

Product: S.S. Media

Client: Doctor Judith E. Rosenbaum

User Manual



Black Bear Analytics

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Revision History

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S. S. Media User Manual

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S. S. Media Abstract

Social media has grown to be an extremely large part of society in recent years. Because of this, a need to gather data from it has also arisen. Black Bear Analytics is creating a tool that allows researchers to scrape public data from posts on Twitter and Instagram. This tool was requested by Doctor Judith Rosenbaum of UMaine's Department of Communication and Journalism. The S.S. Media will have an easy-to-navigate interface that allows users to switch between scraping public posts on Instagram and Twitter. The *New Search* page gives the user an option of either an advanced search or a basic search. The basic option searches by specified hashtags, locations, or phrases, and an acceptable start and end date to check with each post scraped, while an advanced search has the same general functions as the basic search, but adds the ability to search for more than one topic (hashtag, location, phrase), as well as run the search once every specified amount of time. The tool will store a number of scrape requests, so that users can either inspect a previous scrape request or request it again. Once the scraping is completed, the data will be downloaded to the user's computer in the form of a .csv file, and images will be stored in a corresponding folder. The outcome of this project will hopefully be that researchers like Doctor Rosenbaum can have a tool that will enable them to easily search for data and trends on social media sites.

1 INTRODUCTION

The S.S. Media is a social media data gathering platform created by the Black Bear Analytics (BBA) team from the capstone class (COS 497) at the University of Maine, from 2020-2021. Our customer is Doctor Judith E. Rosenbaum from the Communications and Journalism department at the University of Maine. BBA undertook this project to help researchers in the social sciences gather information from social media platforms such as Instagram and Twitter. To date, core functionality for these platforms has been created and this User Manual serves to help administrators, support staff, and users maintain the software and use it to access data.

1.1 INTENDED READERSHIP

The personas that this User Guide and accompanying Administrator Manual recognize are covered in this section. BBA has compiled a list of users, and descriptions of their function in maintaining or using S.S. Media.

In the following section, we go over each persona, a description of that persona, the level of experience assumed, and sections of the manual that are most relevant to them:

- Persona 1: Administrator
 - Administrators are responsible for user management. They are given the power to approve new users, ban user accounts, and delete users.
 - Administrators are expected to understand minimal technology concepts and are capable of performing functions and procedures listed in the Administrator Manual document.
- Persona 2: End User
 - The end user will be the person using the product. They have full access to scraping information through the search page. They do so with keywords from websites or links to locations presented on the website.
 - End users are expected to have basic computer skills such as typing and operating a web browser like Google Chrome. No technical experience is expected.
- Persona 3: Developer
 - This persona is a helper to the product. They maintain and push updates alongside maintenance features to the product when requested or required.
 - Expected to have a full understanding of technological methodologies as well as programming languages and software development skills. Able to troubleshoot, research, and fix underlying issues within the code of the tool.
- Persona 4: Support Outreach
 - Support Outreach deals with end user contact from the contact page. They are also responsible for keeping up a subscription with the Twitter API and any other budgetary need pertaining to the product.

- Basic computer skills and knowledge of performing online purchases, such as signing up and cancelling subscriptions is expected.

This User Guide applies to S.S. Media Version 1.0.

1.2 PURPOSE

The purpose of the system we are designing is to take key search terms and understandings from the user and process it into meaningful social media posts related to the search terms that help the user conduct research on social media topics.

This process is the research process that many researchers at universities and businesses undergo to get data from social media sites. The data is collected manually or by miniature scripts in today's world, but BBA is seeking to streamline the data collection process with an application that molds itself into a useful tool for data gathering.

1.3 HOW TO USE THIS DOCUMENT

This User Guide has three main sections along with subsections that flesh out its details. The main sections are: the Introduction, the Overview, and Instructions.

Section 1, the Introduction, introduces the reader to this document and developed application. This includes things such as intended readership, the purpose of the system, how to use the document, and related documents.

Section 2, the Overview, provides a brief overview of the application, providing the reader with a general idea of how the application works.

Section 3, the Instructions, provides detailed instructions on how to use the application. This includes a subsection dedicated to each page of the application. Each subsection provides a picture of what the page looks like, details the purpose of the page, and describes all parameters and functionality of that page.

1.4 RELATED DOCUMENTS

Below is a list of all documents that are related or referenced by this document:

Table 1.1: Related and Referenced Documents

Num	Title	Author	Date	Issue
1	S.S. Media System Requirements Specification Document	Black Bear Analytics Team	10/24/2020	1.0

2	S.S. Media System Design Document	Black Bear Analytics Team	11/10/2020	1.0
3	S.S. Media User Interface Design Document	Black Bear Analytics Team	11/24/2020	1.0
4	S.S. Media Critical Design Review Document	Black Bear Analytics Team	12/17/2020	1.0
5	S.S Media Code Inspection Report	Black Bear Analytics Team	3/17/2020	1.0
6	S.S. Media Administrator Manual	Black Bear Analytics Team	4/7/2020	1.0

1.5 CONVENTIONS

This document has no important stylistic conventions.

1.6 PROBLEM REPORTING INSTRUCTIONS

If a user encounters any software issues, the best course of action is to contact the system administrator. This can be done through the Contact Us Page on the application. This will notify the system administrator via email so they can get in contact with the user to provide help. Expect a response email to the one provided on the Contact Us Page.

2 OVERVIEW

S.S. Media is a web application developed to scrape Instagram and Twitter for relevant posts, based on hashtags, locations, or phrases. It is accessed through a web browser, such as Chrome, Safari, or Internet Explorer. Upon visiting the site, users will be brought to the login page. Once logged in, they can navigate through the rest of the site. There are 10 total pages. They are the Login User Page, Register Account Page, Account Processing Page, Contact Us Page, Contact Us Success Page, Home Page, User Settings Page, Administrator Settings Page, New Search Page, and the Searching Page. With the web application, users will be able to create an account, login into their accounts, manage their settings, and scrape information off of the social media sites Twitter and Instagram. The administrator has additional powers, allowing them to approve, delete, and ban other user accounts. All users can scrape information based on different search parameters such as hashtag, location, and phrase. Once a scrape has finished, the information will be returned to them as a zipped folder containing a .csv file full of all scraped text information and a media folder containing scraped pictures and videos associated with scraped posts.

3. INSTRUCTIONS

The S.S. Media application has a user system that allows new visitors of the site to create an account, have the account be approved by an administrator, and login. Upon a successful login, the user will have access to the data scraping page that allows the user to enter criteria that the data being scraped must have. The criteria that can be validated against are dependent on the website being scraped. For Twitter, the user may enter locations or hashtags as criteria for what the data, or tweets, must contain. Instagram will only accept locations or hashtags as criteria. Once a search has been submitted, the data will be searched for and collected into a zip file or folder, depending on the website being scraped.

For any questions or concerns about administrator functions as responsibilities, please refer to the Black Bear Analytics Administrator Manual. This includes the important administrator topics as follows: Hardware and Software Requirements, Administrator Procedures, System Installation, Routine Tasks, Backup Procedures, User Support, Troubleshooting, Dealing with Error Messages and Failures, and Known Bugs and Limitations.

Now we begin by taking a deep dive into each page by analyzing the page, any warnings associated with it, instructions on how to use the page, and any errors that could be encountered with possible remedies.

Login User Page

The image shows a web form titled "Scraper Log In". It contains two text input fields labeled "Email" and "Password". Below the "Password" field is a blue button labeled "Login". At the bottom left of the form is a blue button labeled "Contact Us", and at the bottom right is a blue button labeled "Create".

Functional Description of Page

The Login User Page is the landing page when a user first visits the application. With this page, a user can message the administrator, create an account, and login to their account.

Cautions and Warnings

N/A

Procedures

This page includes 2 text boxes and 3 buttons. They function as follows:

- Email Textbox:
The email textbox takes in email input for a user's account.
- Password Textbox:
The password textbox takes in password input for a user's account.
- Login Button:
Upon being clicked, the login button authenticates the user. If the submitted email and password submitted in their associated boxes match a user's account, the user will be logged in and navigated to the home page,
- Contact Us Button:
The Contact Us Button navigates the user to the Contact Us Page
- Create Button:
The Create Button navigates the user to the Register Account page

Probable Errors and Possible Causes

- Not able to login:
This may happen when a user enters their credentials wrong, when a user has not created an account, or if the account in question has been deleted or banned by an administrator.

Register Account Page

Create Your Account

Email:

Name:

Password:

Re-type Password:

Create Account

Return to Login

Functional Description of Page

This page allows a user to create a new account request. That request will be sent for administrators to view. Upon an administrator's approval the user's account will be created.

Cautions and Warnings

- There is no confirmation on the information being provided.
- It is not possible to reset a password for an account. Instead, in order to reset a forgotten password, the user must contact an administrator and give them their account's email address and inform them that they cannot access their account anymore. The account with the forgotten password will be deleted, and a new account must be created by the user.
- Leaving this page (such as refreshing or clicking "Return to Login") will remove any changes made to the text fields, and the user must start over.

Procedures

- From the LoginPage, click on the Create button found at the bottom right of the page.
- Fill out the form by clicking on each input box and typing the input as shown in the examples provided directly above each input box, respectively.
- Click on the Submit button at the bottom center of the page.

Probable Errors and Possible Causes

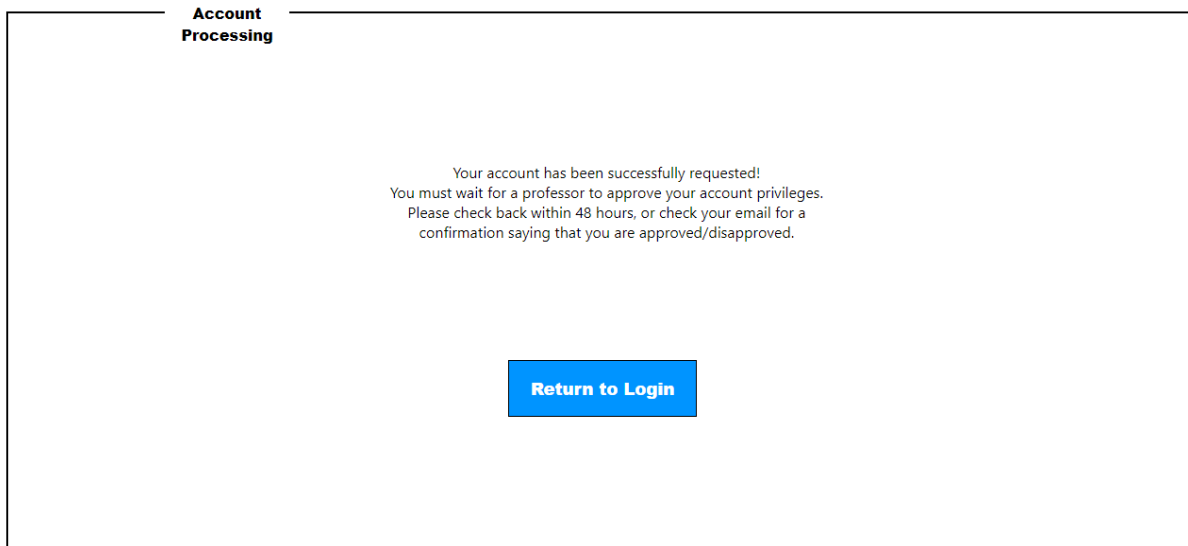
- Passwords do not match

This error occurs when the "Password" and "Re-type Password" fields are filled out but not matching.

- Empty field

This error occurs when any of the four given text boxes are empty when the “Create Account” button is pressed.

Account Processing Page



Functional Description of Page

The Account Processing page is navigated to from the Register Account Page. This page's only purpose is to confirm to the user that their account was requested.

Cautions and Warnings

N/A

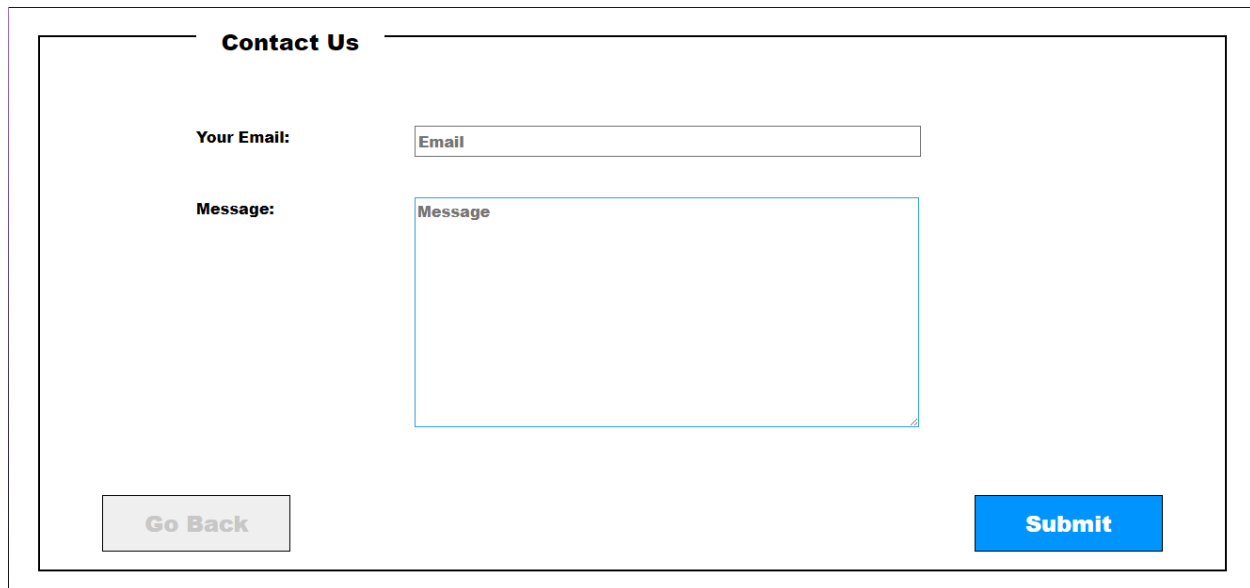
Procedures

This page has only one button, which upon clicking, will navigate the user back to the login page.

Probable Errors and Possible Causes

- The account was unsuccessfully created:
This error might occur if there is a disconnect between the database and the front end, or if the database is down.
- An account with this email already exists:
This error will occur if there is an account with the same email address already created.

Contact Us Page



The screenshot displays a web form titled "Contact Us". It contains two input fields: "Your Email:" with a placeholder "Email" and "Message:" with a placeholder "Message". Below the fields are two buttons: "Go Back" (grey) and "Submit" (blue).

Functional Description of Page

The Contact us page will allow a user to send any questions or concerns to the administrator by email. The user is asked to enter their email address and can send messages upto 500 characters long to the administrator. The administrator will respond to this message via the entered email address.

Cautions and Warnings

- No entered text will be saved or sent if the user leaves the Contact Us page before hitting the Submit Button.
- The message's information is not encrypted when sent, so do not send any extremely sensitive data over this contact portal.

Procedures

The Contact Us page includes 2 text fields and 2 buttons. They function as follows:

- Your Email Text Field:
This text field allows for the user to enter their email address. An example of the entered text is supplied above the field. This is the email address that the administrator will send a reply to.
- Message Text Field:

This text field allows for the user to enter their message to the administrator. Messages must be kept under 500 characters. Above the field is an indicator of how many characters left.

- **Submit Button:**

When the user clicks the Submit Button their message will be sent to the administrator. This will also bring the user to the Contact Us Confirmation Page to inform the user if the message has been successfully sent.

- **Go Back Button:**

When the user clicks the Go Back Button they will be directed to the Login User Page.

Probable Errors and Possible Causes

- **Incorrect email format:**

This error is caused by a user not correctly writing their email account in the firstlast@email.com format.

- **Too Many Characters:**

This error is caused by a user typing more characters than allowed 500 and attempting to send the message.

Contact Us Success Page

Contact Us Confirmation

Your message was successfully sent. Please wait approximately 2-4 business days for a reply to your email at socialscraper24@gmail.com.

Return to Login

Functional Description of Page

This page will let the user know if their contact us message has been successfully sent. A message will be displayed depending on the outcome and a home button is shown to bring the user back to the Home Page.

Cautions and Warnings

N/A

Procedures

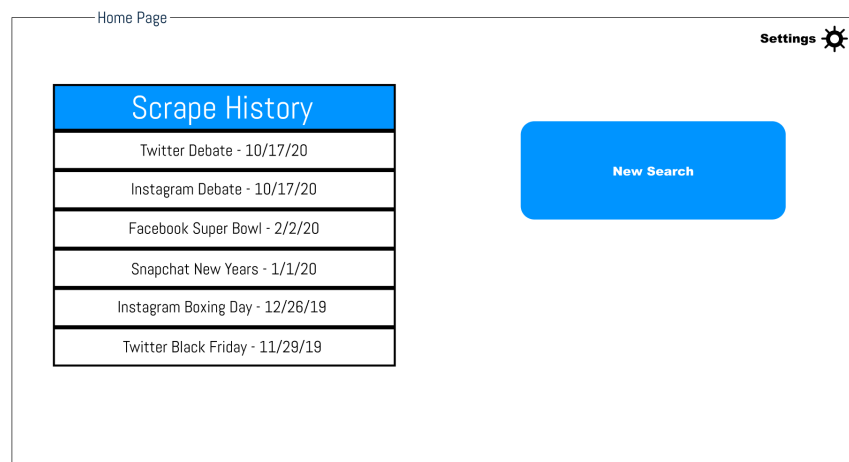
The Contact Us Success Page includes 2 potential messages and 1 Button. They function as follows:

- **Sent Successfully Message:**
This message is displayed when the user's message was successfully sent to the administrator.
- **Failed to Send Message:**
This message is displayed when the user's message fails to send.
- **Home Button:**
When the user clicks the Home Button they will be directed to the Home Page.

Probable Errors and Possible Causes

- The message can be reported as unsuccessfully sent:
The front end has lost connection to the script that sends the email, causing the message to not be able to be saved and sent to the administrator account.

Home Page



Functional Description of Page

The Home Page is used as a landing page for the user after logging in. With it the user can navigate to all features of the application. This includes viewing settings, creating a new search, and loading a previously saved scrape. The image above is the view of this page.

Cautions and Warnings

N/A

Procedures

The Home Page includes 3 buttons and one table. They function as follows:

- New Search Button:

The New Search Button navigates the user to the New Search Page.

- Settings Button:

The Settings Button navigates the user to the Settings Page

- Scrape History Table:

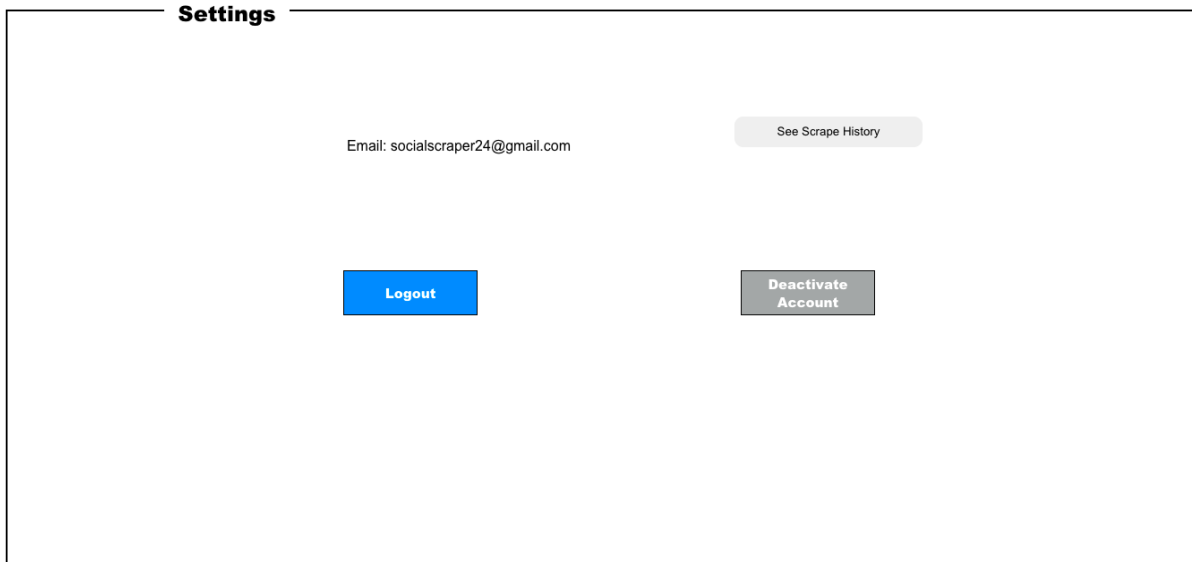
The Scrape History Table holds references to the last 5 scrapes done by the current user. Clicking one of these references will navigate the user to the New Search Page with the parameters said search already filled in.

Probable Errors and Possible Causes

- Scrape history does not populate the New Search page correctly.

This could be caused by the user running a scrape with an error in input and it getting saved to the user's scrape history.

User Settings Page



Functional Description of Page

The User Settings page is for non-administrative users to change their settings and save them to their account. The display includes the user's email address and the See Scrape History button that allows them to toggle whether they can see their last five scrapes on the home screen. The Logout button will log the user out of their account and redirect them to the home page. The Deactivate Account button will log the user out, remove the user's account from the system, and redirect them to the Login Page.

Cautions and Warning

- Deactivating the user's account will permanently and instantly deactivate the account. The account cannot be recovered afterwards, and a new account must be created by the user.

Procedures

There are 3 buttons and one text display field on this page. They function as follows:

- Email text display field:
The user's email address they use to receive emails and log in is displayed here. They cannot change it, and instead must create a new account if they want a different email.
- See Scrape History:

The user can toggle this button on and off, with the BLUE color on the button being ON and the WHITE color on the button being OFF.

When toggled to ON, the user will see the scrape history of the past five scrapes that they started, displayed on the home screen.

When toggled to OFF, the home page will not display any previous scrapes.

- Logout:

Pressing this button will log the user out of their account and redirect them to the home page.

- Deactivate Account:

Pressing this button will log the user out of their account, delete their account from the database, and redirect them to the Login page.

Probable Errors and Possible Causes

- Failure to Deactivate Account:

This error might occur if there is a disconnect between the database and the front end, or if the database is down, or if the program returns that the email address that the user has is not in the database.

Administrator Settings Page

Admin Settings

Email:

Save Changes

Approve Accounts

basic account	Approve	Admin	Ban	Delete
admin account	Approve	Admin	Ban	Delete

Logout

Deactivate Account

Functional Description of Page

The Administrator Settings Page allows the user to have access to the same functionality as the User Settings page, with the added functionality of approving, banning, deleting, and promoting accounts.

Cautions and Warnings

- There is no way to demote an administrator back to a user account, once the Admin button is clicked on an account, that account will always be an administrator.
- There is no way to unapprove an account, however you can still ban or delete any account.
- Do not ban or delete every administrator account or no admin accounts will exist without a way to add a new administrator or approve new accounts.
- There is nothing preventing a user from deleting their own account via the “Approve Accounts” section: it will have the same functionality as clicking the “Deactivate Account” button.

Procedures

The Admin Settings Page has 3 buttons and 1 text field. This page also has a list of all the active users, on the listed account there are 4 buttons. They function as follows:

- Logout Button:
When clicked, the logout button will log the user out of the application and redirect them to the Login page.
- Save Changes:
When clicked, this button will update the user's email if they are entered into the corresponding text fields
- Deactivate Account:
When clicked, this button will deactivate the current user's account.
- Email Text Field:
This text field is for updating the email address associated with the user's account.
- Active User List:
This is a list of all the active users, each user gives the admin 4 options of buttons.
 - The approve button is for approving a pending user, granting them access to the application.
 - The admin button gives the user admin permissions, which gives them access to the admin settings.
 - The ban button is used for banning an account. This action keeps the user's email in the database and will not allow a new account to be made with that email.

- The delete button is used for deleting an account. Unlike the ban button this will also remove the email from the database. Allowing a new account to be made from that email.

Probable Errors and Possible Causes

- Failure to Ban Account, Failure to Deactivate Account, Failure to Approve Account, Failure to Delete Account

This error might occur if there is a disconnect between the database and the front end, or if the database is down, or if the program returns that the email address that the user has is not in the database.

New Search Page

The screenshot shows the 'New Search Page' interface. At the top, there is a 'Social Platform Selection' header. Below it, a 'Platform:' label is followed by a 'Select' button with a blue downward arrow. To the right of the header is a 'Settings' link with a gear icon and a home icon. Below the platform selection is a 'Search Criteria' section. This section contains three input fields on the left: 'Hashtag(s):' with a placeholder 'Research', 'Location(s):' with a placeholder '#Orono,ME#OldTown,ME', and 'Phrase(s):' with a placeholder '#Phrase'. To the right of these fields is a 'Date Selection:' section with 'Start Date:' and 'End Date:' labels, each followed by a date input field with a placeholder '#Phrase' and a calendar icon. At the bottom of the form are two buttons: 'Save Search' (grey) and 'Continue' (blue).

Functional Description of Page

The New Search page is used to help a user start a new social media scrape. It can scrape posts from both Twitter and Instagram and can also take search parameters such as hashtags, locations, and phrases. When a new scrape is started it will navigate the user to the Searching page.

Cautions and Warnings

Make sure your input is valid. There are many rules specified below on the valid inputs you can use. Using invalid input could break something. If unsure if your input is correct, consult the descriptions below.

Procedures

The Search Criteria Page contains 1 drop down menu, 5 text fields and 3 buttons. They function as follows:

- Platform Drop Down box:

The Platform Drop Down Box had two options: Twitter and Instagram. Selecting on will show the available options to search by for that social media.

- Hashtags Textbox:

Instagram

If Instagram is selected, the textbox will take in a single hashtag. This hashtag will be the one you wish to search by. The hashtag inputted should be preceded by a hashtag. The input should look something like this: #tacos

Twitter

If Twitter is selected, the textbox will take in a list of hashtags. These hashtags will be added to the search parameters so that only tweets with that hashtag will be returned. Each hashtag inputted should be preceded by the hashtag symbol (#). The input should look something like this: #dog#cat#snake

- Locations Textbox:

Instagram

If Instagram is selected, the locations textbox will take in a link to an instagram location page. This will be the location you wish to gather posts from. The link you wish to scrape can be gotten by going to instagram.com, typing the location you seek in the search bar, selecting the result that represents your location, and taking the url from that page. Your input should look something like this: <https://www.instagram.com/explore/locations/238370172/orono-maine/>

Twitter

If Twitter is selected, the textbox will take in a list of locations. These locations will be added to the search parameters so that only tweets taken with that location tag will be returned. Each location inputted should be preceded by the hashtag symbol (#). The input should look something like this: #newyork#boston#washington,D.C.

- Phrases Textbox:

The Phrases Textbox is only available for Twitter searches and will not be visible if Instagram is selected. The textbox takes in a list of phrases that can be searched by. These phrases will be added to the search parameters, so that only tweets with that phrase inside it will be returned. Each phrase inputted should be preceded by

the hashtag symbol (#). Phrase input should look something like this: #planking#I love bears#working late

- **Multiple Twitter Inputs**

For best results, the logic behind twitter inputs should be known. If more than one of a type of input is used, they will be ORed together. This means that in the Locations Textbox, if #newyork#boston was inputted, tweets with either the location tag newyork or the location tag boston will be returned. It should also be known that if more than one type of input is used, they will be ANDed together. This means that if the hashtag #dog and the phrase “I love lucy” were both inputted, only tweets containing the hashtag #dog and the phrase “I love lucy” would be returned. This also means that if both #dog and #cat were inputted, but the locations boston and newyork were also inputted, then you would have four types of tweets returned. Those being #dog + location:boston, #dog + location:newyork, #cat + location:boston, and #cat + location:newyork. Finally, no more than 9 total terms across hashtags, locations, and phrases should ever be used during one scrape.

- **Multiple Instagram Inputs**

Instagram cannot take multiple inputs. You should only ever input one hashtag or one location link per search.

- **Start Date Textbox:**

The Start Date Textbox is only available for Twitter searches and will not be visible if Instagram is selected. It takes in text information representing the farthest date in which tweets are accepted to be from. Combined with the End Date Textbox a date range for tweets can be created. The start date should not be any date later than 30 days from the current date. The start date should be inputted in the form of MM/DD/YYYY

- **End Date Textbox:**

The End Date Textbox is only available for Twitter searches and will not be visible if Instagram is selected. It takes in text information representing the latest date in which tweets are accepted to be from. Combined with the Start Date Textbox a date range for tweets can be created. The end date should not be any date later than 30 days from the current date. The end date should be inputted in the form of MM/DD/YYYY

- **Settings Button:**

Upon pushing this button the user will be navigated to the Settings Page.

- **Home Button:**

Upon pushing this button, the user will be navigated to the Home Page.

- **Continue Button:**



Upon pushing this button, a new scrape will be started according to the specified requirements in the above text boxes. The user will then be navigated to the Searching Page where they can wait until they wish to stop their scrape.

Probable Errors and Possible Causes

- Invalid or wrong input
May possibly cause errors with scraping
- There are multiple things that need to be tracked by the administrator for this system. They are all found in the Administrator Manual. Should you have valid input, but scraping still isn't working, contact your administrator for help.

Searching Page

Searching

Settings  

User:	HashTag(s):	Location(s):	Phrase(s):
Abdullah Karim	#Dog#Cat#Hat...	#Arizona#Miami...	N/A

Your search is currently running...

Functional Description of Page

The Searching Page is used to monitor your current search. With it you can view the searches parameters and the number of posts scraped so far. When a scrape finishes it will automatically download the user's scrape for them within their browser.

Cautions and Warnings

N/A

Procedures

The Searching Page has 2 buttons. They function as follows:

- Settings Button

The Settings Button navigates the user to the settings page.

- Home Button

The Home Button navigates the user to the home page.

Probable Errors and Possible Causes

N/A

A. ERROR MESSAGES AND RECOVERY PROCEDURES

The user will not be presented with error messages. However, if the user opened their browser's console, they could potentially view error messages. If there are error messages, attempt to close the tool and reopen it in a new window. If the error messages persist, contact an administrator to resolve the issue. Closing the tool may lose any data that has not already been downloaded. This includes all scrapes that are currently in progress, resulting in the scrapes ending without any data being collected.

System Recovery Procedures can be found in the S.S. Media Administrator Manual.

B. GLOSSARY

Data

A piece of information such as an email address. The email address itself is data that can then be stored in a database.

Database

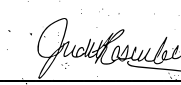
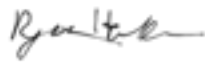


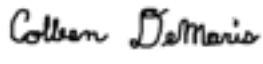

A database is a form of storage for information such as a person's email address and password.

Scrape

The searching and collection of information from a website.

Appendix A - Team Review Sign-off

All members of Black Bear Analytics have gone through the review process for this document and agree on both the manual entries in this document and are certain there is enough coverage to be effective. We have also received a sign-off from the client, approving this document which means they have reviewed and have accepted what is listed above until fixed.

Name	Signature	Date
Customer: Judith Rosenbaum		04/19/21
Comments:		
Team:		
 Ryan M. Handlon		April 19th, 2021
Comments:		
 Abdullah I. Karim		April 19th, 2021
Comments:		
 Griffin L. Fluet		April 19th, 2021
Comments:		
 Colleen DeMaris		April 19th, 2021
Comments:		
 James West		April 19th, 2021

Appendix B - Document Contributions

Abdullah, Colleen, Griffin, James, and Ryan all contributed equally (20%) to this document. Each member added to a section(s) of the document with valuable content. In drafting this document each member listed defects they had, solutions for problems, and general information to help a user operate S.S. Media.