The total number of participants involved in testing the website – 24
The segmentation of the participants can be widely classified into technical and non-technical users. The technical users included the students and faculty from the engineering school. The non-technical users included the students from business and hotel management schools.

b)Process

The participants were sent an email that included the web address, survey link, brief description of capabilities of the website, features and also steps to troubleshoot in case any situation arises.

c)Survey Questions:

The survey sent out to the users included the following questions:

1) What do you do at Cornell? – To get an understanding of the user.
2) Where did you access MyTab.org from? – To understand the network of the user and to analyze if any problems are faced in a particular environment.
3) Which Web Browser did you use to access MyTab.org? – To understand the most popular browsers that users use and analyze if any problems are faced in a particular browser.
Questions on ratings are all on a scale of 1-5 with 1 being poor and 5 being excellent
4) How would you rate your overall experience of using MyTab.org? – To understand the user's experience with MyTab.org
5) How would you rate the design and colors of MyTab.org? – To understand the user's feel for the colors and design used in the website.
6) How would you rate the layout and organization of MyTab.org? - To understand the user's feel for the layout and organization of the website.
7) How would you rate the navigability of MyTab.org? – To understand the user's feel

for the flow of actions in the website

8) Were you able to perform all the actions or functions you wanted to perform using MyTab.org? – To understand if any actions have been difficult to perform for the user.
9) Was the site easy to use? – To understand the user's experience of the ease of use of the system.
10) Does the site meet your needs or solve any problem you face while using multiple accounts? – Do understand how well the website helps the users.
The survey included the following optional questions to gather more detailed feedback from the users.
What did you like the most about MyTab.org? – To understand the user's most favorite parts of the website.
What did you dislike the most about MyTab.org? – To understand the features not particularly liked by the user which can be changed if many users feel the same.
Is there anything you would like to change about the website? – To gain feedback on things the users would like to see differently in the website.
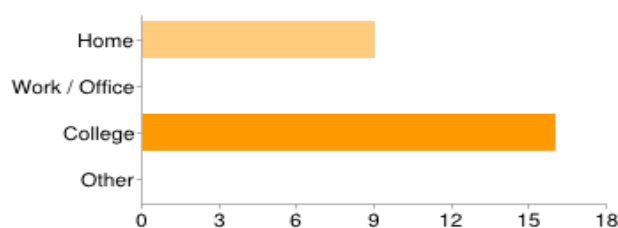
4.4 Results

The overall results were mostly favorable as can be seen from the results that follow. The site is ready to be launched in a full-fledged manner and promises a rich, good quality and secure user experience.
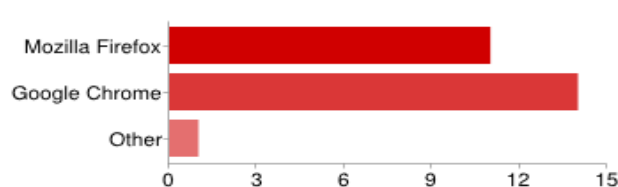
What do you do at Cornell ?

Undergrad Student	2	9%
Graduate / PhD Student	20	91%
Faculty / Staff	0	0%
Other	0	0%

Where did you access MyTab.org from ?

Home	9	36%
Work / Office	0	0%
College	16	64%
Other	0	0%

Which Web Browser did you use to access MyTab.org?

Mozilla Firefox	11	42%
Google Chrome	14	54%
Other	1	4%

How would you rate your overall experience of using MyTab.org ?
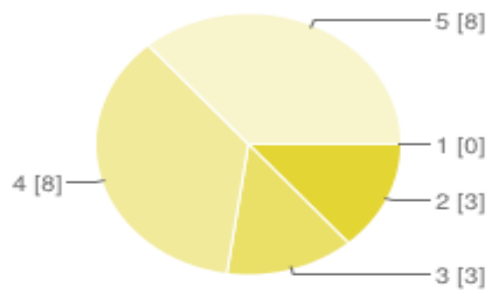
1	0	0%
2	3	14%
3	3	14%
4	8	36%
5	8	36%

How would you rate the design and colors of MyTab.org ?
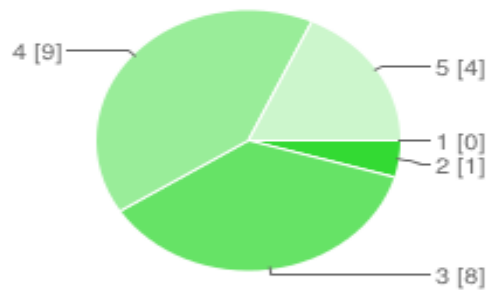
1	0	0%
2	1	5%
3	8	36%
4	9	41%
5	4	18%

How would you rate the layout and organisation of MyTab.org ?
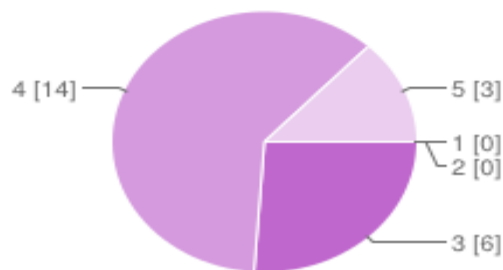
1	0	0%
2	0	0%
3	6	26%
4	14	61%
5	3	13%

How would you rate the navigability of MyTab.org ?
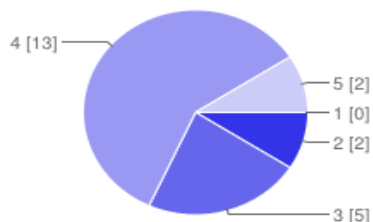
1	0	0%
2	2	9%
3	5	23%
4	13	59%
5	2	9%

Where you able to perform all the actions or functions you wanted to perform using MyTab.org ?
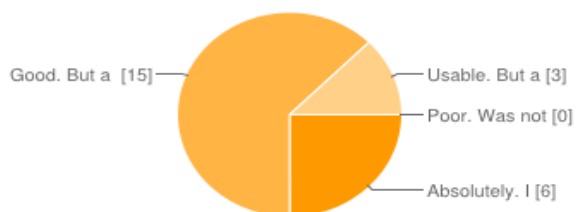

Absolutely. I could do everything I wanted.	6	25%
Good. But a few glitches here and there.	15	63%
Usable. But a lot of things need to be improved.	3	13%
Poor. Was not able to use even for basic work.	0	0%

Was the site easy to use ?
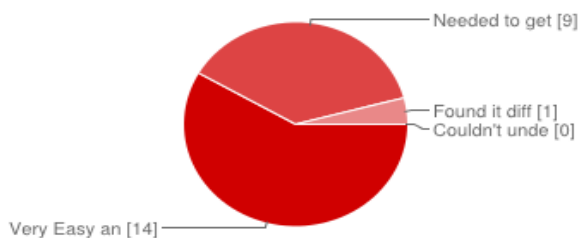
Very Easy and Convenient from the start	14	58%
Needed to get familiar first but convenient after	9	38%
Found it difficult to use	1	4%
Couldn't understand a thing !	0	0%

Does the site meet your needs or solve any problem you face while using multiple accounts ?
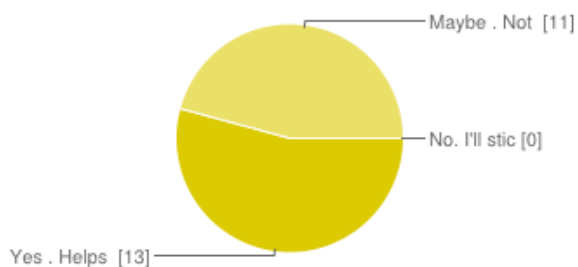
Yes . Helps a lot !	13	54%
Maybe . Not sure how it'll help	11	46%
No. I'll stick to the old way	0	0%

Some of the comments that we received:

What did you like the most about MyTab.org ?

need not remember passwords anymore   Good job...!!   The responsiveness of the site   design and colors   I can access multiple accounts through one website . I liked it !!   UI looks good.   New idea to integrate Cornell accounts on a single site just like Google accounts   Enables ease of use

What did you dislike the most about MyTab.org ?

sometimes it takes more time to load the pages   wsedfghjkl;   Nothing as of now .   Some of the usual keyboard events are not supported   The navigation   Make the UI more intuitive   Was getting some random messages while navigating like 'undefined'. No idea why?

Is there anything you would like to change about the website ?

I logged in to Cornell Blackboard and Cornell Student Centre . I could access Cornell Blackboard but could not access the Student Centre .   I would like it to be more organized   Add social networking sites   Login page colors can be changed to make sure it doesn't look like a Facebook rip off   Main Page looks similar to Facebook   Little for easy to use   Color Scheme throughout could be changed.   Probably some more funtionalities

5 Future Progress

5.1 Acceptance Testing

The team will run a final round of acceptance testing with the client by running all the scenarios initially discussed against the final system and make any needed changes after receiving the feedback. Major changes are not anticipated during this testing as the progress has been closely monitored by the client at every phase and the design and functionality have been developed according to the client's needs.

5.2 Final delivery

The team will make the final delivery of the project to the client which includes the source code, test plans, test reports, documentation and the web application as requested by the client. The documentation includes requirements, system and program design, presentation slides all updated to the current system. The documentation will also include a user manual and a copy of the license which has all the terms initially agreed upon by the client and the MyTab development team.

The team is hoping to deliver the project with adequate documentation which will make the future maintenance of the application easy.

6 Appendix

A Technical Troubleshooting encountered for User Testing

(i) Troubleshooting for Firefox

Even though our website is secured and runs in SSL, some of the accounts that we support do not run on HTTPS, for this reason Firefox blocks them. It is to be noted that this is not a security concern created byMyTab perspective.

To make these accounts work, look for the shield icon in you address bar.Upon clicking it and then clicking the arrow button on "Keep Blocking" dropdown, the instruction "Disable protection on this page" will be displayed. Clicking on this, will allow loading the HTTP script from other websites. Below is the illustrated diagram for your convenience.


Also, the pop-up blocker needs to be displayed which can be done by clicking on Options in the top yellow bar, as we are showing websites in new tab when required. Below is a picture which can help you.

(ii) Troubleshooting for Chrome

Similarly to enable non-https accounts on Chrome, look for the shield icon in your address bar, on the right hand side. Upon clicking this icon you will see the below instruction.
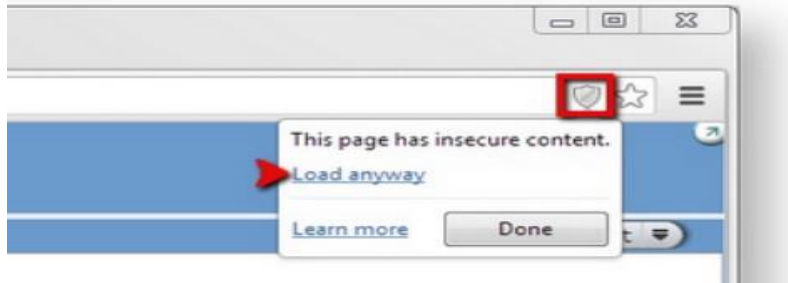
Now please click on "Load unsafe script" or "Load Anyway" to enable the non-https accounts also in your MyTab account.

To enable pop-ups - Click on the pop-up blocker icon in the address bar and select allow pop-ups from mytab.org.