

Automated Reports with Graphical Representations

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Introduction

Our client, DigiClips Inc., is a media content analysis company that records media hits from different media sources to make it searchable for their clients, who might want to locate news clips containing their name, company name, a specific topic, and more.

Problem Statement:

The data currently being extracted for their clients is not presented in a user-friendly manner which contains all the different media sources based on the media hits. Their system also does not generate any graphical representations of the analyzed data from their database.

Solution:

We developed a new system using AWS, and Angular, which automatically generates email reports for their clients, which provides them with links to the various media hits from their selected media preferences related to their searched keywords and generates graphical representations of the analyzed data.

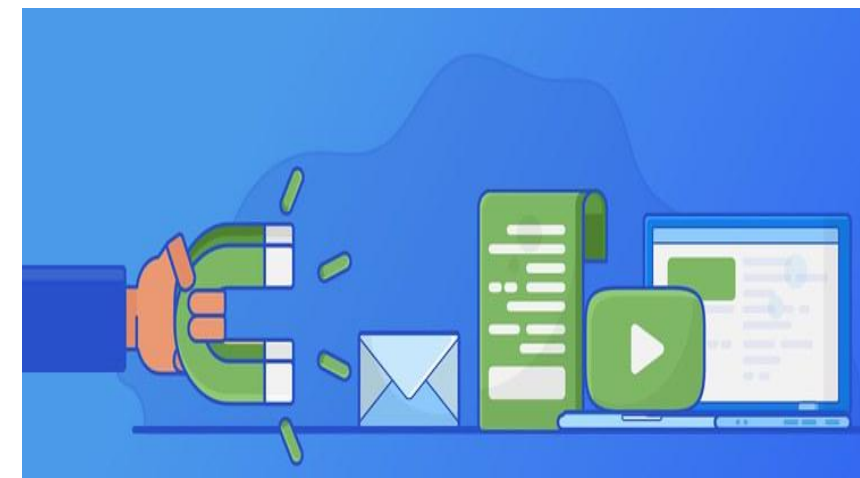
Intended Uses and Users

Users:

- Admins: Bob Shapiro & Henry Bremers
- Prospective Clients
- Digiclips' Clients
- Future Students working with Digiclips

Uses:

This system is for use within DigiClips Inc. systems. Clients of DigiClips Inc. can use the Media Search Engine to specifically query keywords or phrases, and set preferences for their automated email report alerts.



DigiClips will use our part of search engine to generate user-friendly email reports for their clients and display the graphs generated from their databases. This will help DigiClips' clients to find information quickly and more accurately.

Methodology

Project Design:

- Four main components: Search engine, media monitoring database, media result database, automated email reports
- Capture all necessary procession into one single application
- Increase productivity of the result hits and the creation of automated email reports
- Create graphs from their stored media hits to improve their work functionality

Design Approach:

- Performed data analysis on their databases to start creation of graphs for media hits
- Analyzed their codebase thoroughly for any discrepancies and errors
- Performed initial testing on their application to note down any errors, and worked on fixing any bugs
- Researched on how AWS SES can be used to send to automated email reports
- Researched on how AWS SDK can be used to create automated email reports

Design Decisions:

- Figured out what Digiclips is missing from their Frontend search engine
- Utilized that information to work on a project to improve the feasibility of the search engine
- Created mockup versions for their application when their system was down
- Worked on creating actual frontend components based on the mockup versions using Angular and HTML

Newspaper Results

Image 1: Email Reports with Newspaper hits

Henry Ramos, recently promoted, playing a big role in Cincinnati Reds winning streak
Cincinnati Enquirer - Bobby Nightengale, Cincinnati Enquirer - April 29, 2023 8:40 PM

The Reds have a 5-0 record since they promoted Henry Ramos, and he keeps finding ways to impact games.

Cincinnati Reds earn another comeback win, extend winning streak to 5 games vs. Oakland
Cincinnati Enquirer - Bobby Nightengale, Cincinnati Enquirer - April 29, 2023 6:19 PM

With a fortunate bounce off the first-base bag, the Reds earned another comeback win to extend their winning streak to five games.

DigiClips Search Email Alerts Media Analytics Language Translation User Profile Contact Us Help Sample Bar Chart Line Bar Chart

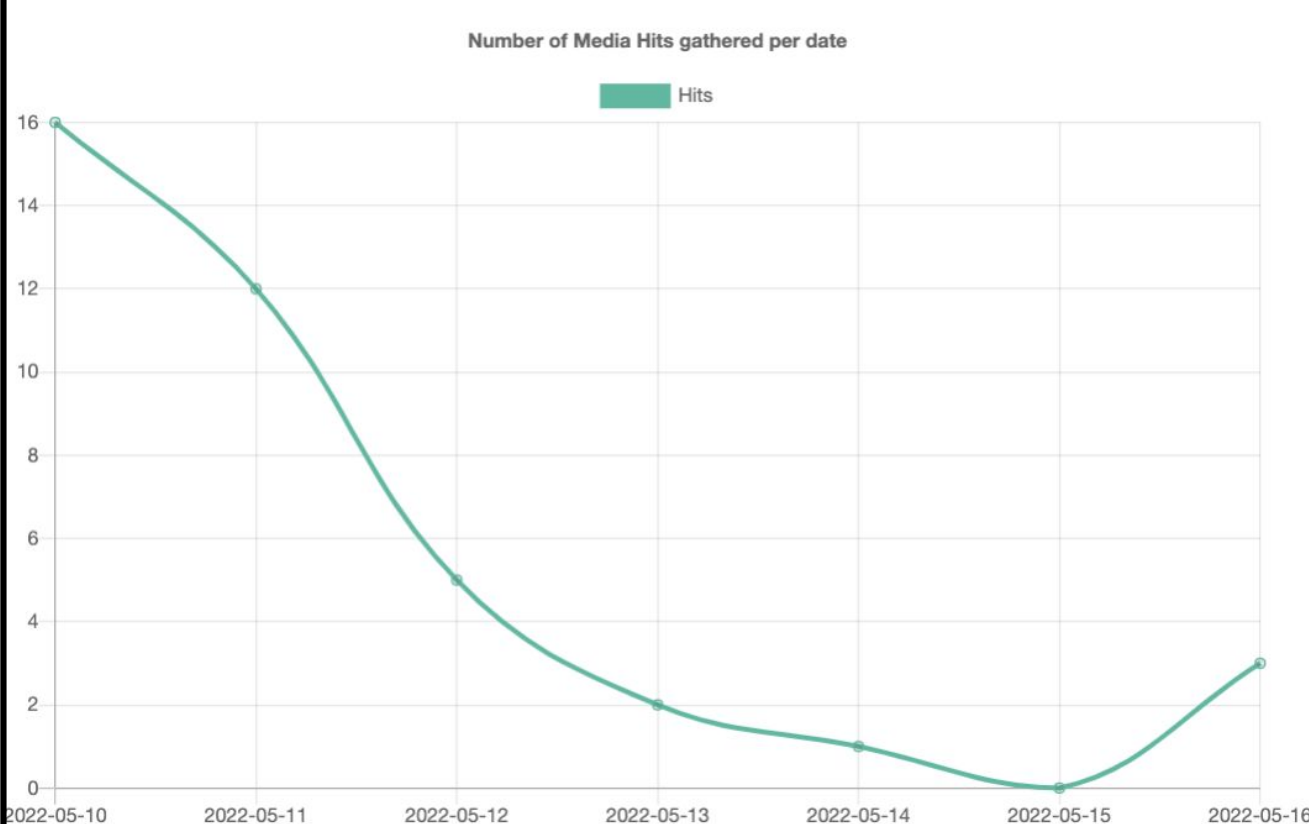


Image 2: Graph to Display # of Hits Over Time

Conclusion

Project Summary:

- Created a frontend component for Digiclips search engine where clients can create, manage, and edit email alerts which will sync to the database
- Set up an AWS system which sends automatically generated email reports to the clients based on the information set on their email alerts
- Digiclips entire codebase is now updated to the latest version of Angular
- Email reports are now user-friendly and the data is displayed in an organized manner
- Created graphical representations of data by performing data analysis on their database using Angular
- Created AWS SES application that allows emails to be sent to the clients

Project Overview and Requirements

Functional Requirements:

- Automated email reports must be user-friendly and easy to read
- System must automatically alert the client about any new media hits
- Media information must be stored in the database in an organized manner
- System must generate graphical representations based on viewer ratings, sentiment analysis, competitor advertisements - related to the keywords searched by the client
- Frontend component should allow clients to create new email alerts

Non-Functional Requirements:

- System should be built without any costly API/cloud resources
- System should be built with AWS and Angular, to maintain thorough documentation
- System should increase the efficiency of Digiclips work

Constraints:

- Developed program must be able to run on an underpowered computer
- System must maintain the organized manner of the email reports
- System must be computationally efficient
- Program should be able to operate quickly enough for clients to query data with 24 hours of recording

Image 4: Email Alerts Page

Email Alerts Form

Keywords:

Media types:

- Radio
- Magazine
- Television
- Newspaper
- Social media

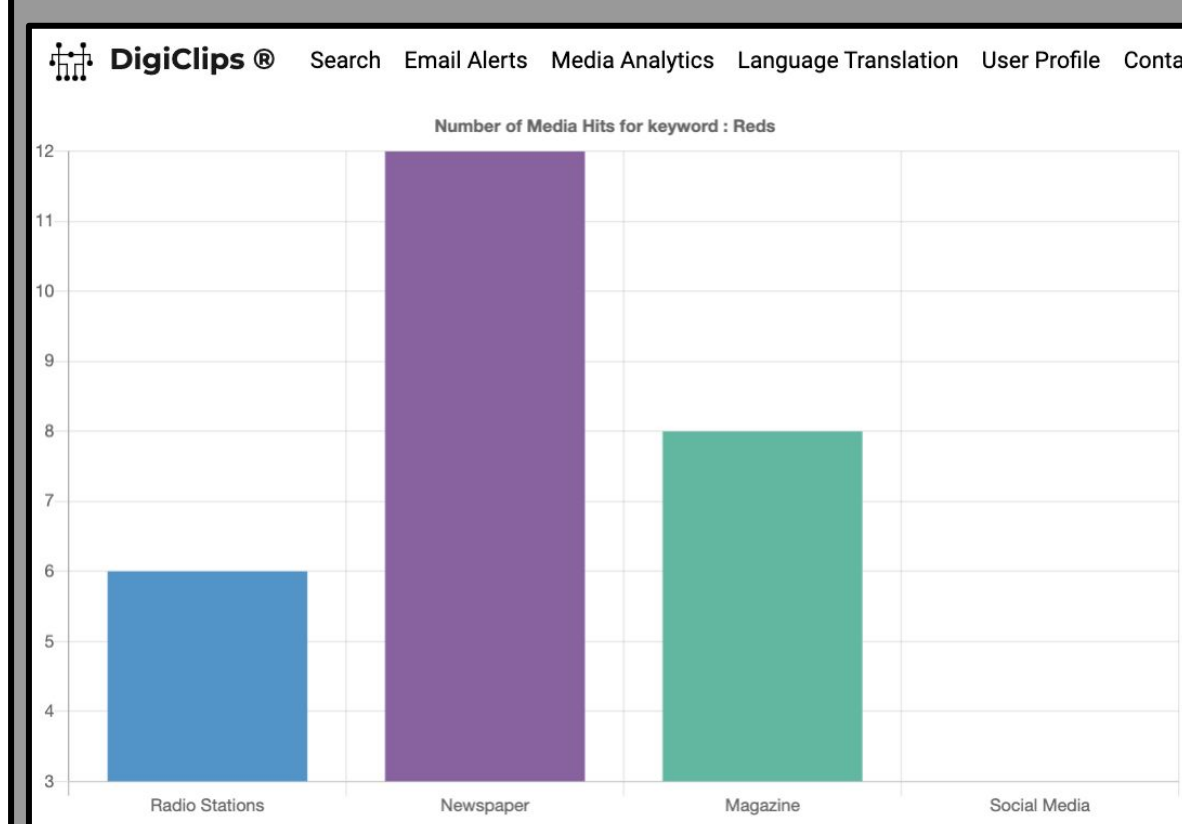
Start date:

Start time:

End date:

End time:

Image 3: Graph to Display # of Hits per Media Type for Keyword "Reds"



Project Implementation

The goal of the overall design is to have a user, someone who may appear or expects to be seen in any media outlet, request that Digiclips helps monitor the user's involvement in any media.

Technology and Tools Used:

- Main components: Angular, AWS, Postman, Remote Desktop, and MySQL
- Coding: Github, Git Bash, OpenVPN Connect, MySQL Workbench, VS Code, AWS SES, AWS SDK for JavaScript, Node.js, Typescript
- Communication: Discord, Google Meet, WebEx

Challenges:

- Lack of documentation in presented material
- Old/Test code and material
- System/Server down and upgrades needed
- Multiple students working on a single code base
- Issues with VPN which restricted access to their system

Results and Impact

Results:

- Clients will now be able to use the frontend search engine to create email report alerts
- Information from email alerts created by clients is being stored in the database
- Clients are able to manage and edit their email alerts at any time
- Email reports are user-friendly and data is displayed in an organized manner
- Graphs are generated from the analyzed data and displayed on the webpage
- Email reports have links to all the media segments preference set by the client
- Admins are happy with the way email reports are displayed
- Admins are able to incorporate our work onto to their search engine

Social Impact:

- Our project is helpful for individuals who contact Digiclips and request their services
- Increased the number of those who are well informed of important topics
- Added a new standard of practice when it comes to marketing
- Created opportunity for economic advancement