

Testing Report

RoboNews.com

"Your Source For Robotics Coverage"

Client

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1. Introduction

RoboNews.com, is similar to any website with the potential to receive large amounts of user traffic and significant amounts of data, must be thoroughly tested to ensure stability, expose flaws in the system, and ensure the best possible experience for the user.

1.1 Purpose of This Document

This document is intended for system administrators, quality assurance teams, and other users interested in reviewing the test procedure used for the development of the first iteration of this product. This report will define and analyze the testing process and describe the results.

1.2 References

Use cases from the System Requirements Specifications (SRS) document.

2. Testing Process

2.1 Description

Use cases as outlined by the System Requirements Specifications document are the basis for which each particular spiral are thoroughly tested. Team members contributed various other use cases, test methods, and outlined potential implementations issues that could potentially arise.

Testing was done in a variety of methods, from the standard individual unit testing to white box testing and eventually to black box, user driven testing. Individual units were thoroughly tested with every possible potential outcome and misuse in mind. Upon successfully completing rigorous individual unit testing, integration testing commenced to ensure that modules worked together as intended.

2.2 Testing Sessions

Test Number	Date	Location	Time Started	Time Ended	Performed By	Use Cases
S1A S1B	2/27/2013	Home	9:30 PM	11:00 PM	Sven Rivera	<ul style="list-style-type: none"> • User Login • Admin Login • Navigating Links
S2A S2B	3/30/2013	Home	3:00 PM	4:30 PM	Sven Rivera	<ul style="list-style-type: none"> • Tag Search • Navigating the website
S2C	4/3/2013	UMBC	7:00 PM	8:00 PM	Sven Rivera	<ul style="list-style-type: none"> • Search Auto Complete
S3A	4/13/13	Home	9:30 PM	10:30 PM	Sven Rivera	<ul style="list-style-type: none"> • Submitting an Article
S3B	4/17/13	UMBC	4:30 PM	5:30 PM	Sven Rivera	<ul style="list-style-type: none"> • Most Viewed Column and Navigation
S3C	4/25/13	UMBC	8:00 PM	9:00 PM	Sven Rivera	<ul style="list-style-type: none"> • Rating System
S3D	4/29/13	Home	10:00 PM	11:00 PM	Sven Rivera	<ul style="list-style-type: none"> • Viewing and Editing

2.3 Impressions of the Process

The testing process was overall very effective in this particular spiral. The combined usage of regular “expected” use of the website combined with a more erratic, error prone approach to testing produced a very good picture of the strengths and weaknesses of the website. For having just set up the skeleton of the website with minimal functionality, the website functions quite well and effectively implements the create username, login and limited navigational button interface that the website offers at this time.

The strongest component of the website as of this spiral is the user and administrator login. User login creation is very straightforward and correctly communicates with the database in both creating and fetching use data and checking it for correct login information. The weakest portion of the website at the moment is the navigational links. At the moment, though they are displayed, lead to errors upon clicking them , and also do not allow the user to log off. Detailed information about individual modules follow below.

3. Test Results

Testing was conducted using a series of typical use cases and small variations of them that would not be outside the boundaries of normal use. In addition, non-standard boundary conditions were also tested in order to ensure that the website properly handles invalid situations that could possibly result in improper website functionality.

3.1 Testing Suite

The table below outlines and describes each particular use case and their respective boundary conditions, valid and invalid inputs. Results normally fell within expected outcomes but issues were discovered with the password confirmation portion of the username creation module. Navigation also posed issues in sections of the website that had not yet been fully developed. The majority of the basic login and account creation features worked flawlessly.

S1A

Use Case	<i>Create User Login</i>
Valid Situation	User creates a login consisting of a username, password and retype the password for confirmation.
Invalid Situation	<ol style="list-style-type: none">1. User enters a blank username or password upon creation.2. User enters their username with varying upper and lower case letters differing from their original username.3. User enters a non-matching password when asked to confirm it during account creation
Purpose	To ensure that users can create logins under the right conditions.
Expected Results for Valid Situation	The username and password is created and properly stored in the sql database and properly confirms the retyped password confirmation.
Expected Results for Invalid Situation	<ol style="list-style-type: none">1. The website will reject the blank entry and reprompt them for a username or password.2. Mixed case username should be accepted3. Non-Matching passwords should be rejected and re-prompted
Issues/bugs Found	<ol style="list-style-type: none">1. Creating a non-mixed case username but attempting to login with mixed case (i.e. John123 but inputting jOhn123) results in an error2. Entering a password but leaving the confirm password blank does not result in an error and allows a user to successfully create an account

S1B

Use Case	<i>Navigating the Website</i>
Valid Situation	1. Clicking on a variety of different links results in appropriate page or information being displayed. 2. Clicking the back button after logging in
Invalid Situation	Clicking on a non-functioning portion of the website.
Purpose	To test how the website handles navigating between links and buttons that are currently developed and functioning (such as create login) or buttons that currently do not have a purpose
Expected Results for Valid Situation	1. The website takes you to the appropriate page and correctly displays the information and content.
Expected Results for Invalid Situation	The website will inform the user that the page they requested is not currently available.
Issues/bugs Found	1. Clicking on an invalid link does not gracefully inform the user that the particular page they are attempting to navigate to is not completed, but rather gives a standard, non-descriptive error.

S2A

Use Case	<i>Tag Search</i>
Valid Situation	<ol style="list-style-type: none"> 1. Clicking on the search bar and entering a desired tag search term 2. Entering nothing in the search box
Invalid Situation	The user enters garbage (random strings of numbers and characters into the search term)
Purpose	To test how the website allows the user to search for robot news links either through submitter defined tags and simultaneously through looking through the actual user submitted review of the link.
Expected Results for Valid Situation	<ol style="list-style-type: none"> 1. The website displays the results of the user's search term looking through both tags and the link's review, displaying an image of the link, the review, and a hyperlink allowing them to navigate to that site. 2. The search box lists and auto completes tags as the user enters them. 3. The website displays all links in order of most to least recently submitted.
Expected Results for Invalid Situation	The website will not display any search results but will not give an error.
Issues/bugs Found	<ol style="list-style-type: none"> 1. Regardless of whether an appropriate and valid search or blank search is entered into the search field, it still displays "Pages of search results will go here!"

S2B

Use Case	<i>Navigating the Website</i>
Valid Situation	<ol style="list-style-type: none">1. Clicking on a search result or on an article link from the list of most recent articles2. Logging into an account3. Logging out of an account
Invalid Situation	<ol style="list-style-type: none">1. Entering in an invalid username or password
Purpose	To test how the website handles navigating between links and buttons that are currently developed and functioning (such as create login) or buttons that currently do not have a purpose
Expected Results for Valid Situation	<ol style="list-style-type: none">1. The website will take you to the external link that was clicked on and properly display the article contents.2. Logging in will hide the login information sidebar and display the logout button in it's place.3. The user will be logged out and will redisplay the login form on the right side of the page.
Expected Results for Invalid Situation	The website will inform the user that they entered an invalid username/password and reprompt them.
Issues/bugs Found	<ol style="list-style-type: none">1. Successfully logging in causes the page to go to a blank page that informs the user that they have successfully logged in, but forces the user to have to hit the back button to view the page.2. Entering an invalid

	password/username will take the user to another blank page that informs them of the invalid entry, but forces them to have to click the back button to return.
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S2C

Use Case	<i>Search Auto Complete</i>
Valid Situation	1. Enter partial search terms to see a whole list of possible tag options
Invalid Situation	1. The user enters garbage (random strings of numbers and characters into the search term)
Purpose	To see how the website allows the user to enter in partial search terms and return to the user a wide range of completed tag search terms without actually clicking the search button.
Expected Results for Valid Situation	1. The website will display all tags that somewhere contain the portions of text that the user is still entering (i.e. 'Na' could display 'NASA' and 'nautical').
Expected Results for Invalid Situation	The website will not display any partial search terms but will also not cause any error.
Issues/bugs Found	Works exactly as intended

S3A

Use Case	<i>Submitting an Article</i>
Valid Situation	1. The user enters valid data in each column 2. Adding a valid website adds it to the most recently submitted links
Invalid Situation	1. The user enters garbage (random characters) for any portion of the submission input
Purpose	To view the results of adding a user link submission and view the results of adding a link on the main page
Expected Results for Valid Situation	1. The user's submission will show up on the main page as a newly added article that can be voted on and viewed
Expected Results for Invalid Situation	The website validates input from the user's submission
Issues/bugs Found	Even if an invalid URL is entered or image URL, it still shows up on the main page (this is alleviated by editing it in the view submissions tab)

S3B

Use Case	<i>Most Viewed Column and Navigation</i>
Valid Situation	1. Having user visit the same page

	multiple times to make a site get added to the most viewed column 2. Navigating between links and features
Invalid Situation	1. The user attempts to access logged in user only portions of the site
Purpose	To see how the website allows the user to navigate different common features as both a logged in user and not logged in, and ensuring that appropriate features for non logged in users are blocked
Expected Results for Valid Situation	1. Multiple users viewing the same link will eventually add it to the most viewed links column 2. The user is able to navigate any portion of the site smoothly without error
Expected Results for Invalid Situation	The website will prevent non logged in users from accessing content for logged in users.
Issues/bugs Found	Works smoothly as intended

S3C

Use Case	<i>Rating System</i>
Valid Situation	1. The user thumbs up or down a link 2. The navigates through the most highly rated articles and clicks one
Invalid Situation	1. Clicking the thumbs up or down arrow multiple times 2. Trying to thumbs up or down a link while not logged in

Purpose	To check how the the website handles a logged in user's thumbs up and down ratings for a link and how it affects what the top articles listed are.
Expected Results for Valid Situation	<ol style="list-style-type: none"> 1. The website will allow the user to thumbs up a link or down which will display new, most popular links on the right side of the screen. 2. Clicking on a link will navigate the user to that link and returning from that link will not cause any errors.
Expected Results for Invalid Situation	<ol style="list-style-type: none"> 1. The website will prevent the user from upvoting a link or down voting a link multiple times 2. The website will not display the option to up or down vote a lin
Issues/bugs Found	Clicking a link on the most recent submissions, and pressing the back button twice navigates the user to an entirely different website.

S3D

Use Case	<i>Viewing And Editing Submissions</i>
Valid Situation	<ol style="list-style-type: none"> 1. Clicking on the view submissions page and navigating it 2. Navigating all of the user's submitted links and editing them
Invalid Situation	<ol style="list-style-type: none"> 1. The user edits a proper link submission and replaces it with invalid

	input
Purpose	To allow the user to edit content they've submitted in the situation where they want to update their review of a link or change a link that was invalidly submitted.
Expected Results for Valid Situation	1. The website will list a personalized version of the website with all links submitted by the user displaying in chronological order. 2. The edited link's new data will display properly
Expected Results for Invalid Situation	1. The invalid data will display
Issues/bugs Found	All features work properly and editing submission errors corrects any submission problems

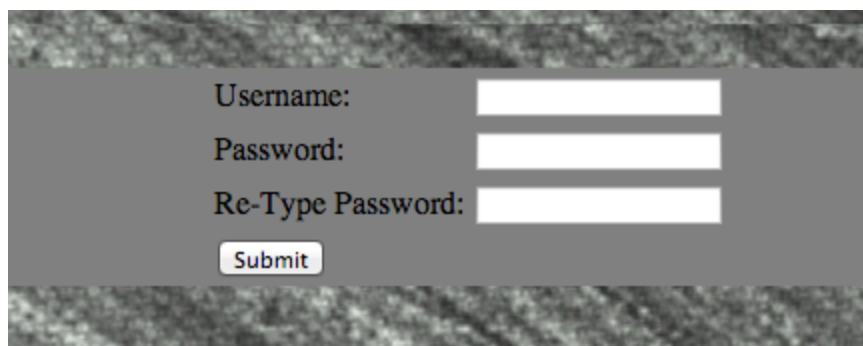
3.2 Test Results

The results from testing are outlined in the images below.

S1A Use Case: Creating a user login

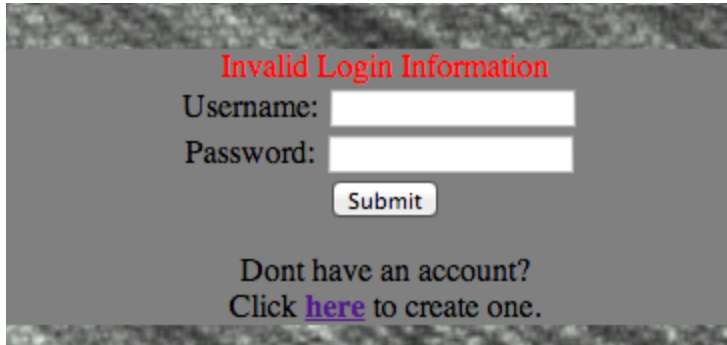
Performed By: Sven Rivera

1. Clicking on create user login correctly navigates and displays the login creation portion of the site.



A screenshot of a web form for creating a user login. The form is set against a dark, textured background. It contains three text input fields stacked vertically, each preceded by a label: 'Username:', 'Password:', and 'Re-Type Password:'. Below these fields is a small, light-colored button with the text 'Submit'.

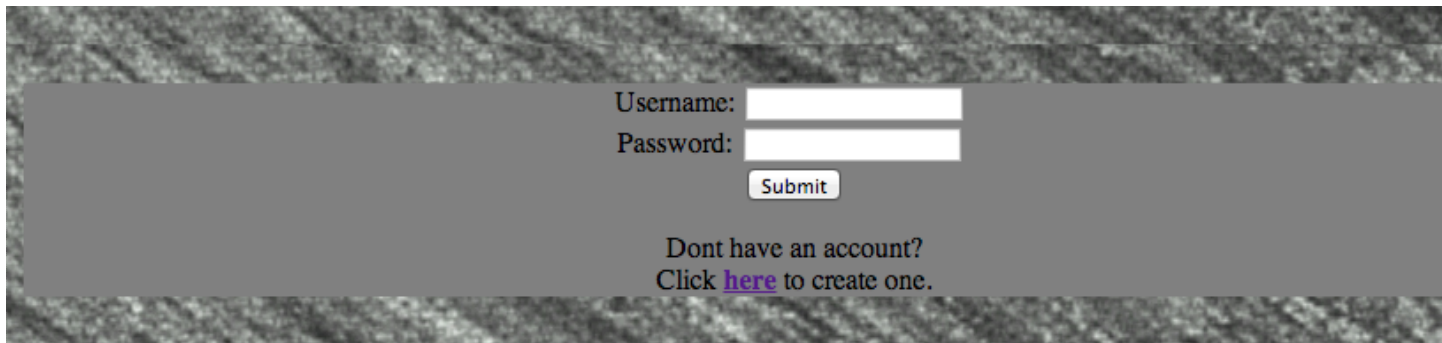
2. Logging in without inputting a password or entering an invalid password:



A screenshot of a login form with a dark gray background. At the top, the text "Invalid Login Information" is displayed in red. Below this, there are two input fields: "Username:" and "Password:". The "Password:" field is empty. A "Submit" button is located below the "Password:" field. At the bottom, the text "Dont have an account? Click [here](#) to create one." is displayed, with "here" being a purple hyperlink.

3. •Correctly creating a username, password and matching password confirmation, navigates back to the user login screen

•Creating a username but inputting nothing in the password confirmation, navigates back to the user login screen *Bug*



A screenshot of a login form with a dark gray background. It features two input fields: "Username:" and "Password:". Below the "Password:" field is a "Submit" button. At the bottom, the text "Dont have an account? Click [here](#) to create one." is displayed, with "here" being a purple hyperlink.

S1B Use Case: Navigating the website

Performed By: Sven Rivera

1. Clicking a link or button that has not yet been currently developed or under construction, resulting in an error *Bug*



Not Found


The requested URL /~gb4/CMSC345/Link 1 was not found on this server.

S2A Use Case: Tag Search


Performed By: Sven Rivera

1. Entering in a search term on the search bar, then clicking search. At the moment, the only links displayed are the most recently added articles (as it should be).


MOST RECENT:




YOUR NEXT NEWS ANCHOR MAY BE A ROBOT
Article detailing the possibility of personalized robotic news anchors.
2013-04-02 00:00:00



NASA ANNOUNCES COMPETITION TO IMPROVE RO
Great article about adding future Robonauts to space missions.
2013-04-01 00:00:00




DARPA WORKING ON LOW-COST ROBOT HANDS, A
Shows advanced robotic hand movements.
2013-04-01 00:00:00




> SIGN IN
Username:
Password:

[NEW USER](#)

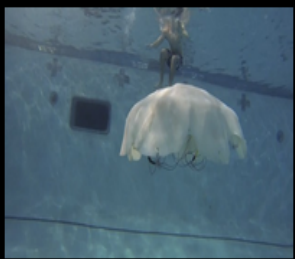
 USEFUL SITES
> Lorem Ipsum dolor sit
Posted on 23 July 2023

2. After clicking search, any article containing either 'locomotion' as a tag OR contains that word somewhere as part of the user submitted review returns that article as a result.


RESULTS:4




DARPA WORKING ON LOW-COST ROBOT HANDS, A
Shows advanced robotic hand movements.
2013-04-01 00:00:00



GIANT ROBOT JELLYFISH REPORTING FOR RECO
Brilliant work done by Virginia Tech demonstrating a long lasting, 'living' jellyfish
2013-04-01 00:00:00



TERRADYNAMICS: TECHNIQUE COULD HELP DESI
Great article on robot locomotion!
2013-03-26 00:00:00



ROBOTIC FISH GAIN NEW SENSE: NAVIGATE WA
Interesting article on robots navigating weather conditions.
2013-03-26 00:00:00

SIGN IN
Username:

Password:

[NEW USER](#)

USEFUL SITES

- Lorem ipsum dolor sit**
Posted on 23 July 2023
- Donec condimentum**
Posted on 23 July 2023
- Nulla facilisi**
Posted on 23 July 2023
- Nunc nec sem nisi**
Posted on 23 July 2023
- Allquam quam nulla**
Posted on 23 July 2023
- Lorem ipsum dolor sit**
Posted on 23 July 2023

3. Entering garbage into the search term displays no search results.

 **RESULTS:**⁰



 **SIGN IN**

Username:


Password:


[NEW USER](#)

S2B Use Case: Navigating the website


Performed By: Sven Rivera

1. Upon entering the site, the website displays all of the most recent robot news links submitted by users

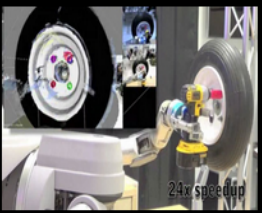
 **MOST RECENT:**




YOUR NEXT NEWS ANCHOR MAY BE A ROBOT
Article detailing the possibility of personalized robotic news anchors.
2013-04-02 00:00:00



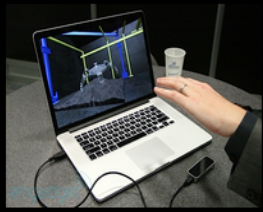
NASA ANNOUNCES COMPETITION TO IMPROVE RO
Great article about adding future Robonauts to space missions.
2013-04-01 00:00:00




DARPA WORKING ON LOW-COST ROBOT HANDS, A
Shows advanced robotic hand movements.
2013-04-01 00:00:00



BIONICOPTER DRAGONFLY DRONE FLUTTERS ABO
Great video showcasing lifelike bug flight and movement.
2013-04-01 00:00:00



NASA JPL CONTROLS ROVER WITH LEAP MOTION
Showcases the ability to user hand gestures to remotely control a robot.
2013-04-01 00:00:00



GRIZZLY ROBOT EV SHRUGS OFF DIFFICULT TE
Demonstrates an unmanned vehicle that easily traverses difficult terrain.
2013-04-01 00:00:00

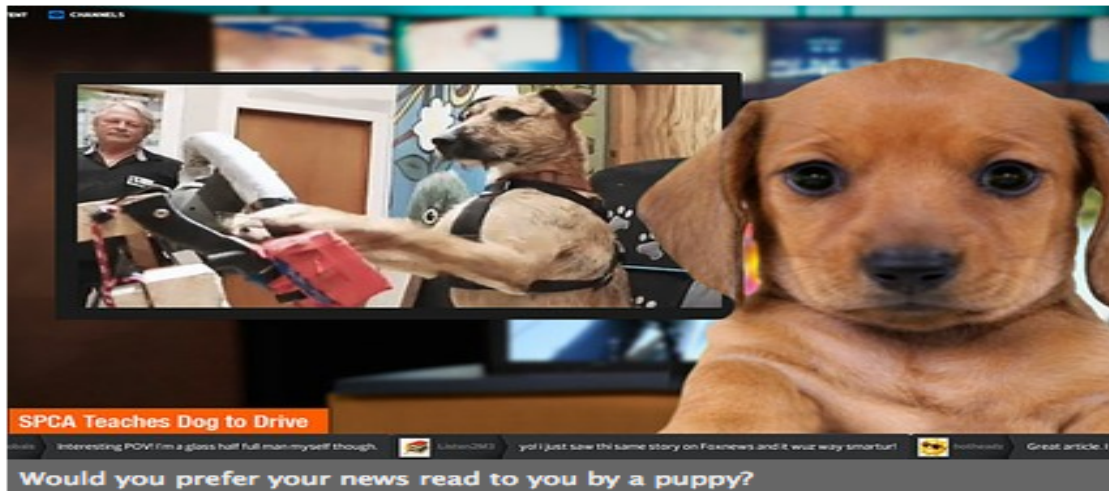
2. Clicking on an article link navigates the user to the desired news article page.

Your Next News Anchor May Be a Robot

A new startup wants to turn this article into a newscast. Is that what news consumers really want?

By DANIELLE KURTZLEBEN

April 1, 2013 | [RSS Feed](#) | [Print](#)

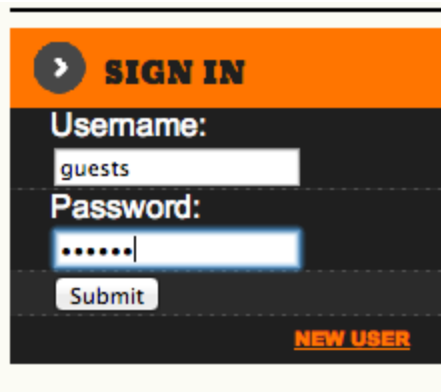


There may be a new way to do TV news. One that doesn't involve tuning out for human interest stories and morning-show anchors playing with baby animals. One that allows viewers to pick out exactly which stories they hear and which they skip. Not to mention one that could diminish the drama of the Matt Lauers and

3. Entering in a username and password correctly asks for the correct username and password length while making the username and password field disappear, replacing it with the logout button.



A vertical settings page with an orange header containing a list icon and the word "SETTINGS". Below the header is a search bar with a magnifying glass icon and the text "Lorem Ipsum dolor sit". The main content area is dark grey with a list of settings items, each preceded by a right-pointing chevron: "Donec condimentum", "Nulla facilisi", "Nunc nec sem nisl", "Aliquam quam nulla", "Lorem Ipsum dolor sit", and "Donec condimentum". At the bottom right, there is a "LOGOUT?" link in orange.

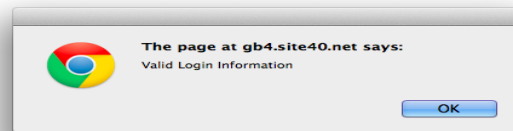


A vertical sign-in page with an orange header containing a right-pointing chevron icon and the text "SIGN IN". Below the header, there are two labels: "Username:" and "Password:". Under "Username:" is a text input field containing the word "guests". Under "Password:" is a password input field with six dots. Below the password field is a "Submit" button. At the bottom right, there is a "NEW USER" link in orange.

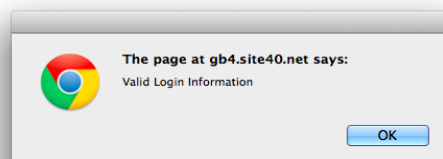
4. Bug: The website upon receiving an invalid username/password and in addition even valid login information navigates the user to a page informing them of their successful or unsuccessful login, but forces the user to have to click the back button to continue to use the site. Unsuccessful logins also in addition cause a major security leak revealing portions of the database's internal structure.

- For an invalid login:

```
SELECT * FROM `robo_users` WHERE `User_Name` = 'guests'
```



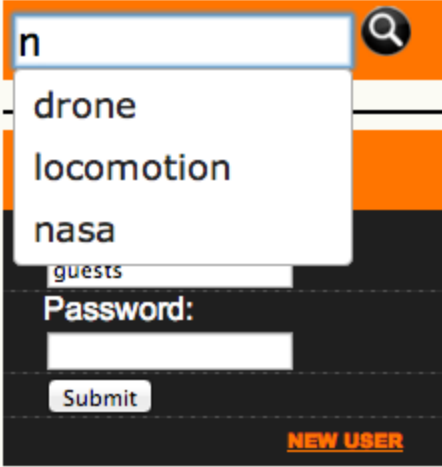
- For a valid login:



S2C Use Case: Search Auto Complete

Performed By: Sven Rivera

1. Entering in a partial search term into the search autocompletes the search.

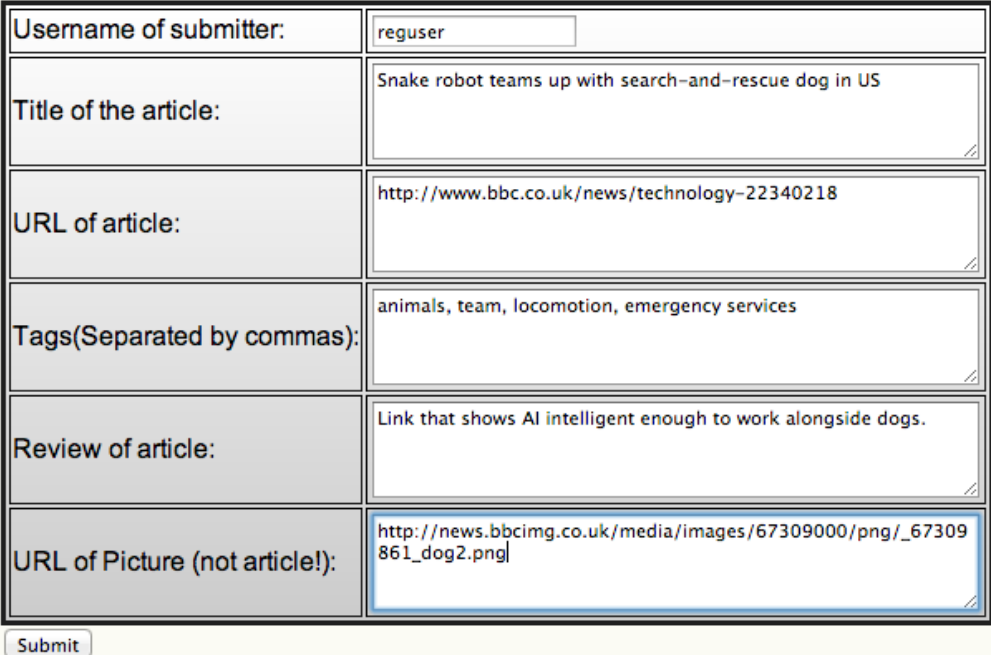


A screenshot of a web interface showing a search bar with the letter 'n' entered. A dropdown menu displays three suggestions: 'drone', 'locomotion', and 'nasa'. Below the search bar, there is a 'guests' link, a 'Password:' label, a password input field, a 'Submit' button, and a 'NEW USER' link.

S3A Use Case: Submitting an Article

Performed By: Sven Rivera

1. Entering in a new user submission




A screenshot of a web form for submitting an article. The form contains the following fields and values:


Username of submitter:	reguser
Title of the article:	Snake robot teams up with search-and-rescue dog in US
URL of article:	http://www.bbc.co.uk/news/technology-22340218
Tags(Separated by commas):	animals, team, locomotion, emergency services
Review of article:	Link that shows AI intelligent enough to work alongside dogs.
URL of Picture (not article!):	http://news.bbcimg.co.uk/media/images/67309000/png/_67309861_dog2.png

Below the form is a 'Submit' button.


2. Newly added link displays with all the review information



SNAKE ROBOT TEAMS UP WITH SEARCH-AND-RES
Link that shows AI intelligent enough to work alongside dogs.
↑ 0 ↓ 2013-04-29 23:28:12



FLIPPERBOT: SEA TURTLES AND FLIPPER-DRIV
Another interesting article on robotic animals
↑ 0 ↓ 2013-04-29 22:47:50

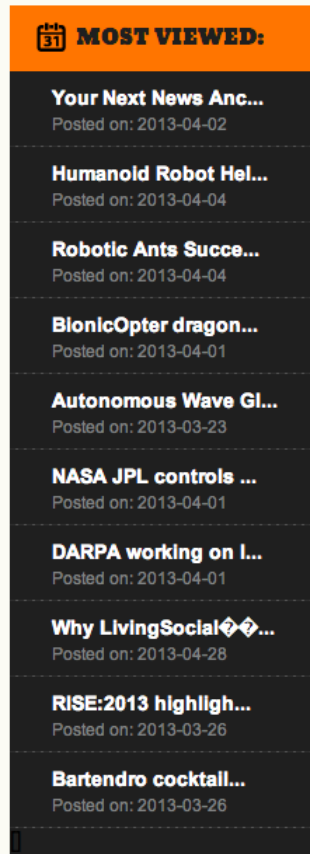


HOW WOULD YOU LIKE YOUR ASSISTANT – HUM
Amazing article on robot helpers!
↑ 0 ↓ 2013-04-29 22:46:48

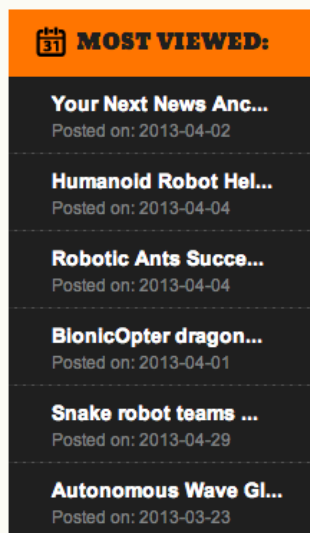
S3B Use Case: Most Viewed Column and Navigation

Performed By: Sven Rivera

1. The most viewed links column before continuously viewing the new article submission “Snake Robot Teams Up With Search-And-Rescue”



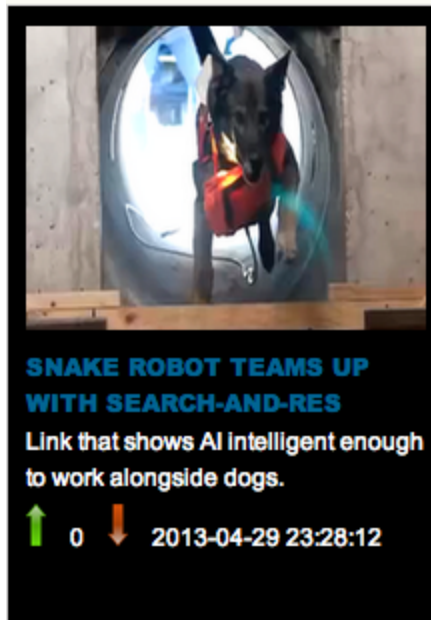
2. After numerous views of the article, it properly appears as a most viewed article.



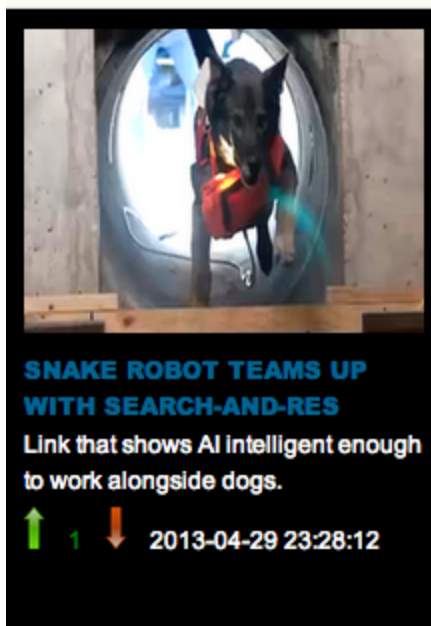
S3C Use Case: Rating System

Performed By: Sven Rivera

1. A submitted link with no thumbs up or down



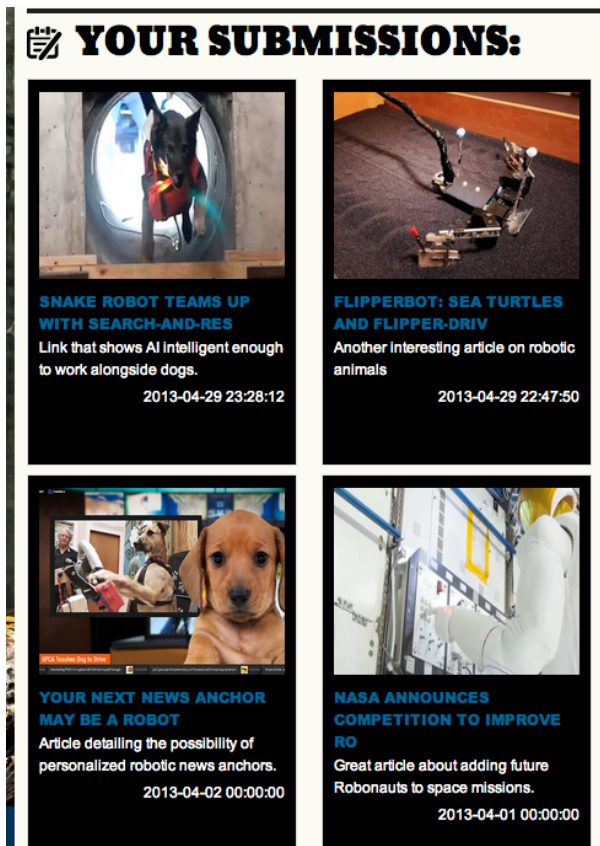
2. The link after giving it a thumbs up rating



S3D Use Case: Viewing and Editing a Submission

Performed By: Sven Rivera

1. Viewing personalized website with all submitted articles in chronological order



2. List of all user submissions with the option of clicking to edit

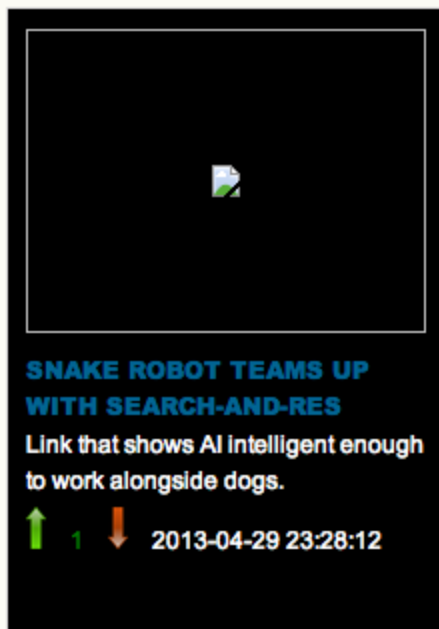
Click on a row in the table to edit the corresponding article.

Article Title	Submitter	Date Submitted
Autonomous Wave Glider bot launched to track sharks, beam real-time data to your iPhone and iPad	reguser	2013-03-23 00:00:00
Bartendro cocktail mixing robot lands on Kickstarter, wields Raspberry Pi	reguser	2013-03-26 00:00:00
BionicOpter dragonfly drone flutters about, blows minds	regUser	2013-04-01 00:00:00

3. Editing a submission

Title	Autonomous Wave Glider bot launched to track sharks, beam real-time data to your iPhone and iPad
Article URL	http://www.engadget.com/2012/08/19/wave-glider-bot-launched-to-track-sharks/
Review	When they're not breaking world records, fuel-hating Wave Glider seabots like to indulge in other hobbies, like shark tracking. One of the vessels has just been launched off the coast near San Francisco (vid after the break), adding a mobile worker to the existing local network of buoy-mounted receivers. They monitor the movements of electronically tagged sea life, including the
Tags	shark, robot, ipod, ipad
Image URL	http://www.blogcdn.com/www.engadget.com/media/2012/08/sharktracker.jpg

4. Submission with broken link submitted



4. Appendix A – Team Review Sign-off

This document has been collaboratively written by all members the team. Additionally, all team members have reviewed this document and agree on both the content and the format. Any disagreements or concerns are addressed in team comments below.

Team

Name _____ Date: _____

Print

Name _____ Date: _____

Signature _____

Comments _____

Name _____ Date: _____

Print

Name _____ Date: _____

Signature _____

Comments _____

Name _____ Date: _____

Print

Name _____ Date: _____

Signature _____

Comments _____

Name _____ Date: _____

Print

Name _____ Date: _____

Signature _____

Comments _____

Name _____ Date: _____

Print

Name _____ Date: _____

Signature

Comments

Name _____ Date: _____

Print

Name _____ Date: _____

Signature

Comments

5. Appendix B– Document Contributions

The overall document was created by Sven Rivera and reviewed by other group members.