



Scrollflix: Capturing Engagement As A Multidimensional Datapoint

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Trailer Demo

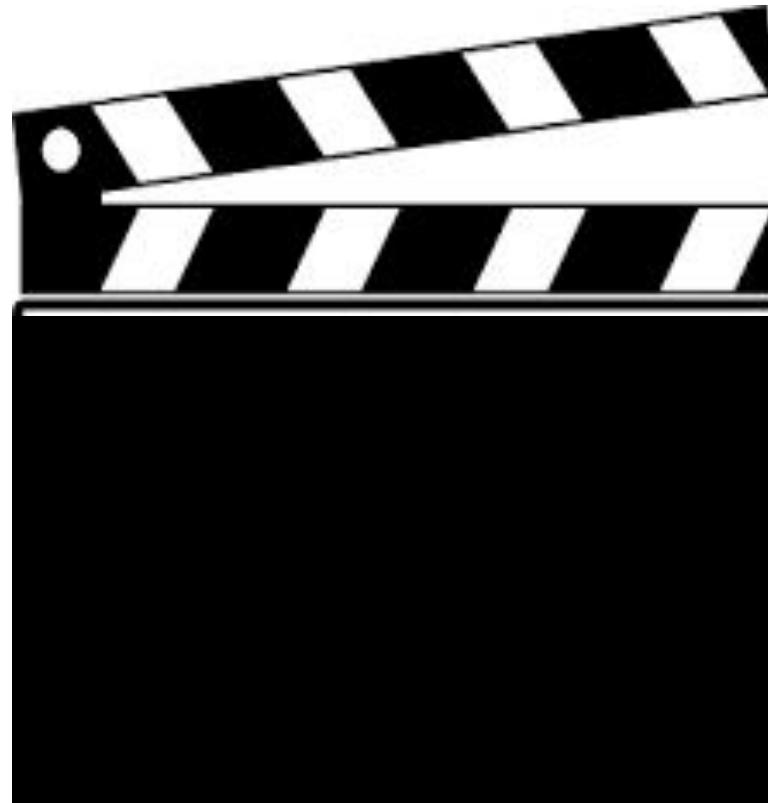




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Problem Statement

- Data is new oil. [1]
- User account required registration limit data collection.
- Data captioning via users' scrolls and stalls.
- More users' engagement == more profit.
- Demonstrate utility of user interaction event with content curation.



Data is new oil.

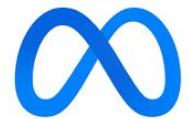


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Background & Related Works

- ElasticSearch for logged-in users and site visitors data collection.
- Facebook's News Feed algorithm [1].
- Netflix's relevant content suggestion [2].
- Amplitude's Product Analytics Dashboard [3].



NETFLIX



Minh

[1] 2022. The new AI-powered feature designed to improve feed for everyone. Meta AI (Oct 2022). <https://ai.facebook.com/blog/facebook-feedimprovements-ai-show-more-less/>

[2] Netflix Technology Blog. 2017. What's trending on Netflix? Medium (Apr 2017). <https://netflixtechblog.com/whats-trending-on-netflix-f00b4b037f61>

[3] Amplitude's API <https://www.docs.developers.amplitude.com/analytics/apis/>



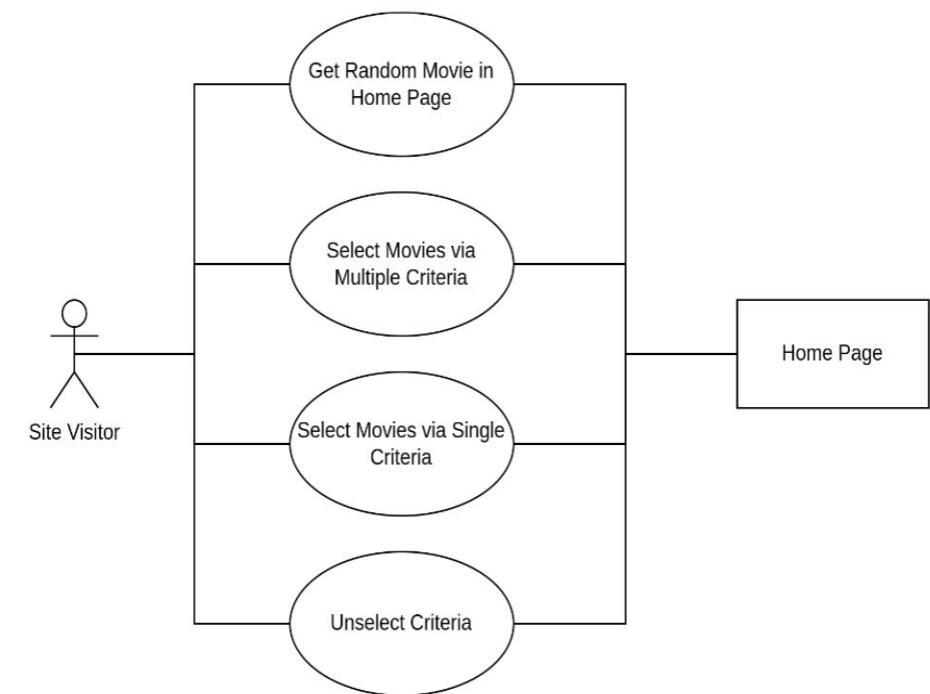
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Use Case 1: Home Page

The screenshot shows the Scrollflix website interface. At the top, there is a navigation bar with buttons for "All Movies" (selected), "Recommended Movies", and "Most-watched + Stakeholder-paid Movies". Below the navigation, a banner says "Movie suggestion at your finger tip!". The main content area displays three movie cards:

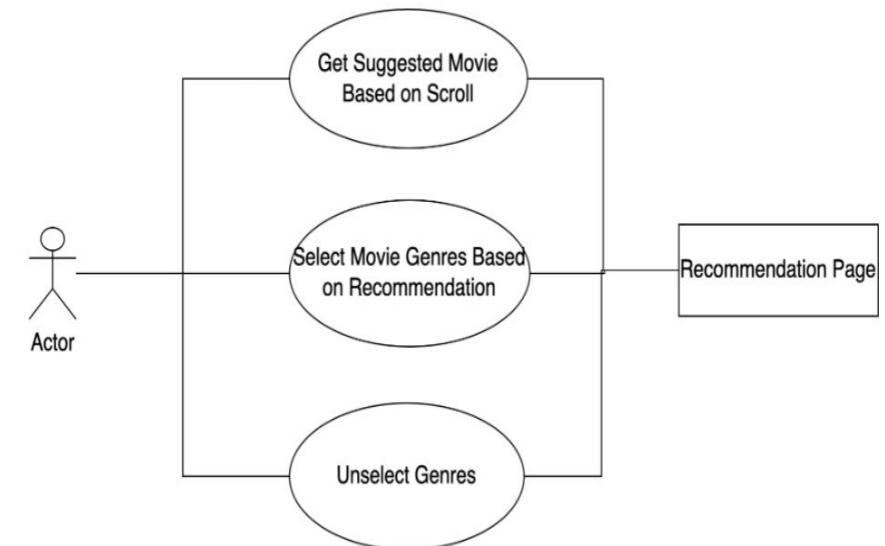
- Shawshank Redemption**: About: Chronicles the experiences of a formerly successful banker as a prisoner in the gloomy jailhouse of Shawshank after being found guilty of a crime he did not commit. The film portrays the man's unique way of dealing with his new, torturous life; along the way he befriends a number of fellow prisoners, most notably a wise long-term inmate named Red.
Actors: Tim Robbins, Morgan Freeman, Bob Gunton, William Sadler, Clancy Brown.
- The Godfather**: About: The Godfather "Don" Vito Corleone is the head of the Corleone mafia family in New York. He is at the event of his daughter's wedding. Michael, Vito's youngest son and a decorated WW II Marine is also present at the wedding. Michael seems to be uninterested in being a part of the family business. Vito is a powerful man, and is kind to all those who give him respect but is ruthless against those who do not. But when a powerful and treacherous mob wants to sell drugs and needs the Don's influence for the same, Vito refuses to do it. What follows is a clash between Vito's fading old values and the new ways which may cause Michael to do the thing he was most reluctant in doing and wage a mob war against all the other mafia families which could tear the Corleone family apart.
Actors: Marlon Brando, Al Pacino, James Caan, Richard S. Castellano, Robert Duvall.
- The Dark Knight**: About: Set within a year after the events of Batman Begins (2005), Batman, Lieutenant James Gordon, and new District Attorney Harvey Dent successfully begin to round up the criminals that plague Gotham City, until a mysterious and sadistic criminal mastermind known only as "The Joker" appears in Gotham.



Use Case 1 Diagram.

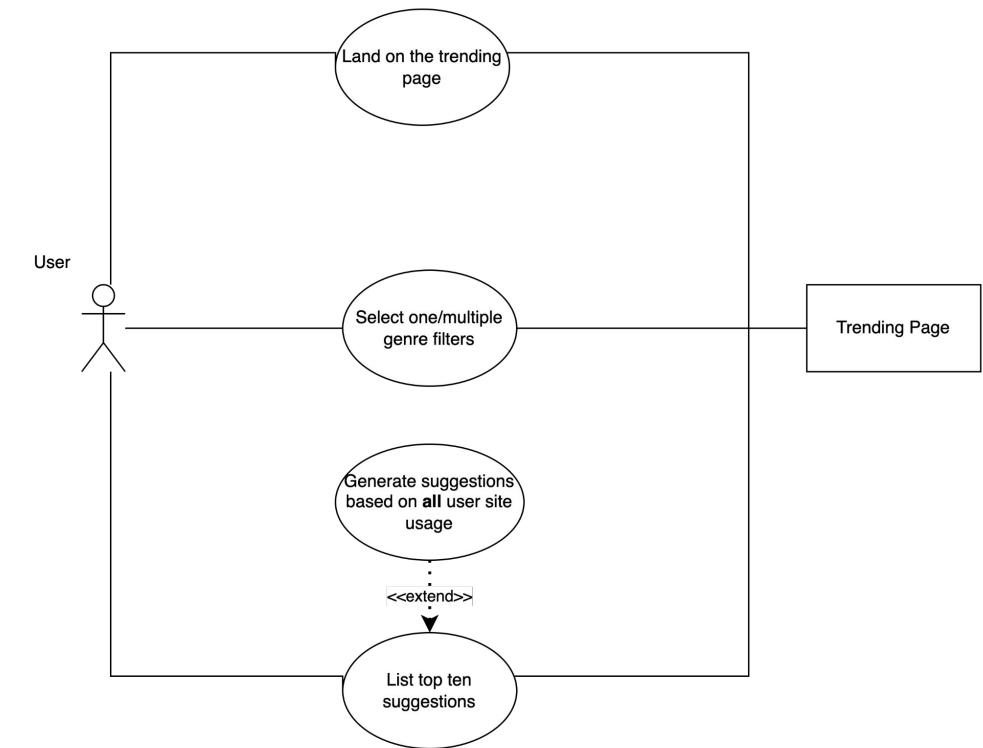
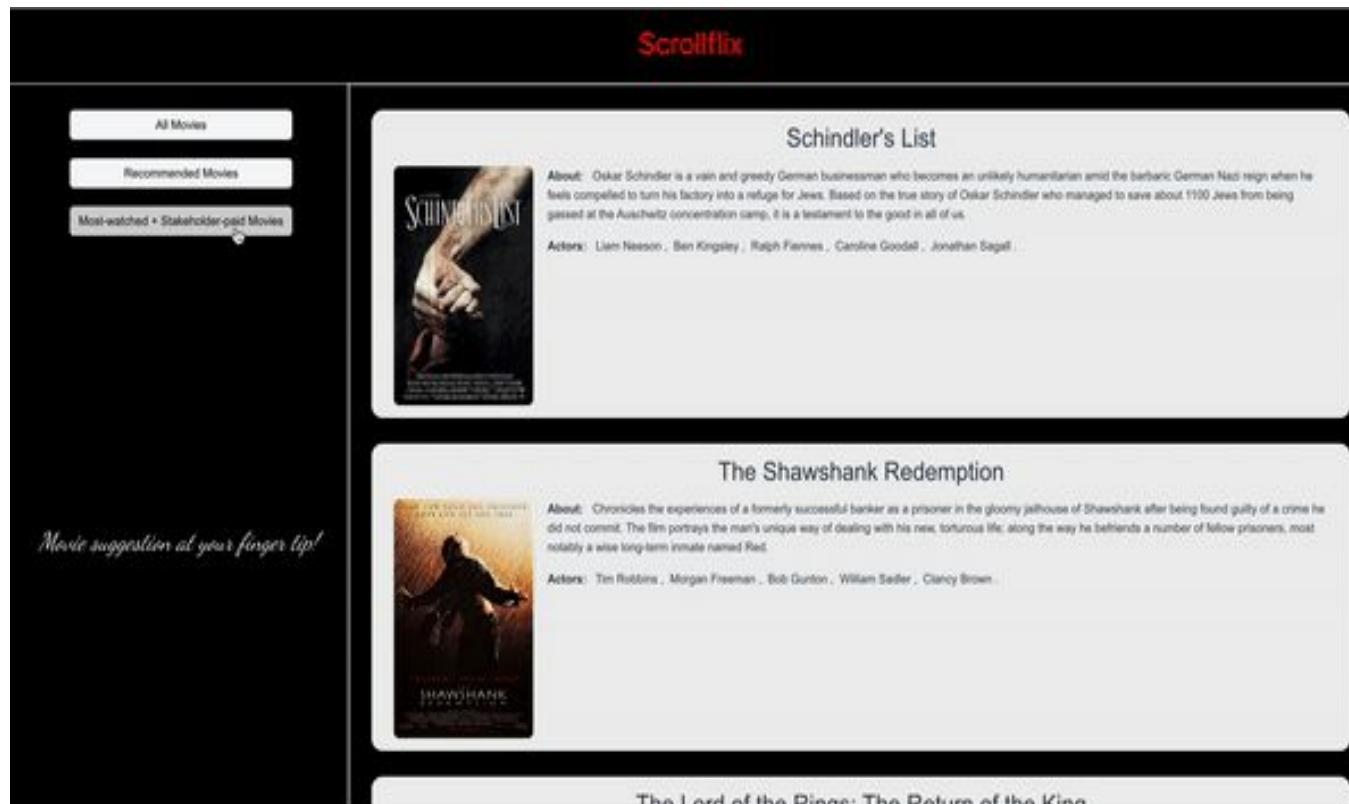
Use Case 2: Suggestion Movie Generator

The screenshot shows a mobile application interface for "Scrollflix". At the top, there's a navigation bar with three buttons: "All Movies", "Recommended Movies", and "Most-watched + Stakeholder-paid Movies". Below the navigation bar, there are two movie cards. The first card is for "The Shawshank Redemption", featuring a thumbnail image of the movie poster, a brief description about a banker serving time in a prison, and a list of actors (Tim Robbins, Morgan Freeman, Bob Gunton, William Sadler, Clancy Brown). The second card is for "The Godfather", showing a thumbnail of the movie poster, a description about the Don Corleone's family, and a list of actors (Marlon Brando, Al Pacino, James Caan, Richard S. Castellano, Robert Duvall). A small note on the left side of the screen says "Movie suggestion at your finger tip!". At the bottom of the screen, the title "The Dark Knight" is visible.



Use Case 2 Diagram.

Use Case 3: Trending Movie Generator



Use Case 3 Diagram.

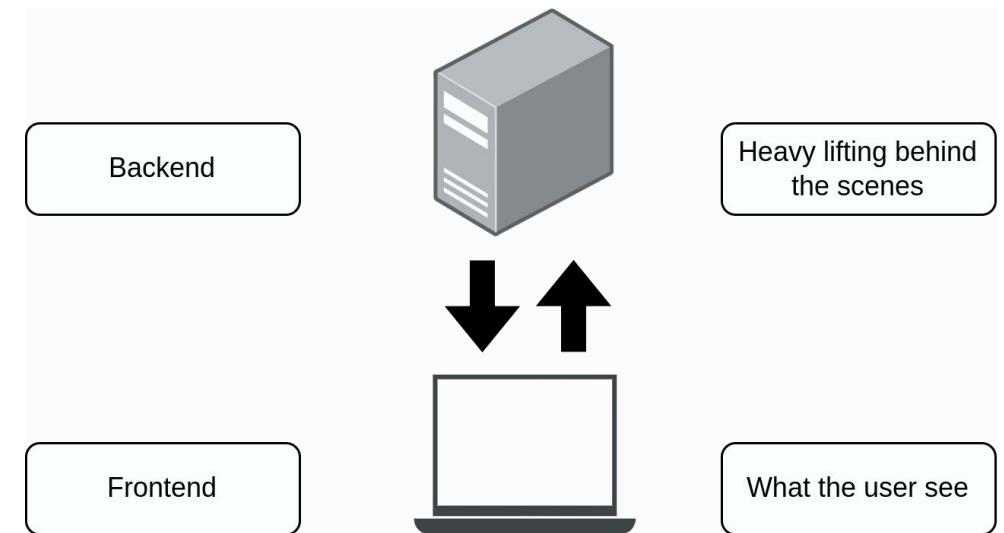
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Architectural Design

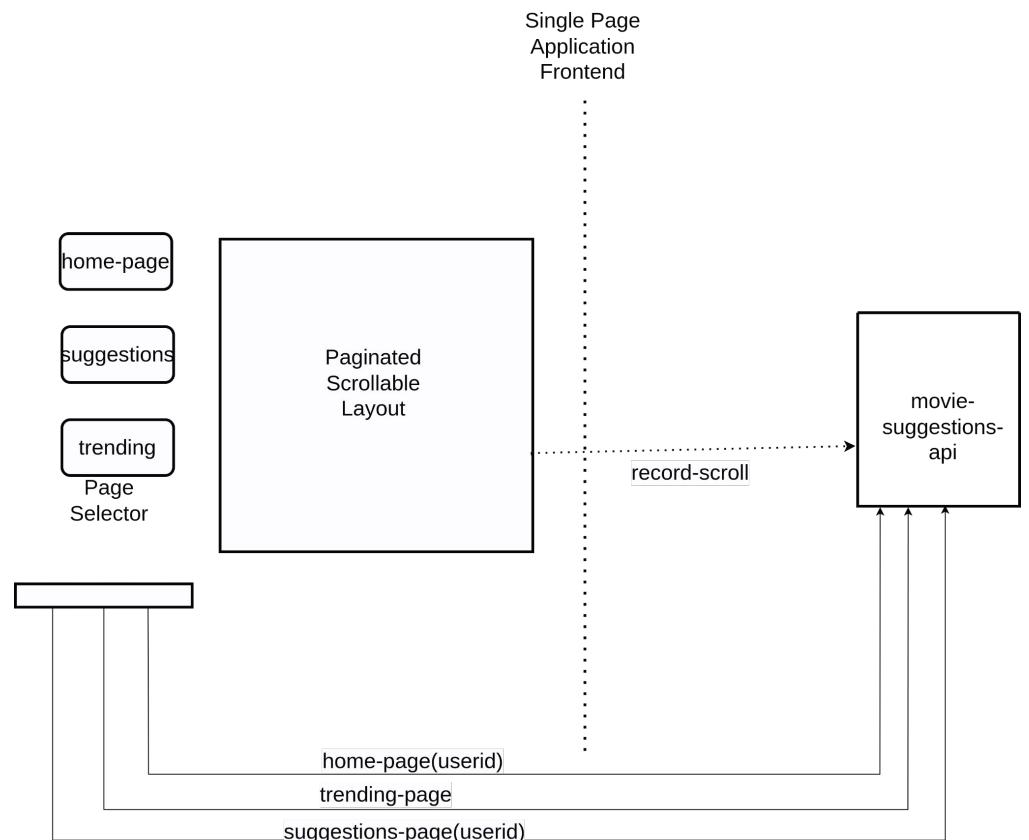
- Modern Web Applications dissect architecture into frontend and backend.
- Frontend is everything that's done on the user interface.
- Backend relates to the software that dictates the frontend's behaviour.
- The frontend and backend interact through HTTP REST APIs.
- The coupling is abstracted and not part of the design.



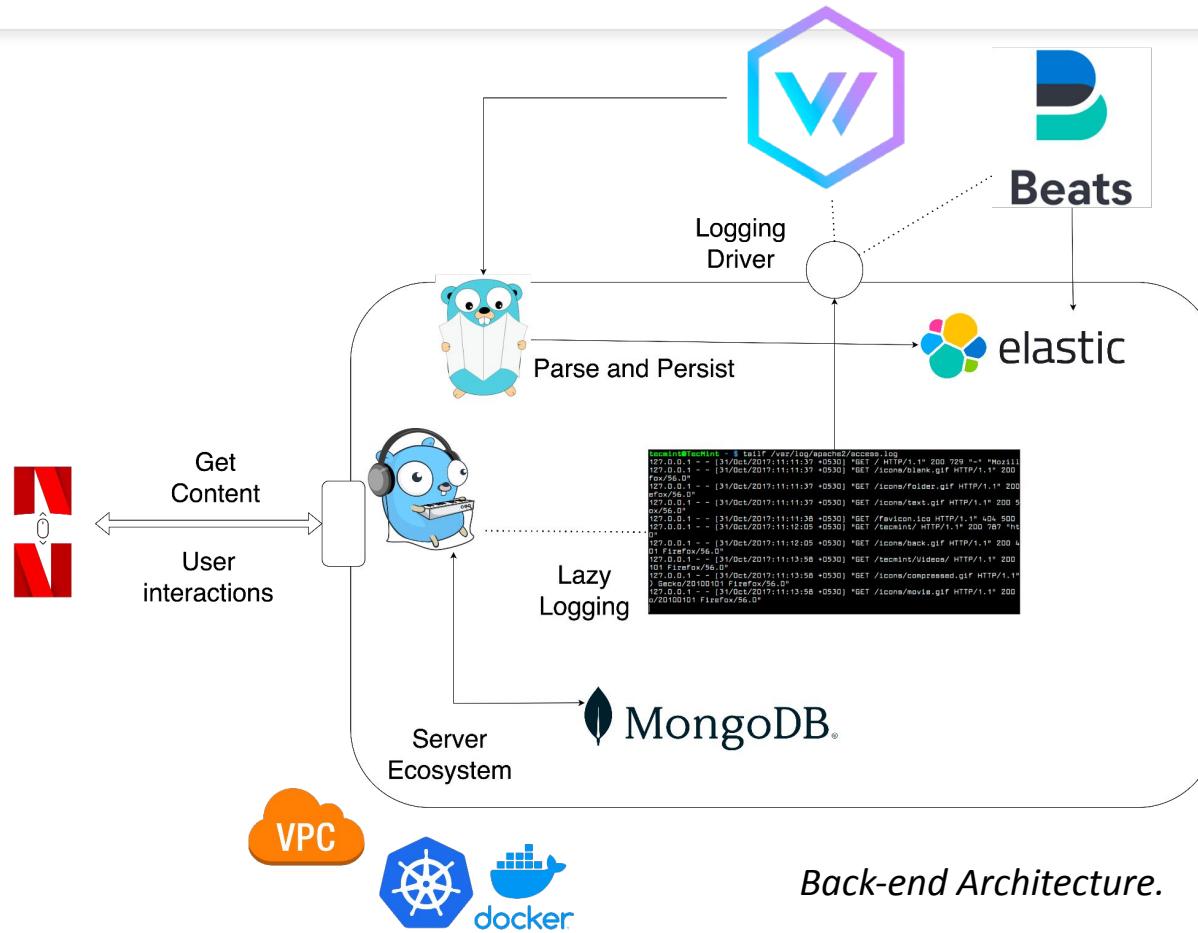
High-level Architecture.

Architectural Design: Frontend

- Single page application.
- Reactive updates.
- Static Component Design
 - + Sidebar
 - + Scrollable UI
 - + No signups/login
 - + No likes/dislikes.

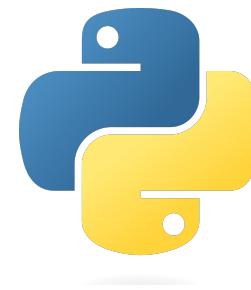


Architectural Design: Backend



Architectural Design: Data Scraping

- IMDBPy API.
- IMDB top 250 list.
- Sane data facilitation for Proof-of-concept.
- Scrapy web crawler.
 - + Daily data scraper.



Scrapy



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Limitation

- Proof of concept for log mobilization.
- Local Deployment.
- Pinia is absent so frontend is not so modular.
- The Pagination after aggregation is a mystery in the elasticsearch REST API.
 - No Pagination in Trending, Suggested.
- Deployment of log mobilization might be different post deployment.
- Unit testing was too tedious to do on top :(





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Tools

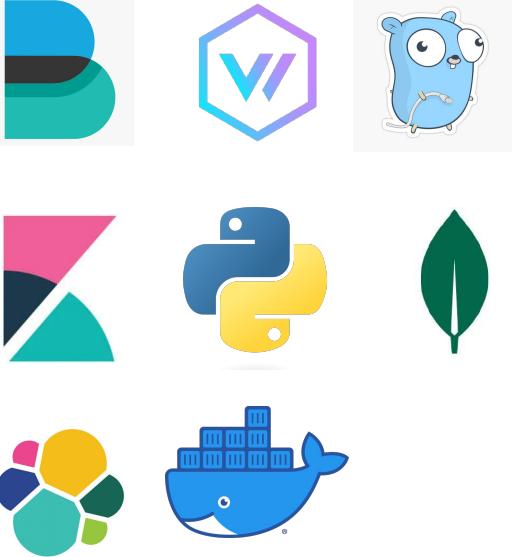
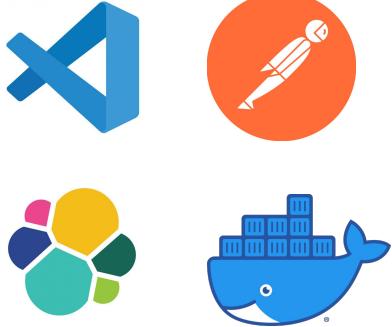
Front-end Tools	Back-end Tools	Development Tools
 <p>The Front-end Tools section contains icons for various front-end technologies. At the top is the Vue.js logo (a green triangle). Below it are icons for HTML5 (orange shield), CSS3 (blue shield), and JS (yellow shield). At the bottom are icons for Bootstrap (purple curly brace) and Firefox (blue globe with a fox).</p>	 <p>The Back-end Tools section contains icons for various back-end technologies. It includes the Node.js logo (a blue and green abstract shape), the Python logo (a yellow and blue snake), the Go logo (a pink and black abstract shape), the Docker logo (a blue whale with shipping containers), the Kubernetes logo (a yellow and green flower-like shape), and the Leaflet logo (a green leaf).</p>	 <p>The Development Tools section contains icons for various development environments. It includes the Visual Studio logo (a blue X), the Jenkins logo (an orange circle with a white pencil), the Jenkins logo (a yellow and green flower-like shape), and the Docker Compose logo (a blue whale with shipping containers).</p>



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Lessons Learned



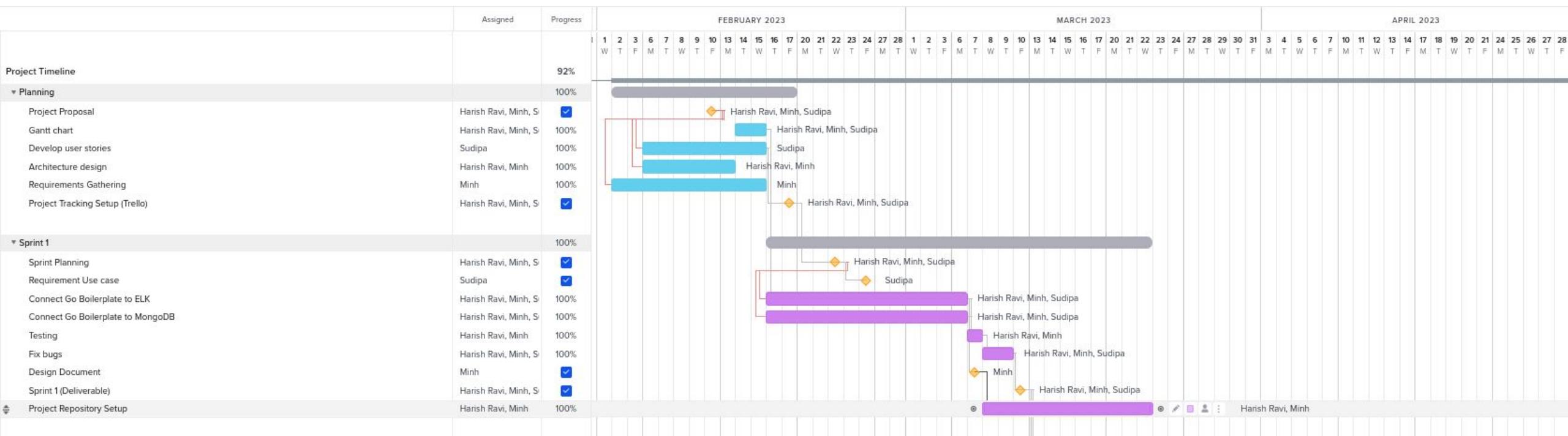
Challenges	Solution
Environment problems and Chip issues	Docker-compose, Makefile, environment files. Read long documentation.
Observation API	Caffeine, reading long documentations.
Elasticsearch API	Caffeine, reading long documentations and trying out things.
Pinia didn't work :(Vue.js Hooks
Infinite scroll	Try out everything in every single blog in existence until something works. Make it work?
Filebeats cannot sink into a http API	Have you heard of our lord and savior Rust? Did you know that Vector.dev is written on Rust? 



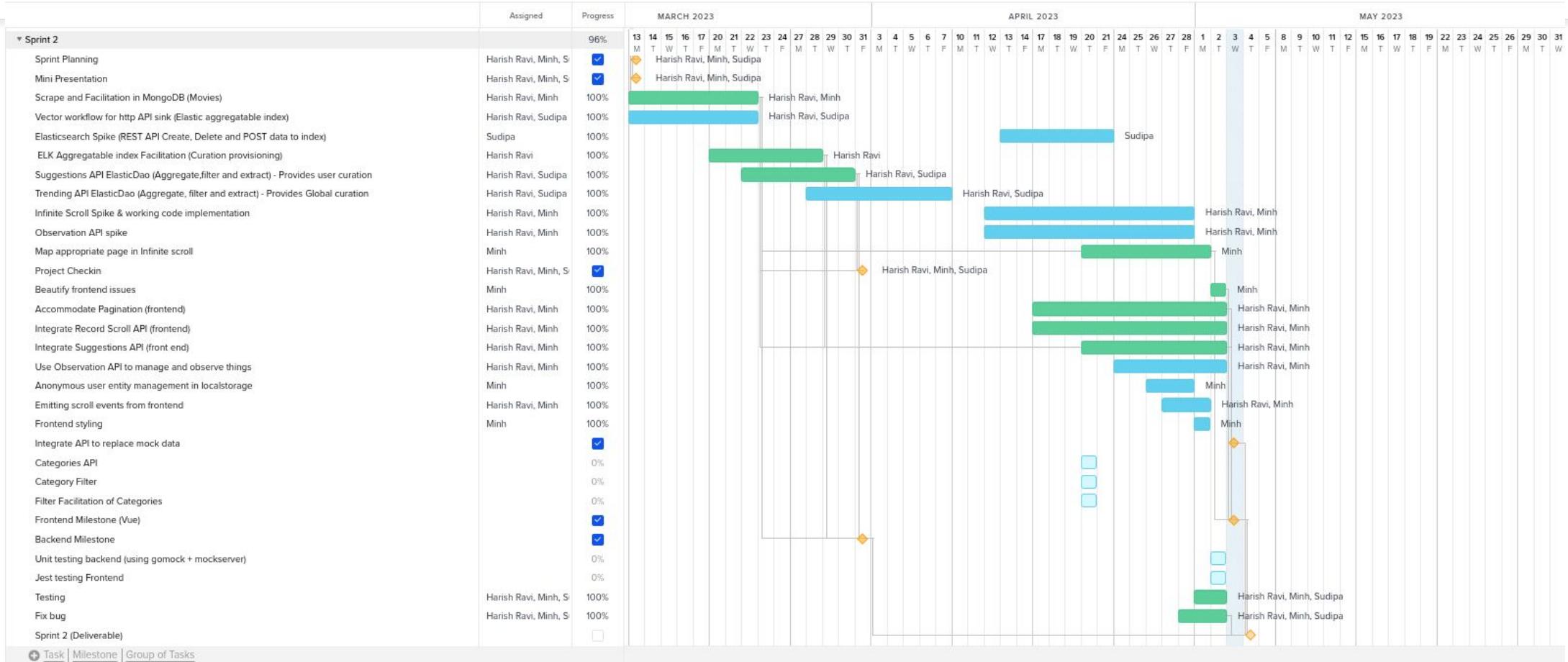
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Accomplishment: Gantt



Accomplishment: Gantt



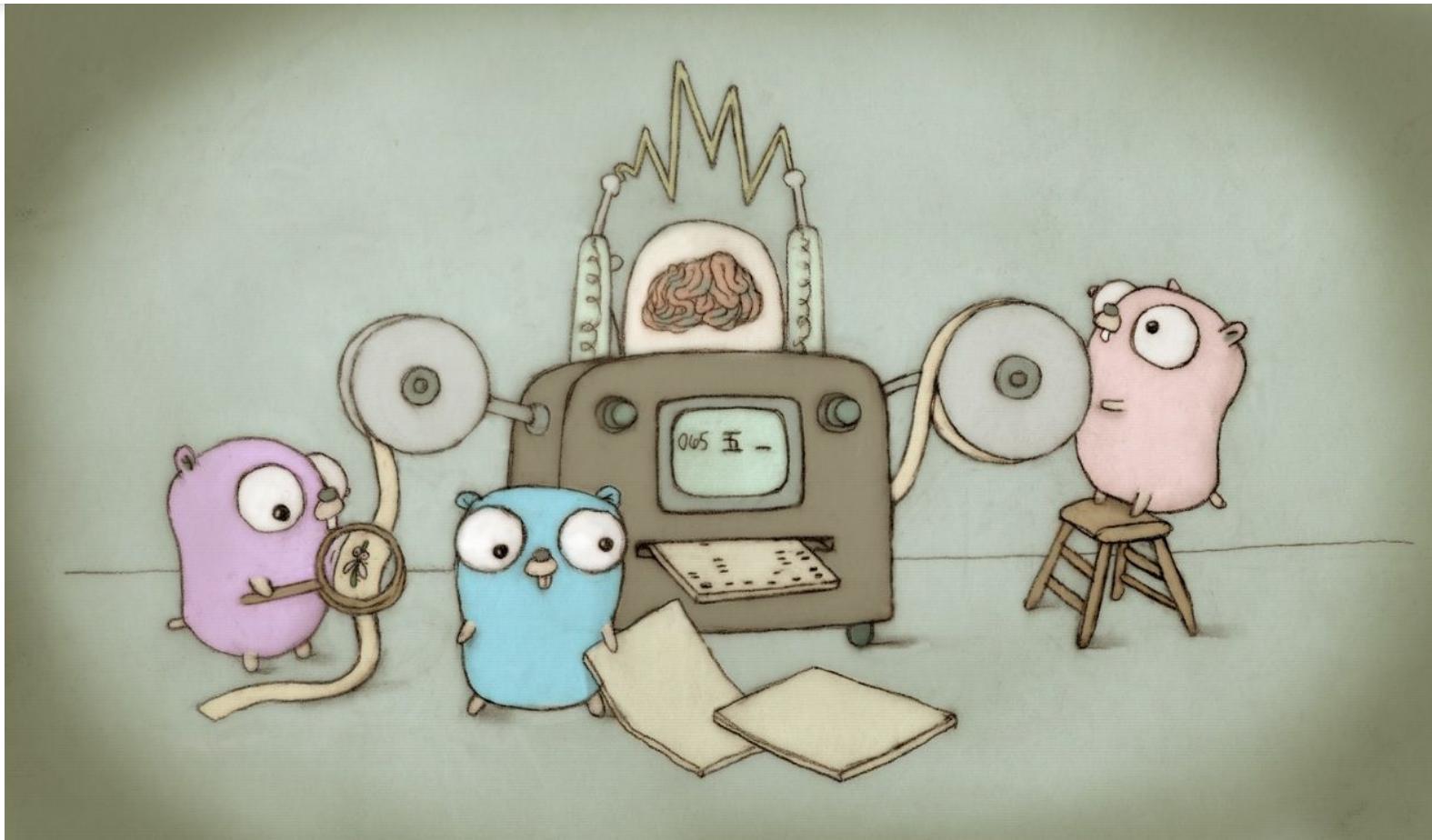
Sudipa



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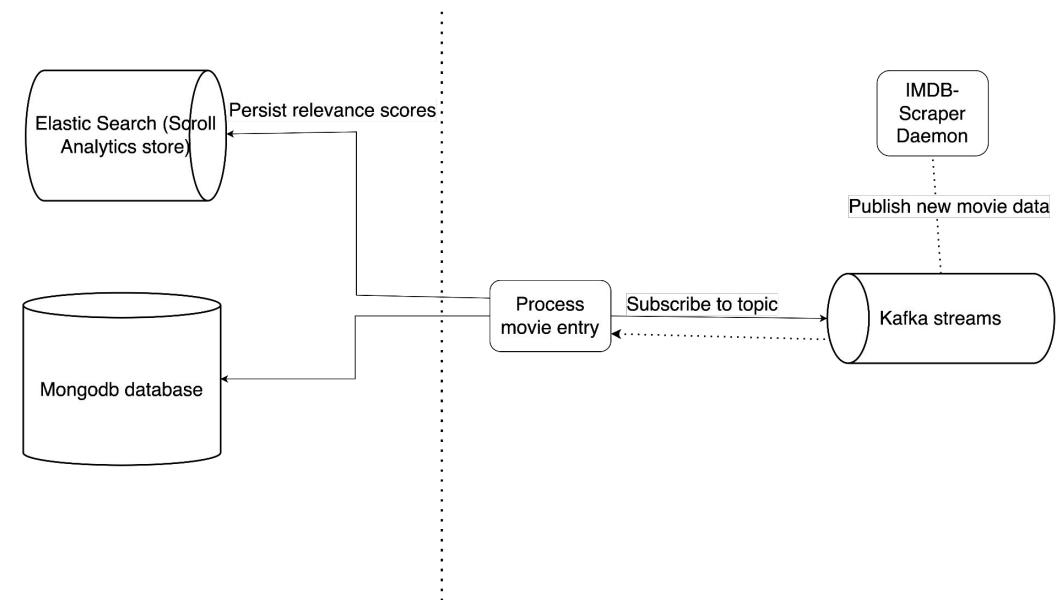
Future Works



Harish

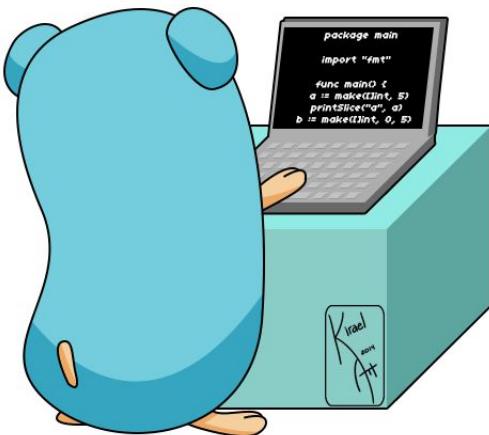
Future Works

- Dynamically updated movie repositories by scraping.
- A better command over suggestions algorithm.
- Machine learning algorithms for movie suggestions.
- Filtering the pages.
- Deployment in Kubernetes & Vector for log flow.



Database Migration.

Live Demo



Thank you!

