

EchoNet – Digital Library

Team Members: **Anurag Tripathi (25M0770), Viraj Ashar (25M0756)**
November 23, 2025

Problem Statement

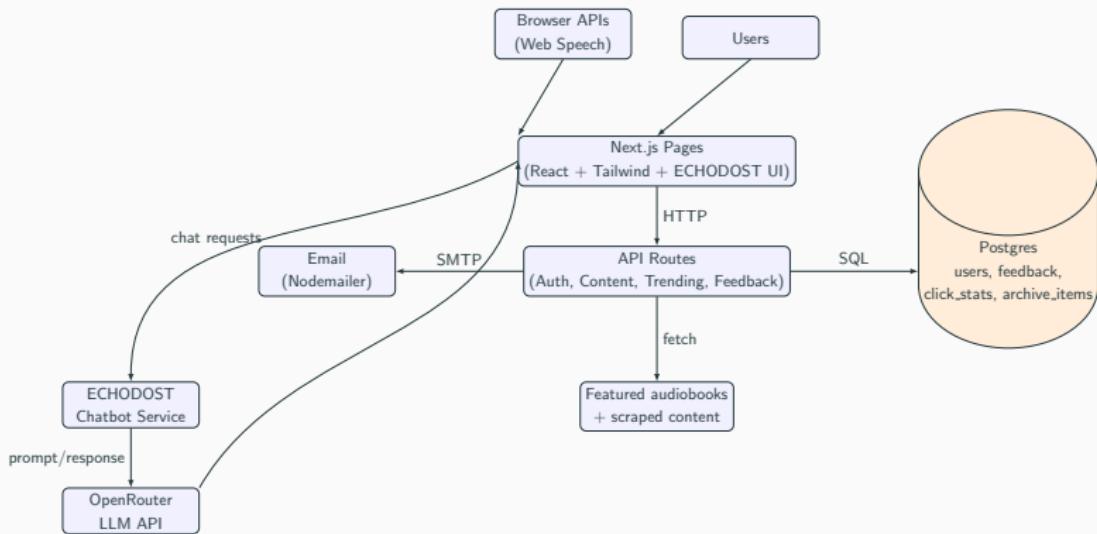
Provide a unified digital library where users can:

- Browse multiple media types (books, audiobooks, images, movies, audio, software).
- Use ECHODOST chatbot for quick help/Q&A.
- View trending items (click-based) and featured audiobooks with read-aloud.
- Manage profiles and submit feedback with email acknowledgements.

Scope and Limitations

- Scope: Multi-media browsing, featured audiobooks, trending, auth/profile, ECHODOST, feedback with DB+email, read-aloud via Web Speech API.
- Limitations: small curated dataset, no robust full-text search, no offline bundles, minimal moderation/admin tools.

Architecture (Data Flow)



Technologies

- Frontend: Next.js, React, Tailwind.
- Backend/API: Node.js (Next API routes).
- Data: Postgres; static featured audiobooks list.
- Comms: Nodemailer (Gmail SMTP).
- Browser: Web Speech API (read-aloud).
- Chat: ECHODOST UI + OpenRouter LLM API.

Data and Audiobooks

- 10 featured public-domain books with text (Gutenberg) and audio (LibriVox) links.
- Click tracking feeds trending; anchors jump into Books/audiobooks section.
- Advantage of scraping: after ingest, serving is independent of the Archive API.

Challenges (Observed)

- Internet Archive limit of 10k items/request; unclear continuation beyond 10k.
- Large data scale: avg 8.75 MB/request; 16 requests \approx 140 MB; full set \approx 70.5 GB.
- Time: 16 requests \approx 3 minutes; full scrape \approx 26 hours.
- Slow DB-to-UI loading initially.
- No prior experience with chatbot.
- No prior experience sending emails on feedback.

Resolutions

- Used response cursor to paginate beyond 10k; indexed DB to speed queries.
- Sampled ~20k items per category to reduce complexity.
- Implemented Nodemailer for feedback acknowledgements.
- Learned chatbot implementation (ECHODOST) via documentation.
- Built pages with Next.js/Tailwind; used PostgreSQL for persistence.

Commit Logs — Anurag Tripathi

- FEAT: Tweaks-2; Adding the audio book final tweaks
- FEAT: Contact updation and feedback
- FEAT: Added Profile; Removing favourite
- FEAT: Added Favorites page to display and manage user favorites
- FEAT: Implemented page design of categories (filters)
- FEAT: Implemented design of homepage
- FEAT: Created backend GET route /api/by

Commit Logs — Viraj Ashar

- FEAT: Added logo and theme color; Implemented SVG logo
- FEAT: Added search bar on the homepage
- FEAT: Implemented chatbot using the OpenRouter gateway service
- FIX: Fixed designs on the homepage and category; Fixed bugs for user profile creation
- FEAT: Implemented trending feature

Commit Logs — Viraj Ashar

- FEAT: Chunked the database to 1,000,000 items and fixed search filter
- FEAT: Created backend routes to get data on homepage and category pages
- FEAT: Filtered languages, subjects, years from items and inserted in DB
- FEAT: Script to create database from scraped JSON data
- FEAT: Implemented the python script to scrape archive items
- Setup Done

Project Screenshots — Home



ECHONET
Library for Everyone

Books Image Movies Audio Software Hi_nikru Profile Log out

OPEN LIBRARY
Open knowledge for everyone

Download, share, and enjoy—free, offline-ready resources for all.

Search books, movies, audio, software...

Search

Browse Categories

Movies Image Books Audio Software

Top 50 Monthly Viewed

DBSB
F
Downloads: 8.8M Size: 215 KB
Download Show details

Maher
للمزيد من المعلومات ، يرجى زيارة موقعنا على الإنترنت: [Maher.info](#).
QRAN - NOBLE CORAN - القرآن الكريم كتب إسلامية Watch tv online - مكتبة القرآن الكريم على الإنترنت.
Anasheed - أناشيد إسلامية - أناشيد إسلامية مفتوحة للجميع - أناشيد إسلامية مفتوحة للجميع.
Downloads: 2.7M Size: 1103500 KB

Trending

Pride and Prejudice
A classic comedy of manners following Elizabeth Bennet and Mr. Darcy through misunderstandings, wit, and growth.
Clicks: 10 Lang: English Downloads: 0
Open Show details

DBSB
F
Clicks: 4 Downloads: 0
Open Show details

Chat with EchoDost

Project Screenshots — Movies

 ECHONET
Library for Everyone

Books Image Movies Audio Software Hi_nku Profile Log out

FILTERS [Movies](#)

TITLE / DESCRIPTION

Search...

LANGUAGE

All

YEAR

All

SUBJECTS

ΑΥΤΗ ΒΟΥΛΗ ΕΘΝΙΚΙΣΜΟΣ
ΕΛΛΑΣ ΗΛΙΟΠΟΥΝΑΣ ΘΕΣΣΑΛΙΑ
ΛΑΪΚΟΣ ΜΙΧΑΛΟΝΙΑΚΟΣ
ΣΥΝΑΓΕΡΜΟΣ ΧΡΥΣΗς ριζώ
ΑΤΟ Βοριάνη ΒΓΓΤΡΚ ΒΣΥ
Βίαια Βίαιο ΔΗΡ

[Clear](#) [Apply](#)

Movies
Found 19970 items

Sort By

How to Be Well Groomed [Open](#)

Siblings Don and Sue show how they keep themselves well groomed throughout the school week and for their Friday night dates.

Lang: N/A Downloads: 312579 Size: 754.71 MB

[Download for Offline Access](#)

Troll Face CapCut Template [Open](#)

Troll Face CapCut Template

Lang: eng Downloads: 238858 Size: 15.99 MB

[Download for Offline Access](#)

Charlie Chaplin [Open](#)

Charlie Chaplin movie

Lang: N/A Downloads: 215456 Size: 319.22 MB

[Download for Offline Access](#)

The Men Who Built America [Open](#)

John D. Rockefeller, Cornelius Vanderbilt, Andrew Carnegie, Henry Ford and J.P. Morgan rose from obscurity and in the process built modern...

Lang: N/A Downloads: 208760 Size: 7.32 GB

[Download for Offline Access](#)

G 01 SD [Open](#)

01

Lang: N/A Downloads: 164269 Size: 149.85 MB

[Download for Offline Access](#)

Egybest V13.4.3 [Open](#)

أيجي بست الأصل - مشاهدة و تحميل الأنوار والسلسلات مجانا

Lang: arn Downloads: 154094 Size: 72.27 MB

[Download for Offline Access](#)

يطل 157 سحر (الجزء 1) الشيخ خالد الحبيبى [Open](#)

أرجو أن لا ينفعك السلام

Lang: N/A Downloads: 1385176 Size: 1.18 GB

6 FC 130068987 F 1 F 59 F 9 F 943 BC 28 BF 22793 [Open](#)

vunf61531

Lang: N/A Downloads: 118293 Size: 1.12 GB

[Chat with EchoDost](#)

Project Screenshots — Images

The screenshot shows the EchoNet Library for Everyone interface, specifically the 'Images' section. The top navigation bar includes links for Books, Image, Movies, Audio, Software, Hi_niku, Profile, and Log out. On the left, there's a sidebar with filters for Title / Description, Language (All), and Subject (Greek terms like Ελλήνων, Ελληνικής, Ιστορία, Κάθημα, Καζάκοι, Νόσοι, Νοϊς, Παραδοσιακή, Πολιτισμός, Ρωμαϊκή, νοϊς, Βακτικό, Βακτικός, Γραπτούς, Κυπρια, Οιστρασκή, Σανάκια, Σολούγι, Τιτανία). Below these are 'Clear' and 'Apply' buttons.

The main content area displays a grid of image items:

- DBSB**: Found 19442 items. Item details: Lang: N/A, Downloads: 8997401, Size: 215 KB. Buttons: Open, Download for Offline Access.
- PS 24 E 06**: Item details: Lang: N/A, Downloads: 2595326, Size: 646 KB. Buttons: Open, Download for Offline Access.
- backtff**: Item details: Lang: N/A, Downloads: 1162817, Size: 99 KB. Buttons: Open, Download for Offline Access.
- BBS 01**: Item details: Lang: N/A, Downloads: 1028645, Size: 100 KB. Buttons: Open, Download for Offline Access.
- haa.png**: Item details: Lang: N/A, Downloads: 898516, Size: 32 KB. Buttons: Open, Download for Offline Access.
- Wwe Network**: Item details: Lang: N/A, Downloads: 7086526, Size: 100 KB. Buttons: Open, Download for Offline Access.
- 2018 01 19 MYNDERSE**: Item details: Lang: N/A, Downloads: 644869, Size: 2.75 MB. Buttons: Open, Download for Offline Access.
- Amazon Fire TV**: Item details: Lang: N/A, Downloads: 816342, Size: 271 KB. Buttons: Open, Download for Offline Access.

A right-side sidebar titled 'ECHO ASSISTANT' contains a text input field with placeholder 'Ask anything about the library' and a 'Send' button. It also lists some sample questions and answers:

- Hi! I can help you discover books, movies, and audio on EchoNet. What do you need?
- Find me a sci-fi audiobook
- Show popular Hindi books
- Best books for DBMS
- Recommend a family movie night pick
- How to access ML lectures of MIT

Project Screenshots — Books / Audiobooks

The screenshot displays the 'Books' section of the Echonet website. At the top left is the Echonet logo and the tagline 'Library for Everyone'. The top right features navigation links: Books, Image, Movies, Audio, Software, Hi_niku, Profile, and Log out. A search bar is positioned at the top center.

FILTERS (left sidebar):

- TITLE / DESCRIPTION
- Search... (input field)
- LANGUAGE: All
- YEAR: All
- SUBJECTS (checkboxes): Короли, Ты, Валерияк, Гагарина, Гурек, Грушки, Дерпт, Енверзара, Енвероз, Зоумит, Кекоя, Корин, КомпьютерПресс, Корын, Корынагат, Корынан, Куссоя, Курен, Курякот, Курмын

LIBRARY Books (main title): Found 19720 items

FEATURED AUDIOBOOKS: Listen or read these first

Pride and Prejudice by Jane Austen: A classic comedy of manners following Elizabeth Bennet and Mr. Darcy through misunderstandings, wit, and growth. Language: English. Buttons: Listen (Audiobook), Read the Book, Read aloud.

The Adventures of Sherlock Holmes by Arthur Conan Doyle: Short detective stories featuring Sherlock Holmes and Dr. Watson solving mysteries in Victorian London. Language: English. Buttons: Listen (Audiobook), Read the Book, Read aloud.

The Call of the Wild by Jack London: A sled dog named Buck is thrust into the harsh Yukon and discovers his primal instincts. Language: English. Buttons: Listen (Audiobook), Read the Book, Read aloud.

The Metamorphosis by Franz Kafka: Gregor Samsa wakes as an insect, facing alienation and shifting family dynamics. Language: English. Buttons: Listen (Audiobook), Read the Book, Read aloud.

Black Beauty by Anna Sewell: The life of a horse told in first person, highlighting kindness, hardship, and empathy. Language: English. Buttons: Listen (Audiobook), Read the Book, Read aloud, Chat with EchoDost.

Project Screenshots — Audio

 ECHONET
Library for Everyone

Books Image Movies Audio Software Hi_niku Profile Log out

FILTERS [Audio](#)

TITLE / DESCRIPTION

Search...

LANGUAGE

All

YEAR

All

SUBJECTS

ΑΓΟΡΕΣ Δάσκη ΚΑΤΟΧΗ
ΜΠΑΡΒΟΥΖΑΣ ΡΟΒΟΣ ΣΤ.
ΤΡΑΠΕΖΕΣ ΧΑΤΖΗΔΙΑΚΟΣ
απόριη Αγανά Αραδό¹
Аудиокниги Бабаджы Баллады
Болгаре Вънчка Вънчанум

Clear Apply

LIBRARY [Audio](#)

Found 19894 items

Maher [Open](#)

GURAN - NOBLE CORAN - القرآن الكريم كتب إسلامية - Watch tv online - مكتبة القرآن - القرآن الكريم على الأنترنت - مكتبة آنلاین - Info For Web Muslima...
Lang: N/A Downloads: 2698145 Size: 1.05 GB

[Download for Offline Access](#)

Mhsny [Open](#)

GURAN - NOBLE CORAN: <http://www.tquran.com/>; Watch tv online: <http://www.chofo.com/>; free image upload solution: ...
Lang: N/A Downloads: 1185253 Size: 1002.93 MB

[Download for Offline Access](#)

The Six Shooter - Single Episodes [Open](#)

THE SIX SHOOTER The Six Shooter brought James Stewart to the NBC microphone on September 20, 1953, in a fine series of folksy Western...
Lang: N/A Downloads: 964428 Size: 1.03 GB

[Download for Offline Access](#)

mhsny - المصحف المرتل للقرآن الشيخ مشари بن راشد الغفار [Open](#)

- The Holy Quran Recited by Sheikh Moushari Bin Rashid Al-Afasy
Lang: N/A Downloads: 698822 Size: 2.72 GB

[Download for Offline Access](#)

Ankr الصيام و النساء هن الرؤوس [Open](#)

No description
Lang: N/A Downloads: 247286 Size: 27.26 MB

[Download for Offline Access](#)

Super Nintendo (full_rom_pack) [Open](#)

Complete Snes ROM pack With some hacked/modded versions of old games (ROM/hacks)
Lang: eng Downloads: 224857 Size: 692.17 MB

[Download for Offline Access](#)

شيلة الوقت جابر [Open](#)

No description

[Chat with EchoDost](#)

Project Screenshots — Software

The screenshot shows a software catalog page from the Echonet Library for Everyone website. The top navigation bar includes links for Books, Image, Movies, Audio, Software, Hi_niku, Profile, and Log out. On the left, there are filters for Title / Description, Language (All), Year (All), and Subjects, which include categories like роскошь, Акция, Авиация, Акция, Красота, ПМК, Наполеон, ГПК, Рио, Розово, Спорт, Стенограф, Транспортеры, Форус, Фитнес, Элит, арх., квадроцикла, и т.д., and мобилка. A 'Clear' button and an 'Apply' button are also present. The main content area displays a grid of software items:

- setup_redlauncher** (Open) - CDRP's official Red Launcher .MSI installer, September 2023. Lang: eng | Downloads: 1159879 | Size: 536.88 MB. Download for Offline Access.
- Rocky's Boots (1982) (The Learning Company)** (Open) - Rocky's Boots is an educational logic puzzle game by Warren Robinett and Leslie Grimm, published by The Learning Company in 1982. It was... Lang: eng | Downloads: 872451 | Size: 384 KB. Download for Offline Access.
- Gacha Life 2** (Open) - Games. Lang: N/A | Downloads: 586158 | Size: 229.00 MB. Download for Offline Access.
- Launch on Boot 1.1.3** (Open) - When the device boots, it will open an app that has been pre-selected by the user. On Android TV, this will allow the user to open a TV app. If can... Lang: N/A | Downloads: 308322 | Size: 6.41 MB. Download for Offline Access.
- Anime Slayer V 2.1.6** (Open) - Anime Slayer V 2.1.6. Lang: N/A | Downloads: 318785 | Size: 9.25 MB. Download for Offline Access.
- Drak Play(Roja) 2021** (Open) - app play dark roja apk. Lang: N/A | Downloads: 290182 | Size: 11.78 MB. Download for Offline Access.
- unc0ver-file** (Open) - U0. Lang: N/A | Downloads: 278093 | Size: 15.17 MB.
- stvplayer** (Open) - STV Player Mobile devices. Lang: N/A | Downloads: 272889 | Size: 14.14 MB. Chat with EchoDost.

Project Screenshots — Contact / Feedback

The screenshot displays two main sections of the EchoNet website: 'Project Screenshots' and 'Contact / Feedback'.

Project Screenshots: This section shows two items from the library:

- 40 Mind Control Patents**:
Lang: spa | Downloads: 27113 | Size: 401.00 MB
Download book | Read aloud | Open
- Electronics Today International (25 issues)**:
For electronics technicians and computing enthusiasts, electronics magazine, Computers magazine, electronics hobbyist, electronic projects
Lang: English | Downloads: 24262 | Size: 8.70 GB
Download book | Read aloud | Open

Pagination: Page 1 / 986 | 1 | Go | Previous | Next

Contact / Feedback: This section is titled 'CONTACT US' and includes a form for users to share their questions or feedback.

Have a doubt or need help?
Share your questions here, and we will get back to you by email.

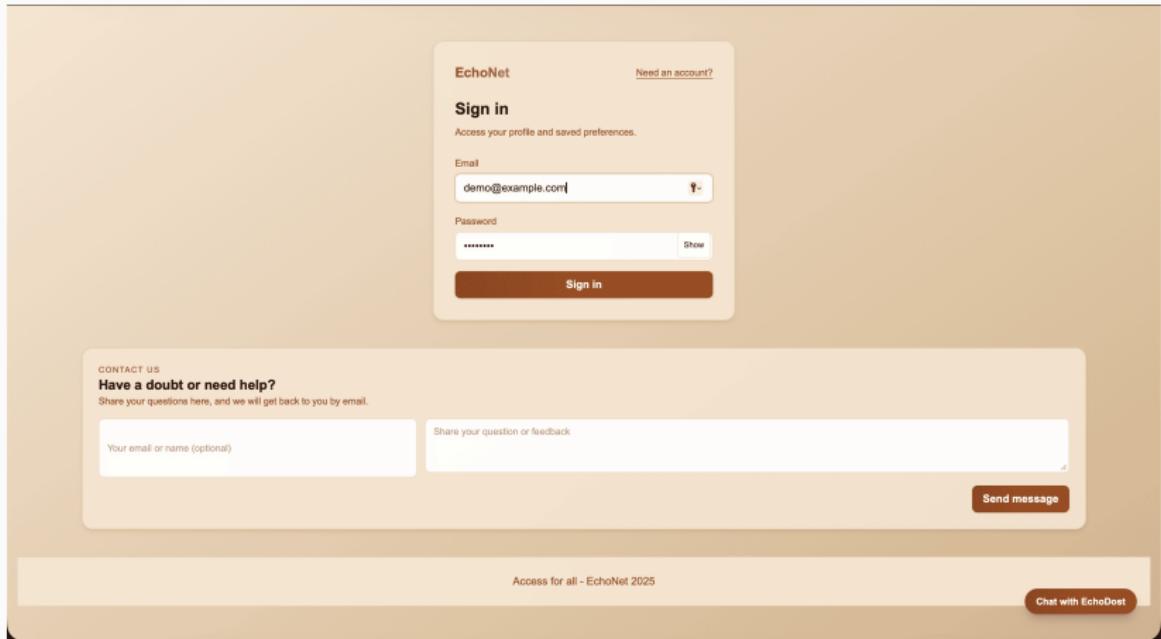
Your email or name (optional): Share your question or feedback:

Send message

Access for all - EchoNet 2025

Chat with EchoDost

Project Screenshots — SignIn



Project Screenshots — SignUp

The screenshot shows the 'Create an account' page for EchoNet. The page has a light beige background with a white form area. At the top right, there is a link 'Have an account?'. The form fields include:

- Name:** Community volunteer
- Phone / Number:** +1 555 123 4567
- Address:** School or community location
- Age:** A dropdown menu with options 18, 21, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, and Prefer not to say.
- Gender:** A dropdown menu with options Male, Female, Non-binary, and Prefer not to say.
- Email:** An input field.
- Password:** An input field with a 'Show' button to the right.
- Create account:** A large brown button at the bottom of the form.

At the bottom left, there is a 'CONTACT US' section with the text 'Have a doubt or need help?'. At the bottom right, there is a 'Chat with EchoDost' button.

Project Screenshots — Profile

The screenshot shows a web application interface for managing a user profile. At the top, there is a header bar with the EchoNest logo, the text "Library for Everyone", and navigation links for Books, Image, Movies, Audio, Software, and Sign out. Below the header is a large central box titled "Your profile". Inside this box, there is a sub-instruction: "Edit your info for offline learning outreach." A form is present with two input fields: "Name" containing "niknu" and "Email" containing "anurag@gmail.com". Below the form is a "Bio" section with the text "anurag". At the bottom of the "Your profile" box are two buttons: "Save changes" and "Sign out". Below this main box is another section titled "CONTACT US". It includes a heading "Have a doubt or need help?", a sub-instruction "Share your questions here, and we will get back to you by email.", and two input fields: one for "Your email or name (optional)" and one for "Share your question or feedback". To the right of these fields is a "Send message" button. In the bottom right corner of this section is a "Chat with EchoDost" button.

Future Work

- Richer datasets.
- Admin dashboard for feedback and trending moderation.
- Offline bundles.
- Deeper chatbot knowledge base and analytics.
- Implement audio feature in ECHODOST.

Thank You

```
echo "bye, see you again..."
```