DigiClips: General Public Access and Admin Control

sdmay25-05

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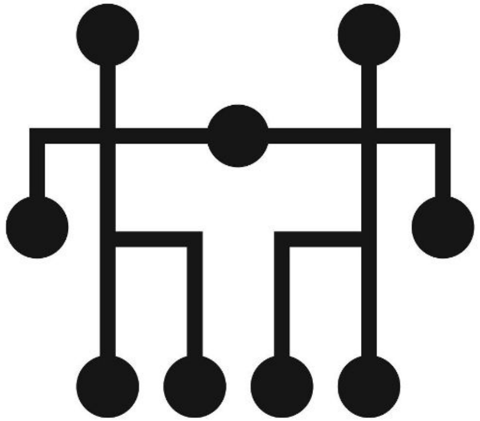
Client: DigiClips

Introduction



The modern media landscape is vast and complex, with content flowing rapidly across various platforms (TV, radio, social media, blogs). Users need accessible, efficient tools to stay informed.

Problem

- Platform originally accessible only to paid users
- No access for general public to try or evaluate the platform
- Limited reach and slower user growth
- Difficult onboarding for new or casual users
- Lack of flexibility in user tiers hindered engagement and promotion

Solution

- Introduced public user access alongside existing paid users
- Created a tiered user model: guest, registered free, and subscribed
- Allows public users to experience core features with limitations
- Encourages platform exploration and increases user acquisition
- Seamless upgrade path from free to paid tiers for interested users

Users

General users who want to try DigiClips first without a subscription (lawyer, reporter)

Admin: manage demo requests and daily limit search

Functional Requirements

Public users can request access to DigiClips without a subscription.

Upgrade the email-alert system to send a notification when a user's access request has been approved.

Hide advanced features from general (non-subscribed) users.

Limit general users to 5 searches per day.

Display advertisements to general users.

Reset the limit search everyday

Enhance the existing admin portal with public-user management features (approve/reject access requests, reset a user's search-limit).

Non-functional Requirements

1

Authenticate and authorize public users via JWT the same way the system handle registered users.

2

Admin dashboard must display real-time updates of demo requests

3

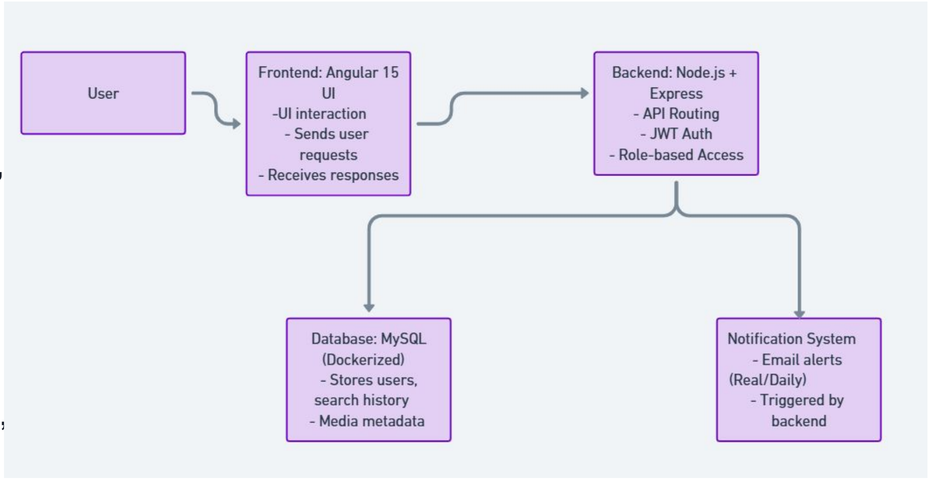
All user actions must execute within 2 seconds

Design Overview

System Architecture

The platform consists of:

- Frontend: Angular (v15) – modular, responsive user interface
- Backend: Node.js with Express, handling API routing, role-based access, and JWT authentication
- Database: MySQL (Dockerized), storing user accounts, search history, media metadata
- Notification System: Sends alerts via email (real-time, daily, or weekly)
- Hosting: Amazon Lightsail for cost-effective scalability



Core System Modules

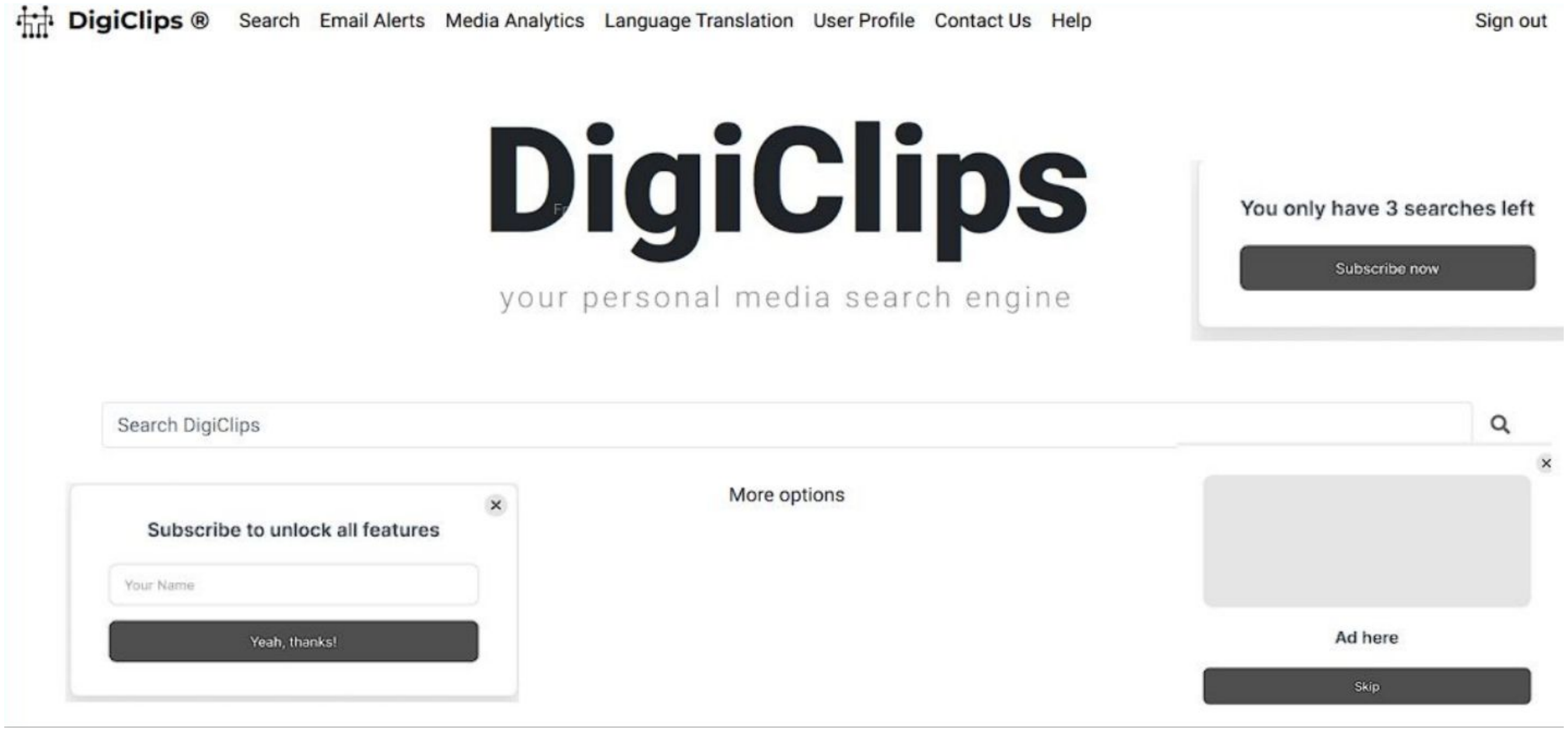
- Search (Main Repo)
  Handles keyword queries and filters media results. Includes guest search counter and ad placeholder.

- Ad Placeholder (Main Repo)
  Static frontend block simulates ad support for free-tier users.

- Email Notifications (Main Repo)
  Onboarding emails sent to approved users using nodemailer.

- Admin Tools (Separate Repo)
  Admin actions like user approvals and email alert management handled in a distinct Node.js project.

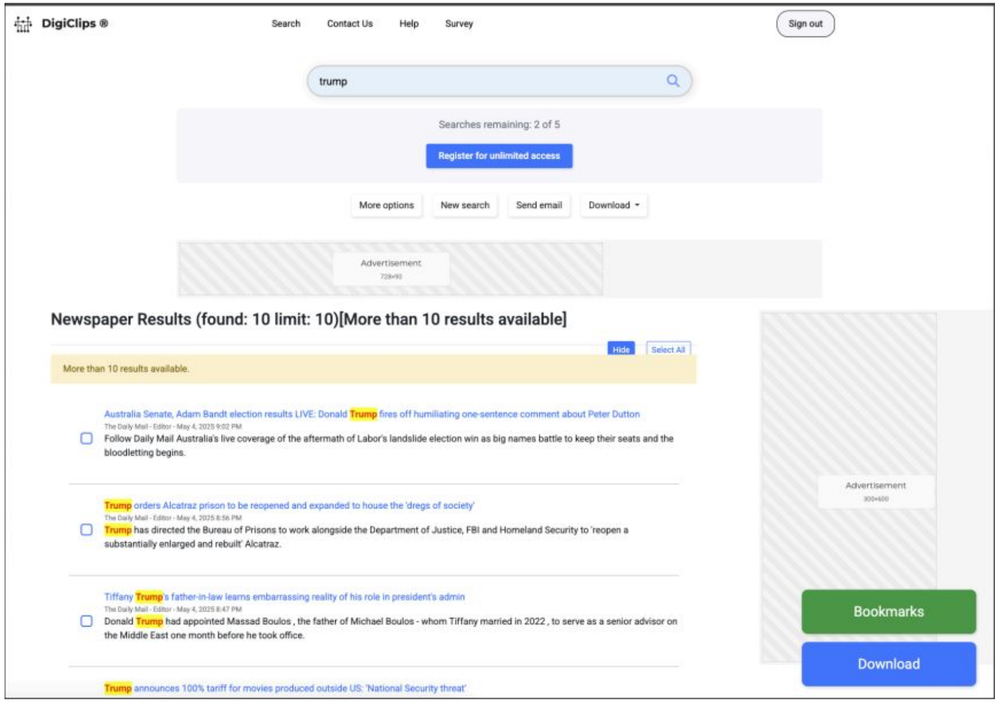
Protype


DigiClips ®
Search
Email Alerts
Media Analytics
Language Translation
User Profile
Contact Us
Help
Sign out
DigiClips
your personal media search engine
You only have 3 searches left
Subscribe now
Search DigiClips
More options
Subscribe to unlock all features
Your Name
Yeah, thanks!
Ad here
Skip

User Interface Design

Non-subscribers access a clean, ad-supported General Public Page with:

- Search input & media-type filters
- 5-search daily cap with visible counter
- In-page ads and subscription call-to-action (CTA)
- Responsive layout for desktop



Searches remaining: 2 of 5

Newspaper Results (found: 10 limit: 10)[More than 10 results available]

More than 10 results available.

Australia Senate, Adam Bandt election results LIVE: Donald Trump fires off humiliating one-sentence comment about Peter Dutton
The Daily Mail - Editor - May 4, 2025 9:02 PM
Follow Daily Mail Australia's live coverage of the aftermath of Labor's landslide election win as big names battle to keep their seats and the bloodletting begins.

Trump orders Alcatraz prison to be reopened and expanded to house the 'dregs of society'
The Daily Mail - Editor - May 4, 2025 8:56 PM
Trump has directed the Bureau of Prisons to work alongside the Department of Justice, FBI and Homeland Security to 'reopen a substantially enlarged and rebuilt' Alcatraz.

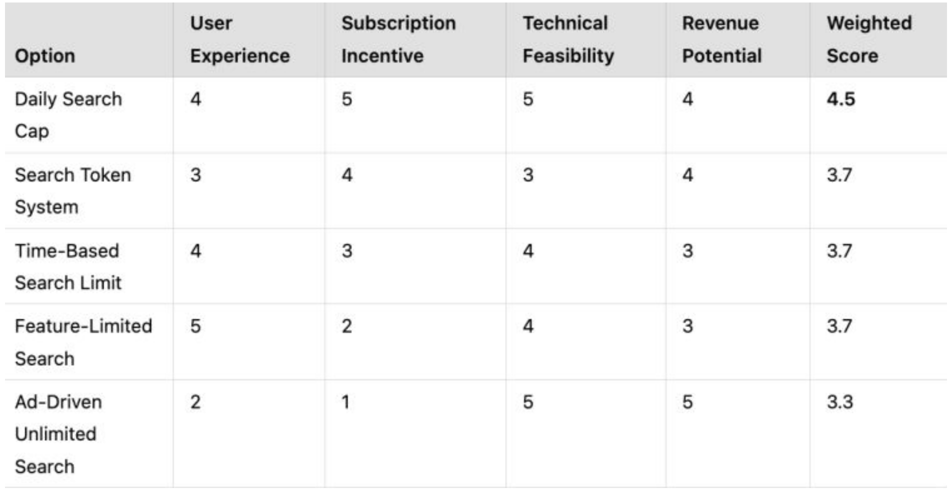
Tiffany Trump's father-in-law learns embarrassing reality of his role in president's admin
The Daily Mail - Editor - May 4, 2025 8:47 PM
Donald Trump had appointed Massad Boulos , the father of Michael Boulos - whom Tiffany married in 2022 , to serve as a senior advisor on the Middle East one month before he took office.

Trump announces 100% tariff for movies produced outside US: 'National Security threat'

Design Tradeoffs & Innovations

We evaluated five access-limitation models:

- Daily Search Cap (Chosen – 5/day)
- Token-based quota
- Cooldown period per search
- Result-depth limits
- Ad-based unlimited access



Option	User Experience	Subscription Incentive	Technical Feasibility	Revenue Potential	Weighted Score
Daily Search Cap	4	5	5	4	**4.5**
Search Token System	3	4	3	4	3.7
Time-Based Search Limit	4	3	4	3	3.7
Feature-Limited Search	5	2	4	3	3.7
Ad-Driven Unlimited Search	2	1	5	5	3.3

Constraints

- Hosting was not implemented by our team; it is part of a future deployment plan coordinated by the client and another team
- Ads were limited to static placeholders due to the lack of a verified production domain, preventing integration with live ad providers
- Ad performance tracking and analytics were not implemented, as they depend on future hosting and production deployment

Google AdSense

Amazon Lightsail

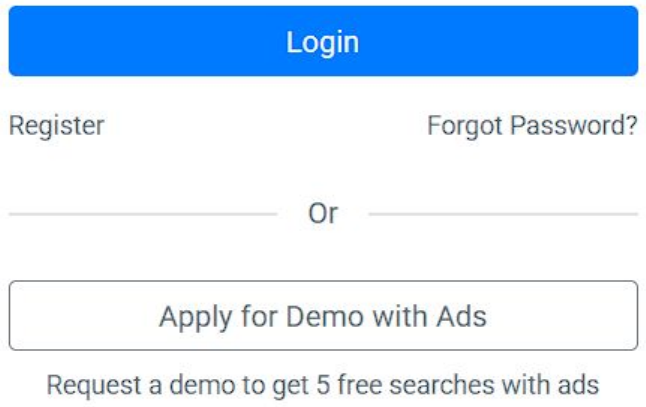
Risk Mitigation

- Fixed guest login issues by creating dedicated JWT handler
- Rebuilt admin approval flow with email notifications and database flags
- Prepared search backend for future scaling (logging, reset logic)

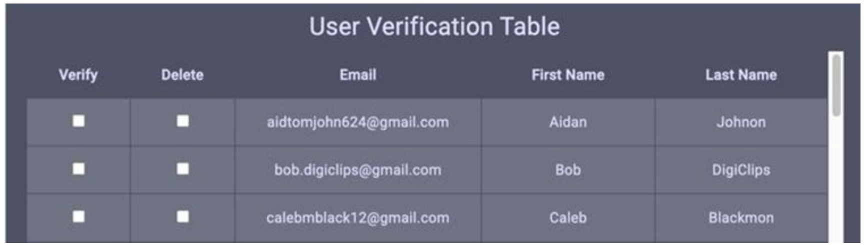
Demo

Demo Video

Our Implementation



Request a demo to get 5 free searches with ads

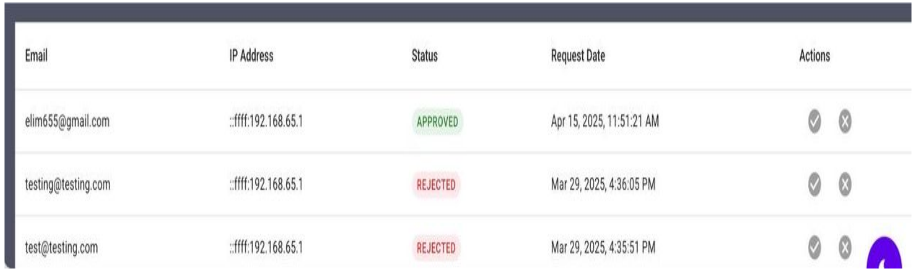

User Verification Table

Verify	Delete	Email	First Name	Last Name
■	■	aidtomjohn624@gmail.com	Aidan	Johnon
■	■	bob.digiclips@gmail.com	Bob	DigiClips
■	■	calebmblack12@gmail.com	Caleb	Blackmon

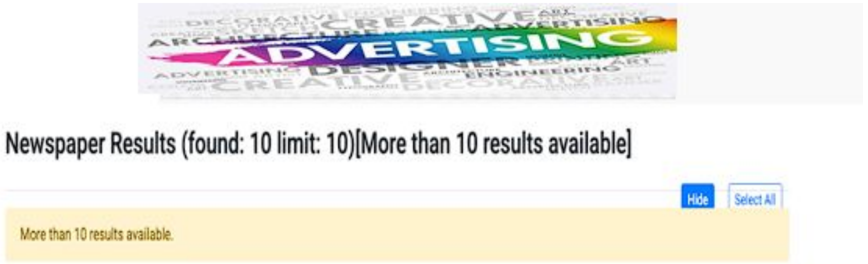
General Public users can register via "Apply for Demo" form

Admin must approve public users' requests before login is allowed

Our Implementation



Email	IP Address	Status	Request Date	Actions
elim655@gmail.com	::ffff:192.168.65.1	APPROVED	Apr 15, 2025, 11:51:21 AM	✓ ⊗
testing@testing.com	::ffff:192.168.65.1	REJECTED	Mar 29, 2025, 4:36:05 PM	✓ ⊗
test@testing.com	::ffff:192.168.65.1	REJECTED	Mar 29, 2025, 4:35:51 PM	✓ ⊗



Newspaper Results (found: 10 limit: 10)[More than 10 results available]

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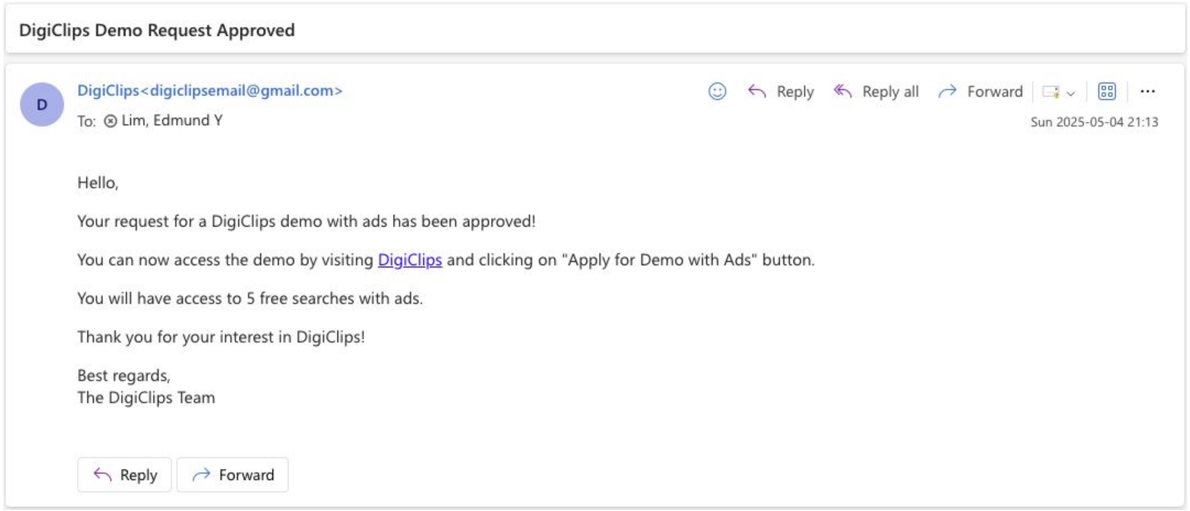
Admins can approve/reject requests and reset search limits

General users can perform up to 5 media searches per day with ad display

Our Implementation



DigiClips Demo Request Approved

D DigiClips<digiclipsemail@gmail.com>

To: Lim, Edmund Y

Sun 2025-05-04 21:13

Hello,

Your request for a DigiClips demo with ads has been approved!

You can now access the demo by visiting DigiClips and clicking on "Apply for Demo with Ads" button.

You will have access to 5 free searches with ads.

Thank you for your interest in DigiClips!

Best regards,
The DigiClips Team

Welcome email is auto-sent when request is approved

Testing Overview

Testing digiclips

Why Testing is Critical for DigiClips:

DigiClips is a real-time media search engine with rich **UI and multiple components interacting**

Testing ensures:

- Stability across complex user actions: Login, search, playback
- Smooth handling of different media formats and dynamic results
- Confidence during feature updates and refactors

Without testing, UI breakages or logic bugs degrade user trust and retention

Testing Strategy Overview

Unit Testing (Jest)

- Tests backend logic (like login, signup, and user validation)
- Fast feedback for server code changes
- Example: Checks if users can log in, sign up, or get rejected for invalid credentials

End-to-End Testing (Cypress)

- Tests real user flows in the browser (like logging in and searching)
- Makes sure the app works as users expect
- Example: Logs in, performs a search, and checks that results and key buttons appear

CI Integration

- All tests run automatically on every pull request or push
- Catches bugs before code is merged
- Keeps the main branch stable

Testing Strategy Overview

Why Jest and Cypress?

Jest (Unit Testing):

- Lightweight, fast, minimal config
- Built-in mocking, coverage reports, snapshot testing
- Well-suited for React + Node ecosystem

Cypress (E2E Testing):

- Runs in a real browser (not headless by default)
- Time travel debugging, screenshots, and video recordings
- No need for manual `waits` — DOM updates tracked automatically
- Ideal for verifying complete user experience

Cypress Usage

Final Thoughts on Testing

- **Testing is foundational** to delivering a stable, scalable media search experience.
- By using **Jest** and **Cypress**, we cover both:
  - Logic correctness (unit tests)
  - Full user flows (end-to-end tests)
- Integrated with **GitHub Actions**:
  - All tests are automatically triggered on **every pull request**
  - **No code is merged unless it passes the full test suite**
  - This enforces code quality, prevents regressions, and ensures a clean main branch
- Result: Confident releases, faster development, and a better user experience.

“If it’s not tested, it’s broken — we just don’t know it yet.”

Next step

A team from the Arizona State University will continue our work and integrate live ads into the system once it is deployed on AWS.

ASU Arizona State University