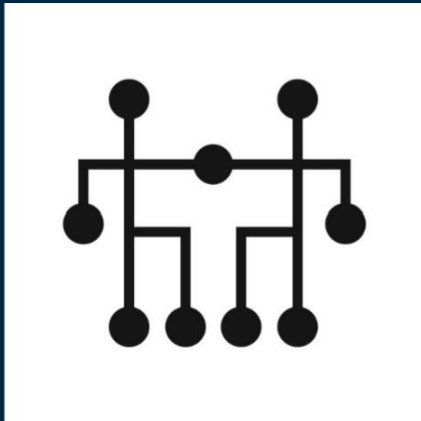


DigiClips Media Monitoring



Sdmay23-03

Team: Aashish Komaragiri
Matthew Karmelich
Khushveen Kaur Umra
Grace Rasmussen
Elijah Shelby

Our Client

- DigiClips, Inc. is a Colorado based media content analysis company
- **Direct Contact:**
 - Chairman: **Bob Shapiro**
 - Senior Software Engineer: **Henry Bremers**
- Professional video editing and advanced research capabilities
- Media services like TV, Radio, Blogs, Websites - Covered in over 210

markets worldwide



Introduction



Project:

To create a search engine application, where Digiclips' clients will be able to create email alerts and query their presence, or specific mentions on different media platforms, such as television, radio, blogs, newspaper, magazines, websites, and social media. The application will also store information from the created email alerts.

Search Engine Application:

- i) Create an email alerts page
- ii) Create automated email reports
- ii) Generate graphical representations of media data hits

Implementation: Design Approach

- Creating a new branch on Github
 - Updating the codebase
 - Analysis: On databases to start creation of graphs for media hits
 - Analysis: Codebase for any discrepancies and errors
 - Initial testing on their application to note down any errors - Fix bugs
 - Research: To use AWS SES to send automated email reports
 - Research: To use AWS SDK to create automated email reports
- 
- 

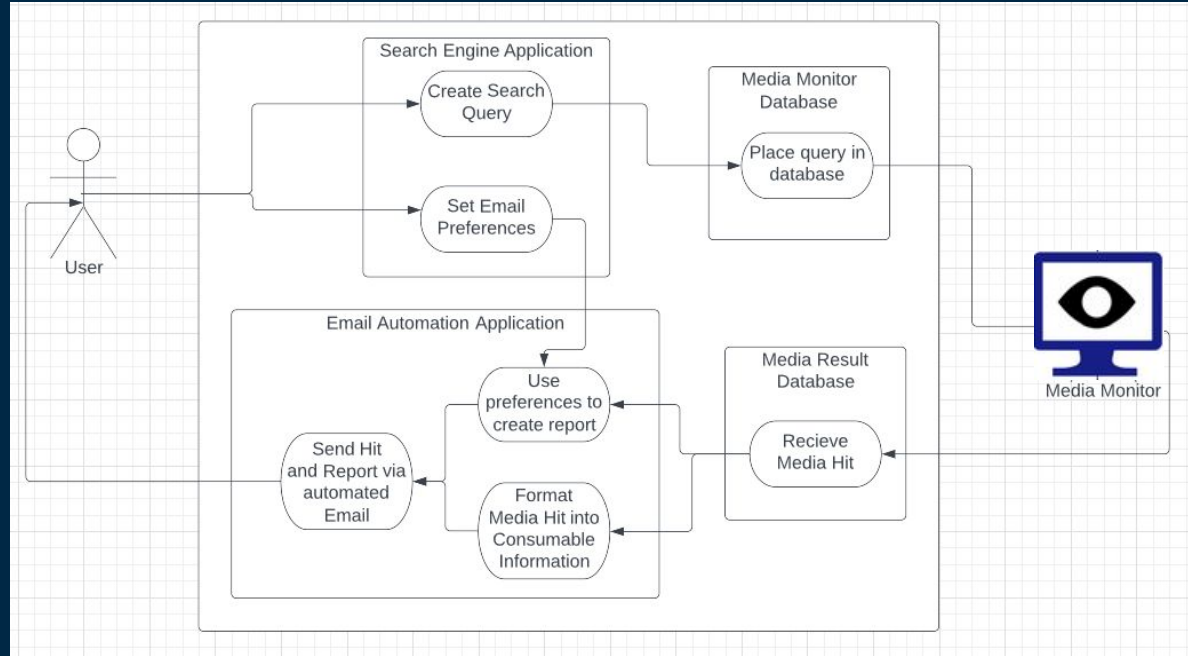
Implementation Architecture - Software

Search Engine(Frontend):
Typescript, Node.js, Angular

Database:
MySQL

Email Automation:
AWS SES, AWS SDK for
JavaScript

Software Development:
Github



Work Accomplishments

Email Alerts Form

Keywords:

Media types:

Radio

Magazine

Television

Newspaper

Social media

Start date:

Start time:

End date:

End time:

Frontend Component - Email Alerts Form

- Allows client to create email alerts
- Clients can add keywords they want to search
- Clients can select the type of media
- Clients can select the specific dates and times
- Clients can add their email to receive reports
- Information added is stored in the database

Work Accomplishments

Email Report - Newspaper

Newspaper Results

[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.

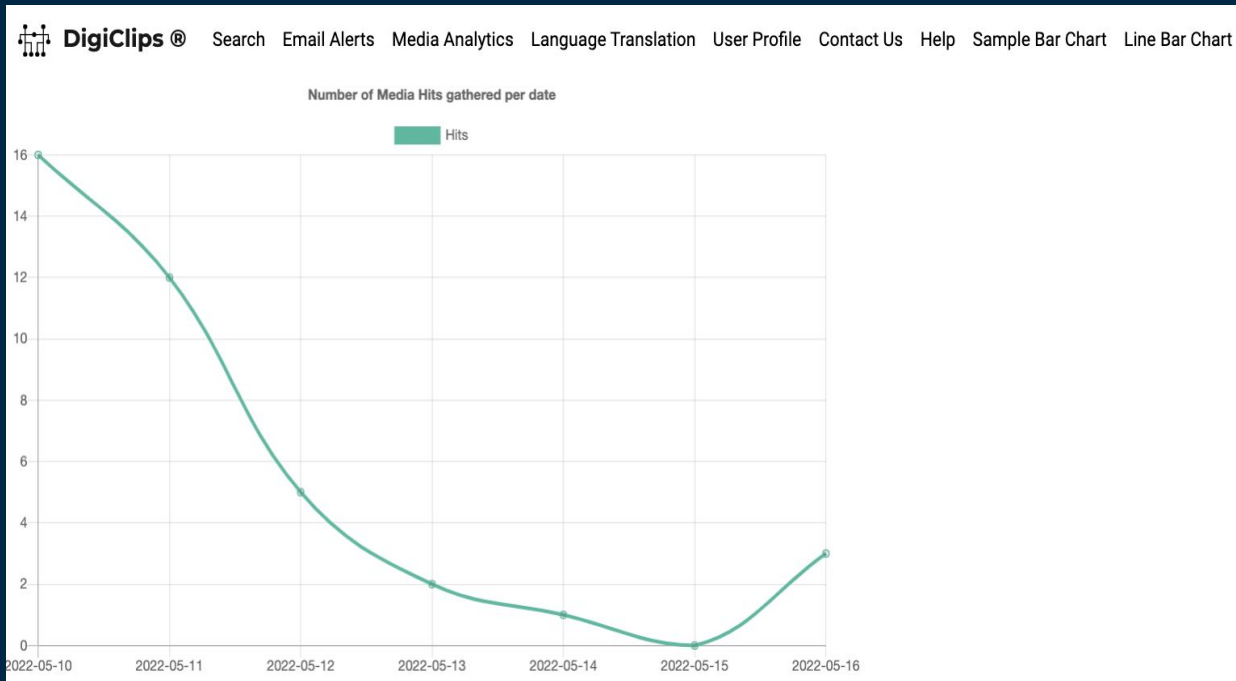
[A's blow save to Cincinnati Reds, allowing starters' ignominious streak to continue](#)

The Mercury News - Curtis Pashelka - April 29, 2023 6:05 PM

...

- Client selected "Newspaper" as media segment
- Client selected "Reds" as keyword
- Once Search is sent, HTML service creates an HTML String
- Client receives email report to their specified email address
- Keyword highlighted throughout the report
- Easy to read - Links to articles

Work Accomplishments



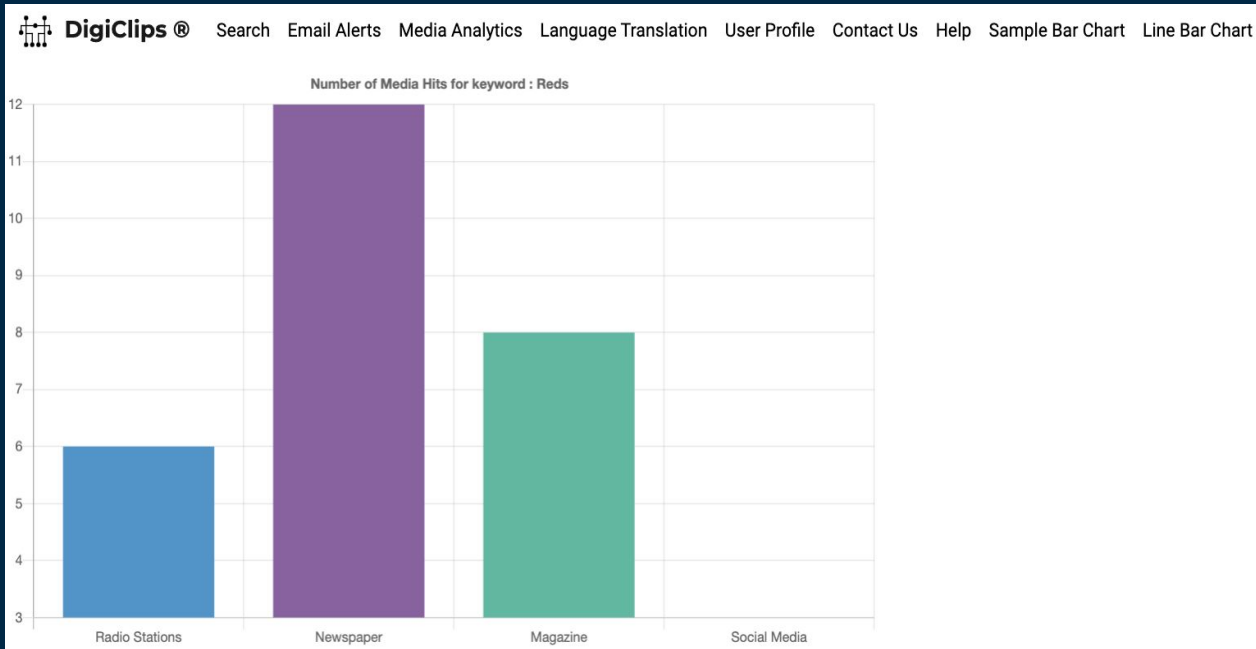
Graphical Representation

- Successful media hits gathered from database
- Media hits according to specific dates
- Admin & Client Access

Work Accomplishments

Graphical Representation

- Successful media hits gathered from database
- Media hits according to specific keywords
- Media hits for “Reds”
- Different media segments
- Highest number of hits for newspaper



Task Responsibilities and Contributions

- **Aashish Komaragiri**
Responsible for Database Analysis and Creation of Graphical Representations
- **Elijah Shelby**
Responsible for Database Analysis and Creation of Graphical Representations
- **Grace Rasmussen**
Responsible for Search Engine Application and Updating the Angular Version
- **Khushveen Kaur Umra**
Responsible for Search Engine Application
- **Matthew Karmelich**
Responsible for Email Automation and Testing

Challenges

1. Lack of documentation in presented material
2. Old code and material
3. Lack of knowledge on given material.
4. System/server down and upgrades needed
5. Multiple students working on a single code base
6. Issues with VPN



Solutions

1. Setup more meetings with client
2. Contacted other teams working with DigiClips
3. Created mockup versions of their application
4. Researched about AWS and Angular
5. Conducted regular analysis of their code base



Testing: AWS SES

```
// Import the required AWS SDK clients and commands
const { SESClient, SendEmailCommand } = require("@aws-sdk/client-ses");
// const { BarChartComponent } = require("../src/app/graphs/bar-chart/bar-chart.compon
```

```
// Set the region and create an SES client object
const sesClient = new SESClient({ region: "us-east-2" });
```

```
// Define the function to send an email
async function sendEmail(subject, content) {
```

```
    // Create the email message
    const message = {
      Subject: {
        Data: subject ? subject : "AWS SES v3 DigiClipsEmail",
      },
      Body: {
        Html: {
          Data: content ? content : "<p>This is a trial test</p>",
        },
        Text: {
          Data: "This is a new trial test",
        },
      },
    };
  };
```

```
    // Set the email addresses
    const source = "digiclipsemail@gmail.com";
```

```
    const destination = {
      ToAddresses: ["aashishkom@gmail.com"],
      CcAddresses: ["aashishkom@gmail.com"],
    };
  };
```

```
    // Create the SendEmail command
    const command = new SendEmailCommand({ Source: source, Destination: destination, Message: message });
```

```
    try {
      // Send the email using the SES client object
      const result = await sesClient.send(command);
      console.log(`Email sent successfully: ${result.MessageId}`);
      return result;
    } catch (err) {
      console.error("Error sending email:", err);
      throw err;
    }
  }
}
```

```
    // Export the function for use in other modules
    module.exports = {
      sendEmail: sendEmail,
    };
  };
}
```

Testing: AWS SES

```
const { SESClient, SendEmailCommand } = require("@aws-sdk/client-ses");
const { sendEmail } = require("../AWSemail/ses_sendemail");

jest.mock("@aws-sdk/client-ses", () => {
  const SESClientMock = jest.fn();
  const SendEmailCommandMock = jest.fn();
  return { SESClient: SESClientMock, SendEmailCommand: SendEmailCommandMock };
});

describe("sendEmail", () => {
  beforeEach(() => {
    SESClient.mockClear();
    SendEmailCommand.mockClear();
  });

  it("sends an email with default subject and content", async () => {
    const sendMock = jest.fn().mockResolvedValue({ MessageId: "testMessageId" });
    SESClient.mockImplementation(() => ({ send: sendMock }));

    const result = await sendEmail();
    expect(result).toEqual({ MessageId: "testMessageId" });
    expect(sendMock).toHaveBeenCalledTimes(1);
    expect(SendEmailCommand).toHaveBeenCalledWith(
      expect.objectContaining({
        Source: "digiclipsemail@gmail.com",
        Message: expect.objectContaining({
          Subject: { Data: "AWS SES v3 DigiClipsEmail" },
          Body: {
            Html: { Data: "<p>This is a trial test</p>" },
            Text: { Data: "This is a new trial test" },
          },
        }),
      })
    );
  });
});
```

```
it("sends an email with a custom subject and content", async () => {
  const sendMock = jest.fn().mockResolvedValue({ MessageId: "testMessageId" });
  SESClient.mockImplementation(() => ({ send: sendMock }));

  const customSubject = "Custom Subject";
  const customContent = "<p>Custom Content</p>";
  const result = await sendEmail(customSubject, customContent);

  expect(result).toEqual({ MessageId: "testMessageId" });
  expect(sendMock).toHaveBeenCalledTimes(1);
  expect(SendEmailCommand).toHaveBeenCalledWith(
    expect.objectContaining({
      Source: "digiclipsemail@gmail.com",
      Message: expect.objectContaining({
        Subject: { Data: customSubject },
        Body: {
          Html: { Data: customContent },
          Text: { Data: "This is a new trial test" },
        },
      }),
    })
  );
});

it("throws an error when email sending fails", async () => {
  const error = new Error("Email sending failed");
  const sendMock = jest.fn().mockRejectedValue(error);
  SESClient.mockImplementation(() => ({ send: sendMock }));

  await expect(sendEmail()).rejects.toThrowError(error);
  expect(sendMock).toHaveBeenCalledTimes(1);
});
```

Future Work

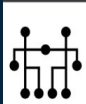
There is a lot more work that can be done for DigiClips as a whole.

We believe that it would be very beneficial for the current components to be better connected and implemented in a way that is much more cohesive.

Various API's and ssh keys held by DigiClips need fixing in order to receive and later filter more media results.



Future Work



Time running out for US financial firms to bid for ailing bank First Republic

Deadline of Sunday set for financial firms such as JPMorgan Chase to table offer for California banks whose shares have plummeted US regulator American lender to fail this year, a sequence of collapses that has drawn uncomfortable parallels with the 2008 global financial crisis. Half a d...

Author: Rob Davies and agencies

Market: Denver, Colorado Audience Numbers Media Values Publicity Value Length Tone



Ukraine set to boycott judo worlds after Russians allowed

BUDAPEST, Hungary (AP) — Ukraine is set to boycott the world judo championships next week after the International Judo Federation sign... has a policy of boycotting any international sports events that allow athletes from Russia and its ally Belarus following the Russian invasion of...

Author: Associated Press

Market: Denver, Colorado Audience Numbers Media Values Publicity Value Length Tone



The on-going search for the fabled river flowing with gold worth \$1 TRILLION beneath Las Vegas

Stalactites taller than the Eiffel Tower, limestone caverns that are 'one of the marvels of the world' and - most stunning of all - a 'river of gold' run... Author: Editor

Market: Denver, Colorado Audience Numbers Media Values Publicity Value Length Tone



Florida's rightwing governor DeSantis backs Badenoch's 'war on woke'

Republican expected to run for nomination supports UK business secretary's attempt to stop the left 'corrupting British society' Florida's rightw... 'the woke'. DeSantis, who is expected to challenge Donald Trump for the Republican nomination for the 2024 presidential electoin, met Badenoc...

Author: Heather Stewart

Market: Denver, Colorado Audience Numbers Media Values Publicity Value Length Tone



Inside America's oldest McDonald's which whips up nostalgia with its original 1953 decor

This fast food joint, located on Lakewood Boulevard in Downey, Southeast Los Angeles County, is the oldest operating McDonald's in the world. Author: Editor

Market: Denver, Colorado Audience Numbers Media Values Publicity Value Length Tone



Willis Tower is no longer the tallest building in the world. But it's still a trendsetter as it turns 50 this week.

Along with the rest of downtown, Willis Tower has experienced ups and downs, including fears raised by the terrorist attacks of 2001 and the Gre... Author: Brian J. Rogal

Market: Denver, Colorado Audience Numbers Media Values Publicity Value Length Tone

- HTML structured report needs slight tweaking to appear the way we want it to. (as shown)
- AWS image support
- This report should be able to extend to other media types in the future.
- There are also different report structures that could be created. (docx & excel)

Conclusion

- Created a frontend component using Angular and HTML, where clients can manage, and edit email alerts which will sync to the database
- Set up an AWS system to create automated email reports
- Update Digiclips' entire codebase to latest version of Angular
- Created user-friendly automated email reports
- Organized media data on the email reports for easy access
- Generated graphs by analyzing their database for media hits using Angular
- Created AWS SES application to send email reports to clients