

DECLARATION

I hereby declare that this project entitled “**CAREER CATALYST**” submitted by me for the award of Bachelor’s degree in Computer Science has not formed the basis of any award of any other degree, diploma or any other similar titles and this was done by me under the guidance of **Mrs. POORNA PRABHA S, MCA**, Assistant Professor, Department of Computer Science, Ethiraj College for Women, Chennai – 600 008.

Student Name

S. KAMALASREE

Project Guide

Mrs. POORNA PRABHA S

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1. SYNOPSIS

Career Catalyst is an AI-driven platform designed to help individuals plan and advance their careers with precision and clarity. By integrating artificial intelligence and data analytics, it offers personalized career recommendations, empowering users to make informed decisions about their future. The Career Roadmap Generator provides a step-by-step guide detailing required skills, qualifications, online courses, YouTube resources, job opportunities, inspiring messages, and a structured weekly action plan—all available for PDF download. Users can also leverage the Career Comparison feature to evaluate multiple career options based on market trends. For better clarity, Flowchart Representation visually maps out career progression from entry-level roles to leadership positions. The Job Search module enables users to explore real-time job opportunities, while the Industry News & Blogs section keeps them updated on emerging trends and technologies. With its AI-powered insights, real-time updates, and personalized user experience, Career Catalyst serves as a comprehensive career planning tool for students, job seekers, and professionals striving for success in today's dynamic job market.

Key features of Career Catalyst include:

- **Career Roadmap Generation:** Users receive a detailed, step-by-step roadmap tailored to their chosen career, which can be downloaded as a PDF for future reference.
- **Career Comparison:** The platform allows users to compare multiple career paths, helping them make informed decisions about their professional journey.
- **Flowchart Representation:** A visual representation of career progression is provided, offering clarity on required skills, job roles, and growth opportunities.
- **Job Search Integration:** Users can explore real-time job opportunities relevant to their selected career path.
- **Industry News & Blogs:** The platform keeps users updated with the latest developments in various fields, offering insights into emerging technologies and trends.
- **Technology Exploration:** Users can read about different technologies, industry insights, and expert-written blogs to expand their knowledge base.
- **Personalized Experience:** Every feature is tailored to the user's preferences, ensuring a customized and interactive career planning journey.

With a user-friendly interface and AI-driven insights, Career Catalyst serves as an all-in-one solution for individuals aiming to navigate their careers with confidence and clarity.

2. SYSTEM CONFIGURATION

i) HARDWARE REQUIREMENTS

Hardware refers to all the physical components that make up a computer system. The essential hardware components required to develop this project are as follows:

- **Computer Components:** Monitor, Keyboard, Mouse, CPU.
- **RAM:** 8 GB
- **Hard disk:** 512 GB.
- **Processor:** Intel Core i3.

ii) SOFTWARE REQUIREMENTS

Software is a collection of programs and data that instruct the computer on how to function. The software specifications for developing this project are:

- **Front-End:** HTML, CSS, JavaScript
- **Back-End:** Flask, Firebase Firestore
- **Development Environment:** Visual Studio Code (VS Code)
- **Authentication:** Firebase Authentication
- **Data Sources:**
 - Career Dataset (JSON format) – Used for generating personalized career roadmaps.
- **APIs Used:**
 - Gemini API – For AI-powered career roadmap generation.
 - JSearch API – For real-time job search functionality.
 - GNews API – For fetching the latest industry news and trends.
- **Web Browser:** Brave

3. SOFTWARE DESCRIPTION

HTML

HTML is the fundamental markup language used to structure the content of the web pages. It defines various elements such as headings, paragraphs, forms, buttons, and input fields to create a well-structured user interface. HTML ensures that the website is accessible and provides a foundation for integrating CSS and JavaScript to enhance its functionality and appearance.

CSS

CSS is responsible for the styling and visual presentation of the web application. It enables the customization of fonts, colors, layouts, and animations, ensuring an aesthetically pleasing and responsive design. CSS frameworks and modern styling techniques help in making the web pages visually appealing while ensuring compatibility across different devices and screen sizes.

JavaScript

JavaScript is a powerful programming language that adds interactivity and dynamic behavior to the web application. It is used for real-time user interactions, form validations, handling events, and updating content dynamically without requiring a page reload. JavaScript plays a crucial role in integrating various APIs, improving user experience, and managing asynchronous data requests.

Flask

Flask is a lightweight and versatile web framework written in Python, widely used for developing scalable and dynamic web applications. It follows a minimalistic approach, avoiding unnecessary dependencies and providing greater control over application structure. One of its key strengths is the built-in development server, which supports debugging and automatic reloading, enabling efficient testing and modification of code. Flask also offers a robust routing system that facilitates the creation of RESTful APIs, ensuring seamless communication between the front-end and back-end. The integration of the Jinja2 templating engine allows for dynamic content rendering, making it easier to develop interactive user interfaces. Additionally, Flask is highly compatible with various databases, including Firebase Firestore, MySQL, PostgreSQL, and MongoDB, allowing for flexible data storage and retrieval. Its modular design, combined with extensions for authentication, security, and data handling, makes Flask a powerful choice for building modern web applications.

Firebase Firestore

Firebase Firestore is a NoSQL cloud database that provides real-time data storage and retrieval. It allows efficient management of user data, career searches, and preferences, ensuring fast performance and scalability. Firestore supports automatic synchronization, making it an ideal choice for applications that require real-time updates and seamless data access across multiple devices. Firestore provides several advantages, including real-time updates, offline support, automatic scaling, and strong security features. It enables developers to store and retrieve data efficiently using a powerful querying system.

Firebase Authentication

Firebase Authentication is used to securely manage user sign-in and account management. It supports multiple authentication methods, including email/password login and third-party authentication providers like Google. Firebase Authentication ensures data security by implementing encrypted authentication tokens, preventing unauthorized access to user accounts and sensitive information. Firebase Authentication provides several security features, including password hashing, token-based authentication, and multi-factor authentication (MFA), ensuring that user data remains protected from unauthorized access.

Gemini API

The Gemini API is an advanced AI-powered API developed by Google DeepMind, designed for natural language understanding and generation. It leverages deep learning models to process, analyze, and generate human-like responses, making it an ideal tool for applications requiring intelligent text generation and decision-making. In this project, the Gemini API is used for career roadmap generation, where it analyzes user inputs, career preferences, and existing industry data to provide personalized career guidance. By utilizing AI-driven insights, it helps users understand the skills, qualifications, and job roles required for their chosen career path, making the career planning process more efficient and tailored to individual needs.

JSearch API

The JSearch API is a job search API that provides real-time access to job listings from multiple platforms. It offers structured job data, including job titles, descriptions, locations, salaries, and application links, making it a valuable tool for job seekers. This API aggregates job postings from various sources, ensuring users have access to the latest job opportunities based on their career interests. In this project, the JSearch API is integrated to fetch job listings relevant to a user's selected career path, allowing them to explore employment opportunities directly from the application.

GNews API

The GNews API is a news aggregation API that retrieves real-time news articles from trusted sources worldwide. It provides categorized news updates, keyword-based filtering, and access to breaking news in various industries. The API ensures that users stay informed about the latest trends, advancements, and opportunities in their respective fields. In this project, the GNews API is used to fetch industry-specific news articles based on the user's career interest, enabling them to stay updated with relevant market trends, technological advancements, and job sector insights.

Visual Studio Code (VS Code)

Visual Studio Code is the chosen integrated development environment (IDE) for developing and testing the application. It provides a user-friendly interface, debugging tools, and extensive support for various programming languages and frameworks. VS Code enhances productivity through features such as syntax highlighting, intelligent code completion, and built-in Git integration.

Brave Web Browser

Brave is an open-source, privacy-focused web browser built on the Chromium engine. It is designed to offer enhanced security, faster browsing speeds, and an ad-free experience. Unlike traditional browsers, Brave blocks trackers, ads, and unnecessary scripts by default, ensuring a more secure and private browsing environment. Brave's lightweight architecture and improved resource management helped in faster page rendering and reduced memory consumption, making it an ideal choice for web development. By leveraging Brave, the project ensures a secure, efficient, and distraction-free development experience while maintaining compatibility with modern web technologies.

4. SYSTEM DESIGN

1. Overview

The Career Catalyst platform is designed to assist users in exploring career pathways, job opportunities, and industry-related news. The system integrates multiple APIs, dataset and follows a modular approach to ensure an efficient, structured, and interactive experience.

2. System Architecture

The system follows a modular and API-driven architecture to efficiently process user requests and deliver relevant career-related data. It consists of the following key modules

2.1 Homepage Module

- Serves as the primary interface where users can navigate to different functionalities.
- Provides access to:
 - Career Roadmap Generation
 - Job Opportunities
 - Latest Industry News
 - User Authentication (Sign Up/Login)

2.2 Career Roadmap Module

- Generates career roadmaps based on user preferences.
- Uses external APIs for roadmap generation.
- Supports flowchart-based visualization using datasets for enhanced understanding.
- This feature is available under the “Try Now” section.

2.3 Job Opportunities Module

- Retrieves real-time job listings based on user queries.
- Processes and formats job-related data for structured presentation.

2.4 News Module

- Fetches latest industry news to keep users informed about job trends and professional growth opportunities.
- Aggregates and presents relevant news articles.

2.5 Authentication & User Management

- Implements a secure user authentication mechanism.
- Provides personalized access to features like career tracking and saved interests.
- Redirects users to their personalized homepage upon successful login.

2.6 My Interests Module (Exclusive to Authenticated Users)

- Allows users to enter a career field of interest and retrieve:
 - Job listings relevant to the chosen field.
 - News articles related to career trends in that domain.
- Saves user preferences for future reference.
- Provides an option to generate a career roadmap based on saved interests.

3. Data Flow and Process

The data flow within the system follows a structured sequence of operations:

3.1 User Interaction:

- Users access the homepage and navigate to desired functionalities.
- Authentication is required for personalized features.

3.2 Data Retrieval and Processing:

- API requests are made to fetch career roadmaps, job listings, and industry news.
- The system processes and formats the retrieved data.

3.3 Storage and Retrieval:

- User preferences are persistently stored for customized recommendations.

3.4 Presentation:

- The processed data is displayed in a structured and user-friendly manner.

4. Security Considerations

• User Authentication:

- Uses Firebase Authentication to securely manage user sign-ups and logins.
- Supports OAuth-based authentication for seamless and secure access.

• Data Storage & Privacy:

- User interests and career history are stored in Firebase Firestore, ensuring data persistence.
- Implements role-based access control (RBAC) to restrict unauthorized data modifications.

- Ensures encryption of sensitive data before storage.
- **API Security:**
 - Flask backend validates and sanitizes user inputs before processing.
 - Uses API keys and authentication tokens for accessing Gemini API, JSearch API, and GNews API.
- **Session Management:**
 - Uses secure cookies and token-based authentication (JWT) to maintain user sessions.
 - Implements automatic session expiration for enhanced security.

5. Scalability & Future Enhancements

To enhance the efficiency, accessibility, and intelligence of the Career Catalyst platform, the following key advancements are planned:

5.1 Mobile Application Development

- Extend the platform to a mobile application (Android & iOS) for better accessibility.
- Enable real-time notifications for job updates, career suggestions, and industry trends.
- Synchronize user data seamlessly with Firebase Firestore for a unified experience across web and mobile.

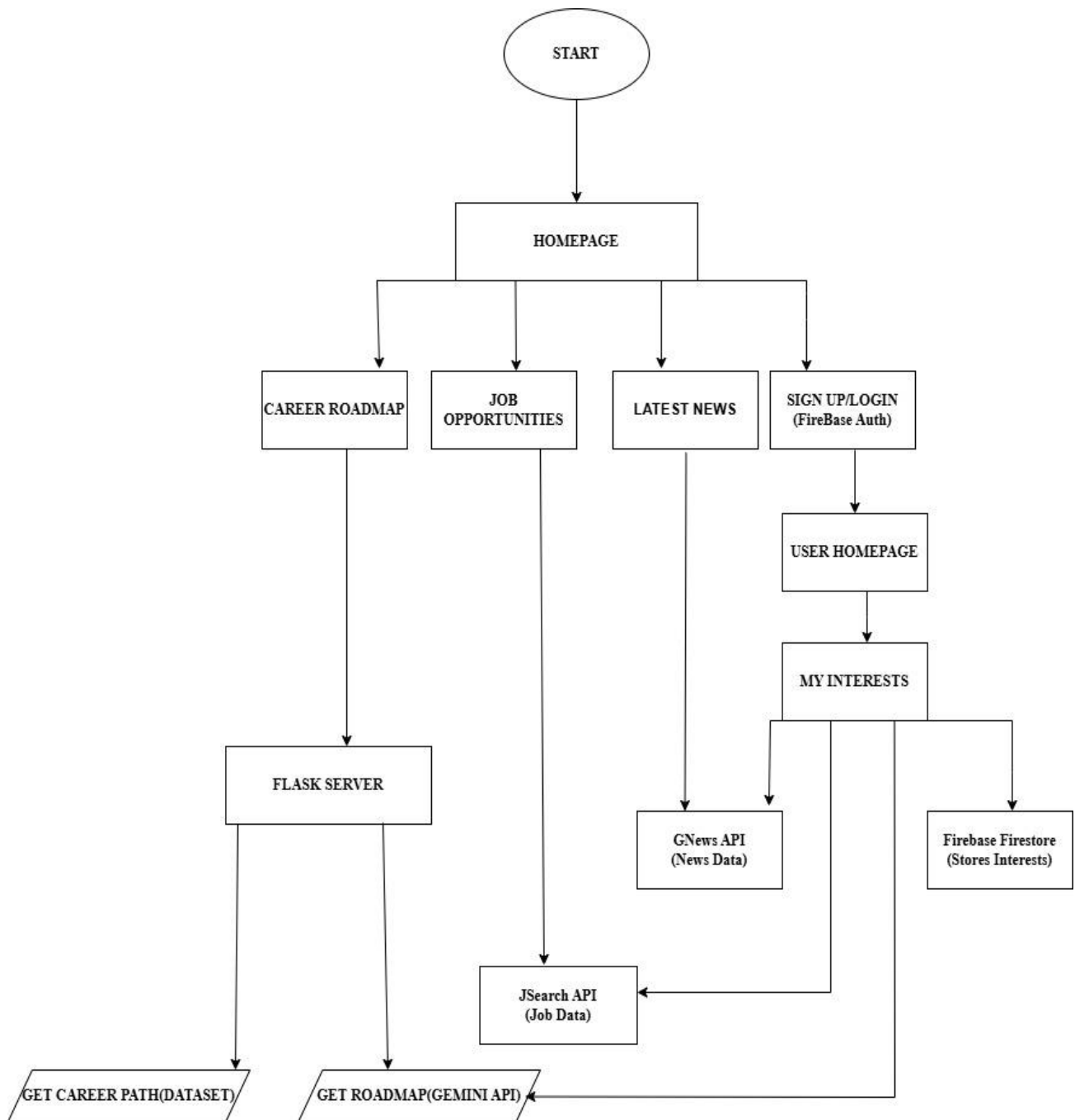
5.2 AI & Machine Learning for Career Recommendations

- Enhance the personalized career roadmap generation by refining the Machine Learning model with more diverse datasets.
- Utilize NLP techniques to analyze job descriptions and industry trends for better recommendations.
- Improve career matching accuracy using data-driven insights from historical career paths.

5.3 Performance & Security Enhancements

- Optimize Flask backend to handle increased user requests efficiently.
- Implement API caching and database indexing for faster query processing.
- Strengthen Firebase Authentication & Firestore security rules to protect user data.
- Introduce role-based access control (RBAC) to limit sensitive data access.

DATA FLOW DIAGRAM



5. PROJECT DESCRIPTION

OVERVIEW

Career Catalyst is an AI-powered career planning and advancement platform designed to assist individuals in making informed career decisions through data-driven insights, personalized recommendations, and structured growth strategies. The platform integrates artificial intelligence, machine learning, and real-time data analytics to generate tailored career roadmaps, compare different career paths, and provide real-time job opportunities, all while keeping users updated with the latest industry news. By offering a structured, user-friendly, and intelligent career planning experience, Career Catalyst empowers students, job seekers, and professionals to navigate their career journeys with confidence.

The Career Roadmap Generator enables users to create a step-by-step guide outlining necessary qualifications, key skills, online courses, job opportunities, and structured action plans. Users can download their personalized roadmaps in PDF format for easy reference. The Career Comparison feature allows individuals to assess multiple career options based on factors such as industry demand, salary trends, and future growth potential. The Flowchart Representation provides a graphical visualization of career progression, illustrating the transition from entry-level roles to leadership positions while mapping the required skill set for each stage. To help users explore employment opportunities, the platform integrates a Job Search module, which leverages the JSearch API to fetch real-time job listings based on the user's chosen career path. Additionally, the Industry News & Blogs section, powered by the GNews API, provides users with the latest updates on emerging technologies, industry trends, and professional growth strategies.

Career Catalyst is built on a robust and scalable technology stack that ensures high performance, security, and ease of use. The front-end is developed using HTML, CSS, and JavaScript, providing an interactive and responsive user interface. The back-end is powered by Flask, a lightweight Python framework that handles server-side logic and API interactions efficiently. Firebase Firestore is used as the database to store user preferences, career roadmap data, and job search history, ensuring secure and fast data retrieval. Firebase Authentication is implemented to manage secure user login and sign-up processes, allowing users to access their personalized data with ease. The entire development process is carried out using Visual Studio Code (VS Code), a versatile and feature-rich development environment that facilitates efficient coding and debugging.

The platform integrates multiple data sources and APIs to enhance its functionality. The Career Dataset (JSON format) serves as the foundation for AI-powered career roadmap generation, containing structured career-related information that helps in providing accurate and insightful recommendations. The Gemini API plays a crucial role in generating AI-driven career roadmaps, offering users tailored suggestions based on their interests, skills, and industry trends. The JSearch API is utilized to fetch up-to-date job listings, ensuring that users have access to the latest employment opportunities in their chosen fields. Additionally,

the GNews API is integrated to provide real-time industry news and insights, allowing users to stay informed about changes in the job market and advancements in various professional domains. For optimal performance and security, users are recommended to access the platform through the Brave web browser, which offers enhanced privacy features and seamless browsing.

Career Catalyst stands as a comprehensive career planning solution that combines AI-powered insights, real-time updates, and a personalized user experience to help individuals make strategic career choices. Whether it is a student looking for guidance, a job seeker exploring opportunities, or a professional aiming for career advancement, the platform serves as a strategic partner in career development. By integrating a structured approach with cutting-edge technology, Career Catalyst ensures that users stay ahead in an ever-evolving job market, equipping them with the necessary tools and knowledge to achieve long-term success.

KEY FEATURES

The Career Roadmap Generator enables users to create a step-by-step guide outlining necessary qualifications, key skills, online courses, job opportunities, and structured action plans. Users can download their personalized roadmaps in PDF format for easy reference. The Career Comparison feature allows individuals to assess multiple career options based on factors such as industry demand, salary trends, and future growth potential. The Flowchart Representation provides a graphical visualization of career progression, illustrating the transition from entry-level roles to leadership positions while mapping the required skill set for each stage. To help users explore employment opportunities, the platform integrates a Job Search module, which leverages the JSearch API to fetch real-time job listings based on the user's chosen career path. Additionally, the Industry News & Blogs section, powered by the GNews API, provides users with the latest updates on emerging technologies, industry trends, and professional growth strategies.

TECHNOLOGY STACK

Career Catalyst is built on a robust and scalable technology stack that ensures high performance, security, and ease of use. The front-end is developed using HTML, CSS, and JavaScript, providing an interactive and responsive user interface. The back-end is powered by Flask, a lightweight Python framework that handles server-side logic and API interactions efficiently. Firebase Firestore is used as the database to store user preferences, career roadmap data, and job search history, ensuring secure and fast data retrieval. Firebase Authentication is implemented to manage secure user login and sign-up processes, allowing users to access their personalized data with ease. The entire development process is carried out using Visual Studio Code (VS Code), a versatile and feature-rich development environment that facilitates efficient coding and debugging.

USER EXPERIENCE AND INTERFACE

Career Catalyst offers a seamless and intuitive user experience through a clean and structured interface. The navigation is designed to be user-friendly, ensuring accessibility for individuals with various levels of technical expertise. Users can easily sign up or log in using Firebase Authentication, which provides a secure and hassle-free authentication process. The dashboard presents career recommendations, job listings, and industry news in a well-organized manner, ensuring that users can access the information they need without complexity. Additionally, the PDF generation feature for career roadmaps enhances usability by allowing users to save and access their career plans offline.

SECURITY AND DATA PRIVACY

Ensuring user data security and privacy is a top priority for Career Catalyst. The platform employs Firebase Firestore to securely store user data, with real-time synchronization and encryption to protect sensitive information. Firebase Authentication ensures that only authorized users can access their personalized data, preventing unauthorized access or data breaches. Additionally, by leveraging secure APIs, the platform ensures that all data exchanges are encrypted and protected against potential threats. Career Catalyst follows industry best practices for data security and privacy compliance, ensuring that users can confidently interact with the platform without concerns about data misuse.

SCALABILITY AND FUTURE ENHANCEMENTS

Career Catalyst is designed with scalability in mind, allowing the platform to handle increasing user demand without compromising performance. Future enhancements will include AI-powered resume building, interview preparation modules, and mentorship programs to provide users with comprehensive career development resources. Additionally, planned integrations with LinkedIn and other professional networking platforms will enable users to expand their professional connections and access exclusive job opportunities. Continuous improvements to AI algorithms and machine learning models will enhance career recommendations and personalization, ensuring users receive the most relevant insights.

CONCLUSION

Career Catalyst stands as a comprehensive career planning solution that combines AI-powered insights, real-time updates, and a personalized user experience to help individuals make strategic career choices. Whether it is a student looking for guidance, a job seeker exploring opportunities, or a professional aiming for career advancement, the platform serves as a strategic partner in career development. Career Catalyst ensures that users stay ahead in an ever-evolving job market, equipping them with the necessary tools and knowledge to achieve long-term success.

6. DATABASE DESIGN

1. Overview

This document outlines the Firebase Firestore database design for a personalized user experience. The database stores user information, search history, and recommendations to tailor content based on user preferences. The structure follows a NoSQL hierarchical approach to optimize querying and data retrieval.

The primary collections in the database include:

- **Users:** Stores user profiles and settings.
- **Search History:** Logs user search queries.

2. Database Schema

2.1 Users Collection (users/)

Each document represents a registered user.

```
{  
  "userId": "string",  
  "username": "string",  
  "email": "string",  
  "createdAt": "string"  
}
```

Fields:

- **userId** (String) → Unique Firebase Authentication UID (used as document ID).
- **username** (String) → The user's chosen display name.
- **email** (String) → The user's registered email.
- **createdAt** (String) → Timestamp in ISO format (`new Date().toISOString()`).

2.2 History Collection (history/)

Each document represents a search made by a user.

```
{  
  "email": "string",  
  "search": "string",  
}
```

Fields:

- **email** (String) → The user's email to associate the search with their account.
- **search** (Array of Strings) → A list of search queries made by the user.

7. SAMPLE CODES

careercatalyst.html

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8" />

<meta name="viewport" content="width=device-width, initial-scale=1.0" />

<title>Career Catalyst</title>

<link rel="preconnect" href="https://fonts.googleapis.com" />

<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin />

<link
href="https://fonts.googleapis.com/css2?family=Poppins:wght@300;400;600;700&display=s
wap"
rel="stylesheet"
/>

<link rel="preconnect" href="https://fonts.googleapis.com">

<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>

<link href="https://fonts.googleapis.com/css2?family=Audiowide&display=swap"
rel="stylesheet"/>

<link
rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.2/css/all.min.css"
integrity="sha512-
z3gLpd7yknflYoNbCzqRKc4qyor8gaKU1qmn+CShxbuBusANI9QpRohGBreCFkKxLhei6
S9CQXFEbbKuqLg0DA=="
crossorigin="anonymous"
referrerpolicy="no-referrer"
/>

<link rel="stylesheet" href="style.css" />

<link rel="shortcut icon" href="images/favicon.ico" type="image/x-icon" />
```

```

<script src="main.js"></script>

</head>

<body>

<nav class="navbar">

  <div class="container">

    <div class="logo">

      <a href="index.html">

        <h1>Career Catalyst</h1>

      </a>

    </div>

    <div class="main-menu">

      <ul>

        <li>

          <a href="index.html">Home</a>

        </li>

        <li>

          <a href="#c1">About us</a>

        </li>

        <li>

          <a href="http://127.0.0.1:5001">Job opportunities</a>

        </li>

        <!-- Dropdown for Explore -->

        <li class="dropdown">

          <a href="#t1" class="dropbtn"> Explore </a>

          <div class="dropdown-content">

            <a href="#t1">Trending Technologies</a>

            <a href="#b1">Blogs & Insights</a>

            <a href="news/news.html">News & Updates</a>

          </div>

        </li>

      </ul>

    </div>

  </div>

</nav>

```

```

        </div>
    </li>
<li>
    <a class="btn try-now" href="http://127.0.0.1:5000/" >Try Now</a>
</li>
<p id="status"></p>
<li>
    <a class="btn" href="signup.html"> <i class="fas fa-user"></i>Sign up</a>
</li>
</ul>

<!-- Hamburger Button -->
<button class="hamburger-button">
    <div class="hamburger-line"></div>
    <div class="hamburger-line"></div>
    <div class="hamburger-line"></div>
</button>
</div>
</nav>

<!-- Hero -->
<section class="hero" id="h1" >
    <div class="container">
        <div class="hero-content">
            <h1 class="hero-heading text-xxl">
                CAREER CATALYST </h1>
            <h2 class="gradient-text">Your Roadmap to Success, Your Partner in Growth!
        </h2>
        <p class="hero-text">

```

Career Catalyst is your ultimate career roadmap generator, designed to guide you towards the right opportunities and professional growth. Whether you're a student, job seeker,

or working professional, we help you navigate your career path with personalized roadmaps, trending job insights, and skill-building resources.

```
</p>

<div class="hero-buttons">

  <a class="btn btn-primary" id="startFlaskApp" href="http://127.0.0.1:5000/">Try
Now</a>

  <a href="#" class="btn"><i class="fas fa-laptop"></i>Sign up</a
>

</div>

</div>

<div class="hero-video">

</div>

</div>

</section>

<!-- Mission Section-->

<section class="career-section " id="c1">

  <div class="mission" >

    <h3>Our Mission, Vision, and Goals</h3>

  </div>

  <div class="card-container">

    <div class="card">

      <div class="overlay">

        <h2>Mission</h2>

        <p>Empowering individuals with career growth and opportunities.</p>

      </div>

    </div>

    <div class="card">

      
```

```

<div class="overlay">
  <h2>Vision</h2>
  <p>To be the leading career roadmap provider for students and professionals.</p>
</div>
</div>

<div class="card">
  
  <div class="overlay">
    <h2>Goals</h2>
    <p>Providing personalized guidance for every career journey.</p>
  </div>
</div>
</div>
</section>

<!-- Video Section -->
<section class="video-section " id="a1">
  <div class="container1">
    <div class="text-box">
      <h2 class="typewriter">
        <div class="vidcontent">Come, Learn, and Let's Grow Together! </div><br>
        <div class="f1"> With Career Catalyst, success isn't just a destination— it's a
journey we build together! </div>
      </h2>
      <a href="http://127.0.0.1:5000/" class="btn btn-primary">Try Now</a>
    </div>
    <div class="video-box">
      <video autoplay controls>

```

```

        <source src="vid.mp4" type="video/mp4">

        Your browser does not support the video tag.

    </video>

</div>

</div>

</section>

<!-- Testimonials -->

<section class="testimonials " id="t1">

    <div class="container">

        <h3 class="testimonials-heading text-xl">Top Tech Trends 2025</h3>

        <div class="testimonials-grid">

            <div class="carousel">

                <div class="carousel-track">

                    <div class="card" style="background-image: url('ai.jpg');">

                        <p>ARTIFICIAL INTELLIGENCE</p>

                        <p>AI is continuously evolving to perform tasks without human intervention.</p>

                        <a href="ai-article.html" class="read-more">Read More</a>

                    </div>

                    <div class="card" style="background-image: url('h.jpg');">

                        <p>HEALTHCARE & BIOTECHNOLOGY</p>

                        <p>AI-powered diagnostics are revolutionizing medical treatments.</p>

                        <a href="biotech-article.html" class="read-more">Read More</a>

                    </div>

                    <div class="card" style="background-image: url('s.jpg');">

                        <p>SPACE TECHNOLOGY</p>

```

<p>Space-based solar power (SBSP) aims to harvest solar energy in space for Earth.</p>

Read More

</div>

<div class="card" style="background-image: url('ag.jpg');">

<p>AGRICULTURE & FOODTECH</p>

<p>Vertical farming uses AI for controlled indoor food production with minimal resources.</p>

Read More

</div>

<div class="card" style="background-image: url('e.jpg');">

<p>EDUCATION & LEARNING</p>

<p>AI tutors are providing personalized learning experiences for students.</p>

Read More

</div>

<div class="card" style="background-image: url('a.jpg');">

<p>AUTOMOTIVE TRANSPORTATION</p>

<p>Self-driving cars and eVTOL aircraft are paving the way for urban air mobility.</p>

Read More

</div>

</div>

</div>

</div>

</div>

</section>

<script id="a1">

document.addEventListener('DOMContentLoaded', () => {

const track = document.querySelector('.carousel-track');


```

track.innerHTML += track.innerHTML;

let scrollAmount = 0;

const scrollSpeed = 2;

function autoScroll() {

    scrollAmount += scrollSpeed;

    if (scrollAmount >= track.scrollWidth / 2) {

        scrollAmount = 0;

        track.style.transition = 'none';

        track.style.transform = `translateX(0)`;

    } else {

        track.style.transition = 'transform 0.1s linear';

        track.style.transform = `translateX(-${scrollAmount}px)`;

    }

    requestAnimationFrame(autoScroll);

}

autoScroll();

});

</script>

<!-- blogs -->

<section class ="blogs " id="b1">

<div class ="container">

<h3 class="blogs-heading text-xl">The Career Hub:Blogs & Insights</h3>

<div class="blogs-grid">

<div class="carousel1">

<div class="carousel1-track">

<div class="card" style="background-image: url('trends.jpg');">

<p>Future Career Trends</p>

<p>Workplace Trends For 2025</p>

```

[Read More](https://careerfoundry.com/en/blog/career-change/workplace-trends/)

</div>

<div class="card" style="background-image: url('options.jpg');">

<p>Explore Career Options</p>

<p>Workplace Trends For 2025</p>

[Read More](https://www.mindgroom.com/blog/most-popular-career-options-in-india/)

</div>

<div class="card" style="background-image: url('resume.jpg');">

<p>Resume tips</p>

<p>Make your resume stand out of the crowd.</p>

[Read More](https://resumeworded.com/resume-tips-key-advice)

</div>

<div class="card" style="background-image: url('soft.jpg');">

<p>Soft skills</p>

<p>The role of soft skills in today's job market</p>

[Read More](https://www.gisma.com/blog/the-role-of-soft-skills-in-todays-job-market-what-employers-really-want)

</div>

<div class="card" style="background-image: url('in.jpg');">

<p>Linkedin Cheatsheet</p>

<p>5 tips for a professional profile</p>

[Read More](https://www.workitdaily.com/linkedin-cheat-sheet)

</div>

<div class="card" style="background-image: url('aij.jpg');">

<p>AI Jobs in 2025</p>

```

    <p>Explore AI Career Paths</p>

    <a href="https://onlinedegrees.sandiego.edu/artificial-intelligence-jobs/" class="read-
more">Read More</a>

</div>

</div>

</div>

</div>

<script id="a2">

document.addEventListener('DOMContentLoaded', () => {

    const track1 = document.querySelector('.carousel-track');

    track1.innerHTML += track1.innerHTML; // Duplicate elements for seamless loop


    let scrollAmount1 = 0;

    const scrollSpeed = 2; // Adjusted speed for smooth movement


    function autoScroll1() {

        scrollAmount1 += scrollSpeed;


        if (scrollAmount1 >= track1.scrollWidth / 2) {

            scrollAmount1 = 0;

            track1.style.transition = 'none'; // Instantly reset position

            track1.style.transform = `translateX(0)`;

        } else {

            track1.style.transition = 'transform 0.1s linear';

            track1.style.transform = `translateX(-${scrollAmount1}px)`;

        }

        requestAnimationFrame(autoScroll1);

    }

    autoScroll1();

```

});

</script>

</section>

<!-- FAQ -->

<section class="faq ">

<div class="container-sm">

<h3 class="text-xl text-center">Frequently Asked Questions</h3>

<ul class="faq-menu">

<div class="faq-content">

<div class="faq-group">

<div class="faq-group-header">

<h4 class="text-md">

What is Career Catalyst?

</h4>

<i class="fas fa-minus"></i>

</div>

<div class="faq-group-body open">

<p>

Career Catalyst is a platform designed to help students and professionals navigate their career journey with personalized guidance, resources, and opportunities.

</p>

</div>

</div>

<div class="faq-group">

<div class="faq-group-header">

<h4 class="text-md">

Who can use Career Catalyst?

</h4>

<i class="fas fa-plus"></i>

</div>

<div class="faq-group-body">

<p>

Our platform is open to students, job seekers, working professionals, and anyone looking to grow in their career.

</p>

</div>

</div>

<div class="faq-group">

<div class="faq-group-header">

<h4 class="text-md">

How does Career Catalyst help in career growth?

</h4>

<i class="fas fa-plus"></i>

</div>

<div class="faq-group-body">

<p>

We provide career roadmaps, skill-building resources, mentorship, and job opportunities to help users achieve their career goals.

</p>

</div>

</div>

<div class="faq-group">

<div class="faq-group-header">

<h4 class="text-md">

How can I find the right career path?

</h4>

<i class="fas fa-plus"></i>

</div>

<div class="faq-group-body">

<p>

Career Catalyst offers career assessments and expert consultations to help you identify the best career path based on your skills and interests.

</p>

</div>

</div>

<div class="faq-group">

<div class="faq-group-header">

<h4 class="text-md">Can I switch careers with the help of Career Catalyst?</h4>

<i class="fas fa-plus"></i>

</div>

<div class="faq-group-body">

<p>

Absolutely! We provide resources, upskilling programs, and career transition guides to help you switch careers successfully.

</p>

</div>

</div>

<div class="faq-group">

<div class="faq-group-header">

<h4 class="text-md">

What makes Career Catalyst different from other career platforms?

</h4>

<i class="fas fa-plus"></i>

</div>

<div class="faq-group-body">

<p>

Career Catalyst offers a unique combination of personalized career guidance, mentorship, skill-building courses, and job opportunities, all tailored to your career goals.

</p>

</div>

</div>

</div>

</div>

</section>

<!-- Footer -->

<footer class="footer ">

<div class="container">

<div class="footer-grid">

<div>

<div class="card">

<h4>Subscribe to Career Catalyst</h4>

<p class="text-sm">

Subscribe Now & Unlock Your Career Potential!

</p>

<form>

<input type="email" id="email" placeholder="Enter your email" />

<button type="submit" class="btn btn-primary btn-block">

Subscribe

```

        </button>

    </form>

</div>

</div>

<div>

    <h4>Career Catalyst</h4>

    <ul>

        <li><a href="#c1">About Us</a></li>

        <li><a href="#t1">Explore</a></li>

        <li><a href="#h1">Try Now</a></li>

    </ul>

</div>

<div>

    <h4>Resources</h4>

    <ul>

        <li><a href="#t1">Tech Trends</a></li>

        <li><a href="#b1">Blogs</a></li>

        <li><a href="news/news.html">Latest News</a></li>

    </ul>

</div>

<div>

    <h4>Contact</h4>

    <ul>

        <li>

            <a href="mailto:careercatalyst28@gmail.com">careercatalyst28@gmail.com</a>

        </li>

    </ul>

</div>

</div>

```



```
</div>
</footer>
</body>
</html>
```

signup.html

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <link rel="stylesheet" href="sign.css">
  <title>Signin & Sign up</title>
</head>

<body>
  <div class="wrapper">
    <div class="form-container sign-up">
      <form action="#">
        <h2>sign up</h2>
        <div class="form-group">
          <input type="text" required>
          <i class="fas fa-user"></i>
          <label for="">username</label>
        </div>
        <div class="form-group">
```

```

        <input type="email" id="signup-email" required>
        <i class="fas fa-at"></i>
        <label for="">email</label>
    </div>

    <div class="form-group">
        <input type="password" id="signup-password" required>
        <i class="fas fa-lock"></i>
        <label for="">password</label>
    </div>

    <div class="form-group">
        <input type="password" required>
        <i class="fas fa-lock"></i>
        <label for="">confirm password</label>
    </div>

    <button type="submit" class="btn" id="signup-btn">sign up</button>

    <div class="link">
        <p>You already have an account?<a href="#" class="signin-link"> sign
in</a></p>
    </div>
</form>
</div>

<div class="form-container sign-in">
    <form action="#">
        <h2>login</h2>
        <div class="form-group">
            <input type="email" id="login-email" required>
            <i class="fas fa-at"></i>
            <label for="">email</label>
        </div>

```

```

<div class="form-group">
  <input type="password" id="login-password" required>
  <i class="fas fa-lock"></i>
  <label for="">password</label>
</div>

<div class="forgot-pass">
  <a href="#">forgot password?</a>
</div>

<button type="submit" class="btn" id="login-btn">login</button>

<div class="link">
  <p>Don't have an account?<a href="#" class="signup-link"> sign up</a></p>
</div>

</form>

</div>

</div>

<script type="module" src="login.js"></script>

<script src="sign1.js"></script>

<script src="https://kit.fontawesome.com/9e5ba2e3f5.js"
crossorigin="anonymous"></script>

<script src="https://accounts.google.com/gsi/client" async defer></script>

<script type="module" src="sign2.js"></script>

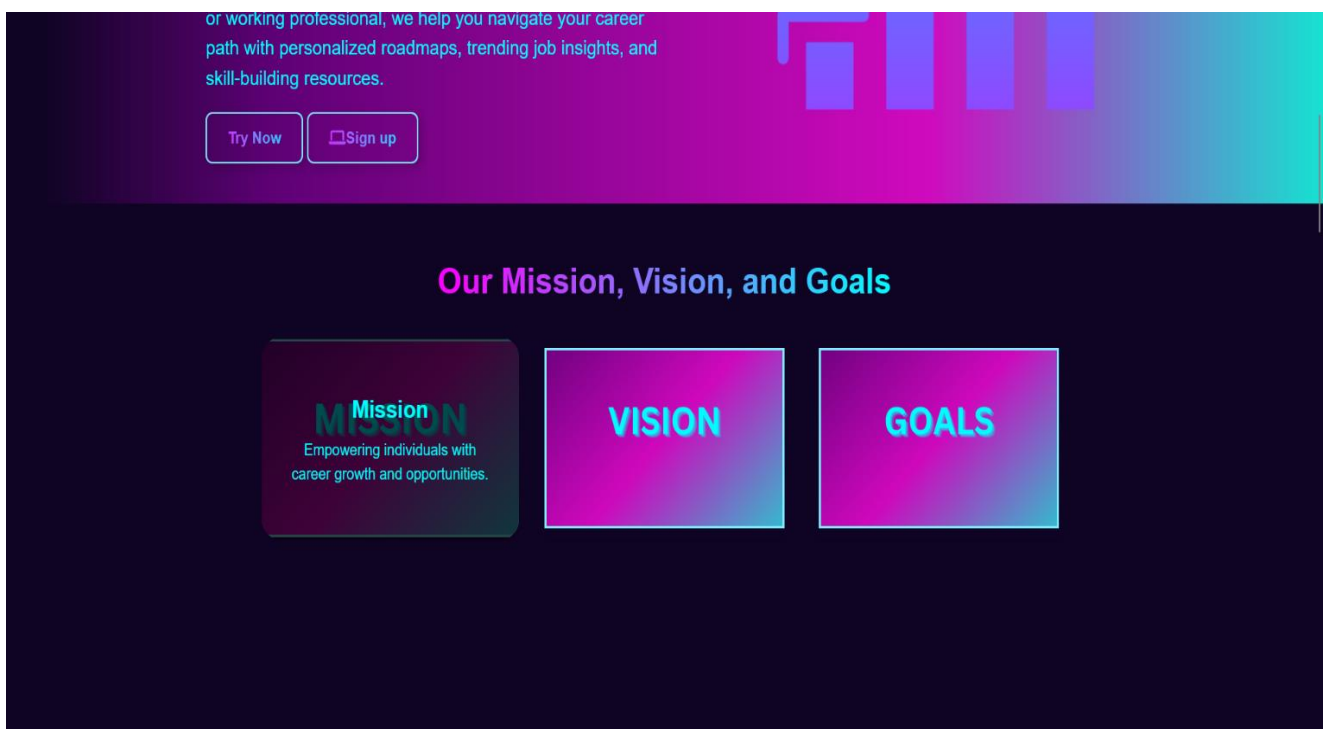
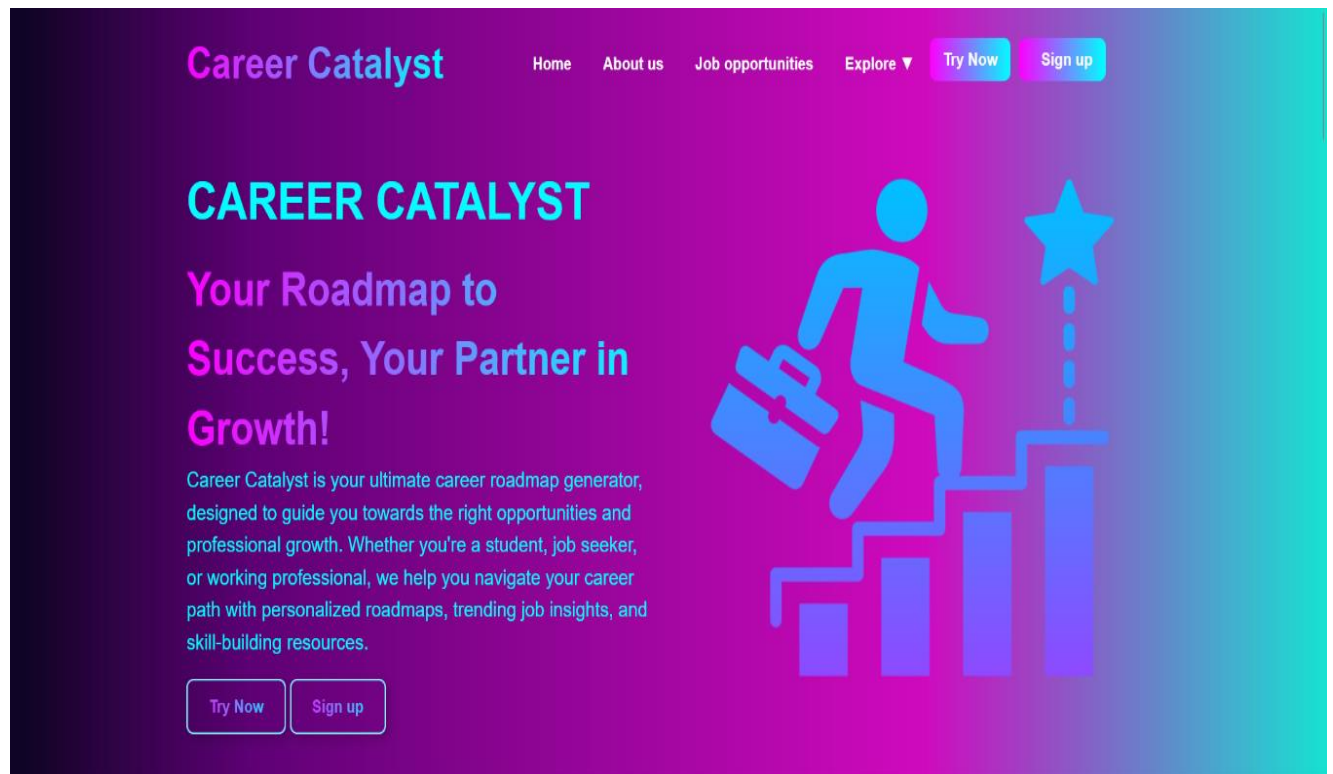
</body>

</html>

```

8. SCREEN LAYOUTS

8.1 HOME PAGE



Come, Learn, and Let's Grow Together!

With Career Catalyst, success isn't just a destination— it's a journey we build together!

Try Now



Frequently Asked Questions

What is Career Catalyst?



Who can use Career Catalyst?



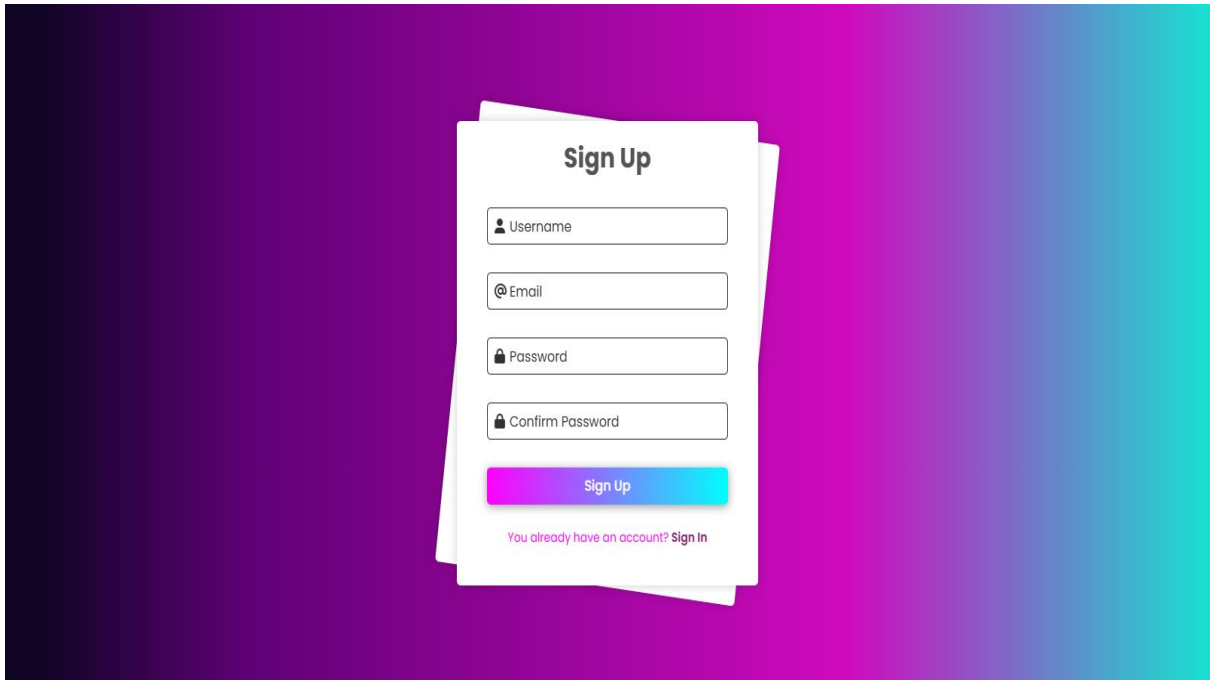
How does Career Catalyst help in career growth?



How can I find the right career path?



8.2 SIGNUP/LOGIN PAGE



A mockup of a 'Sign Up' form presented as a white card with a slight drop shadow, set against a background with a vibrant purple-to-teal gradient. The card is titled 'Sign Up' in a bold, black font. Below the title, there are four input fields, each with a small icon to its left: a person icon for 'Username', an '@' symbol for 'Email', a padlock for 'Password', and another padlock for 'Confirm Password'. A prominent button with a horizontal gradient from purple to blue is labeled 'Sign Up'. At the bottom of the card, a line of text reads 'You already have an account? Sign In', with 'Sign In' being a clickable link.

Sign Up

Username

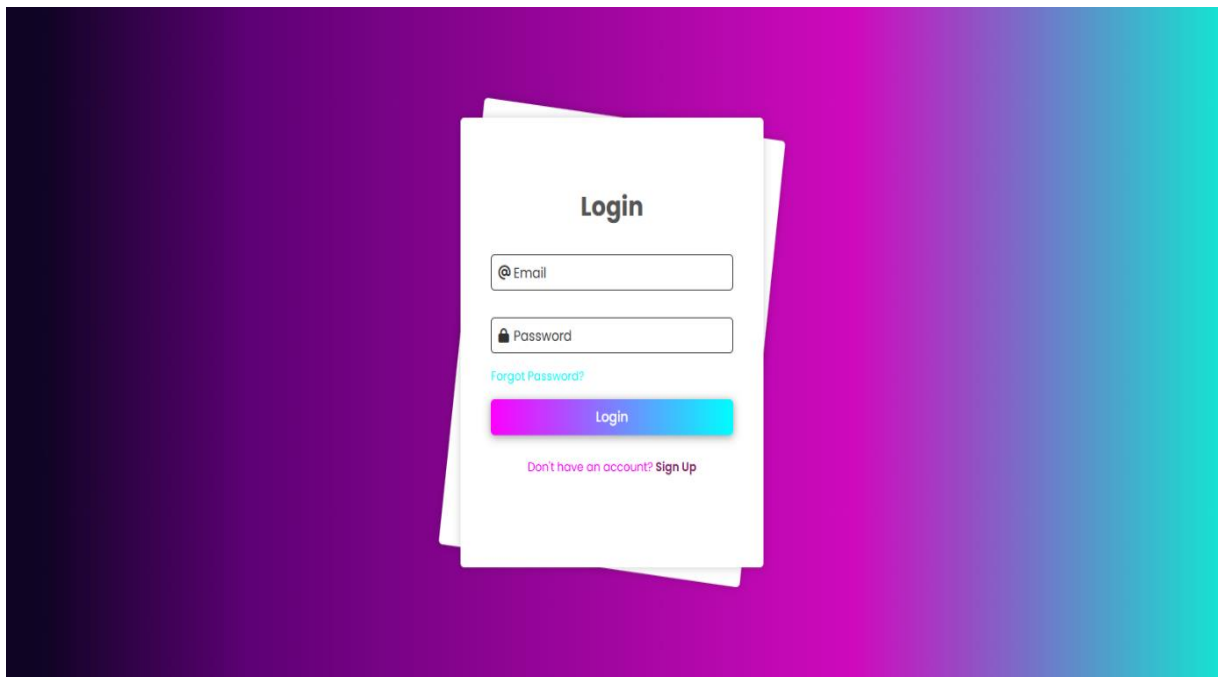
Email

Password

Confirm Password

Sign Up

You already have an account? [Sign In](#)



A mockup of a 'Login' form presented as a white card with a slight drop shadow, set against the same purple-to-teal gradient background. The card is titled 'Login' in a bold, black font. It features two input fields: one for 'Email' with an '@' icon and one for 'Password' with a padlock icon. A link labeled 'Forgot Password?' is positioned below the password field. A gradient button labeled 'Login' is located below the input fields. At the bottom, the text 'Don't have an account? Sign Up' includes a clickable link for 'Sign Up'.

Login

Email

Password

[Forgot Password?](#)

Login

Don't have an account? [Sign Up](#)

8.3 TECHNOLOGY TRENDS PAGE

Top Tech Trends 2025



🚀 Taking Flight: Self-Driving Cars, eVTOLs & Urban Air Mobility

Self-Driving Cars: The Groundwork for Autonomous Mobility

Self-driving cars, also known as **autonomous vehicles (AVs)**, represent a **game-changing shift** in transportation. Using **AI, sensors, and navigation systems**, AVs can drive without human intervention.

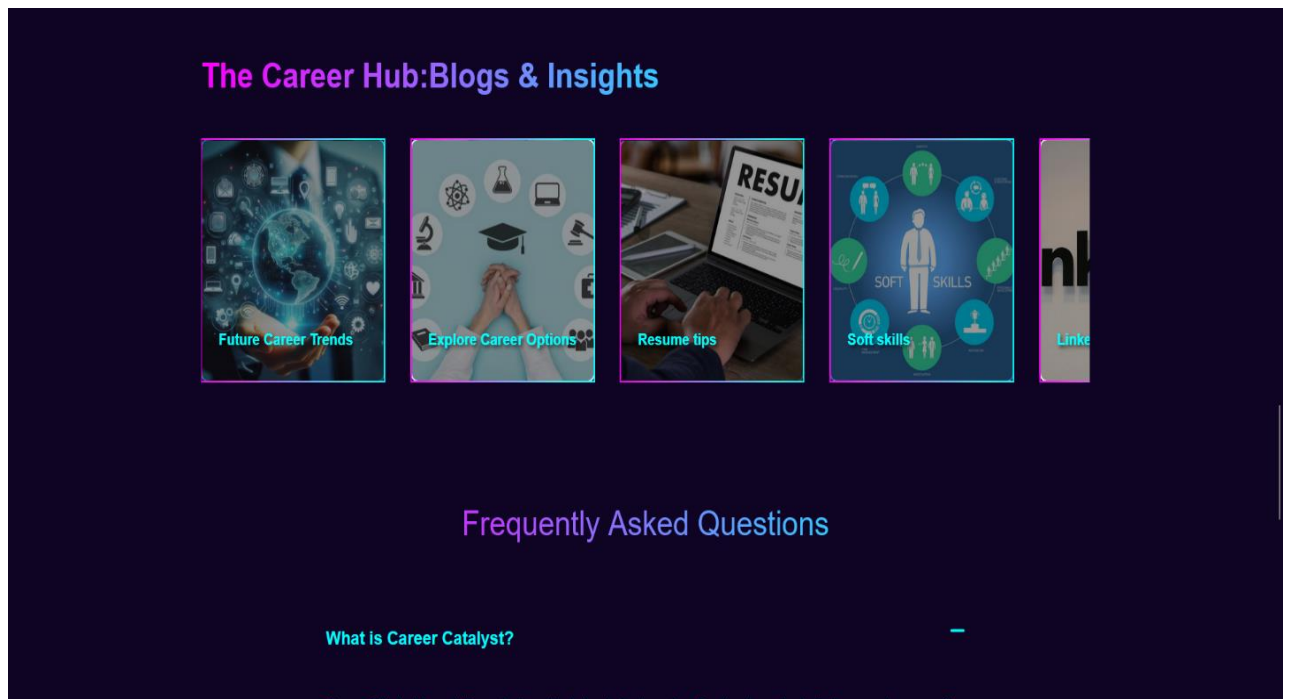
Their benefits include:

- **Increased Safety:** AVs reduce accidents by eliminating human error.
- **Less Traffic:** Autonomous coordination optimizes **traffic flow**.
- **Greater Accessibility:** AVs offer **mobility solutions** for the elderly and disabled.
- **Higher Productivity:** Passengers can work or relax during commutes.

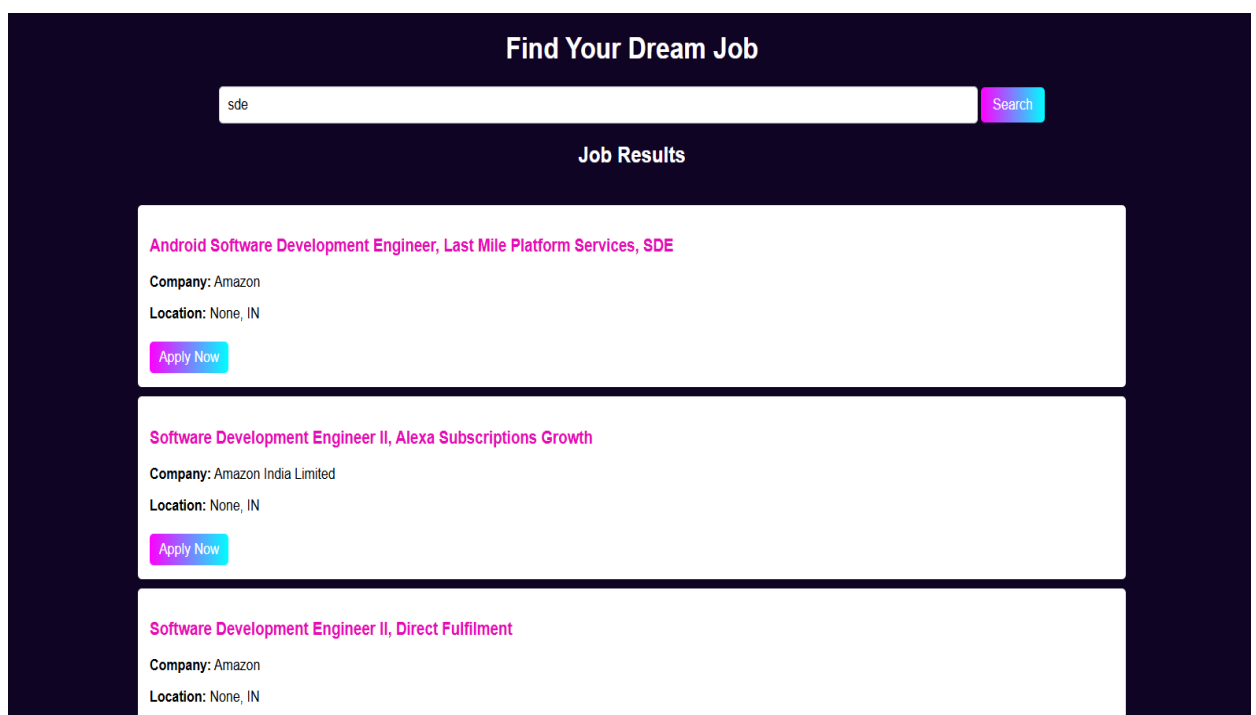
eVTOLs: Taking Urban Mobility to New Heights

eVTOLs, or **Electric Vertical Takeoff & Landing aircraft**, aim to solve **urban congestion** by offering **airborne transportation**. Unlike helicopters, eVTOLs are **quieter, electric-powered, and more efficient**.

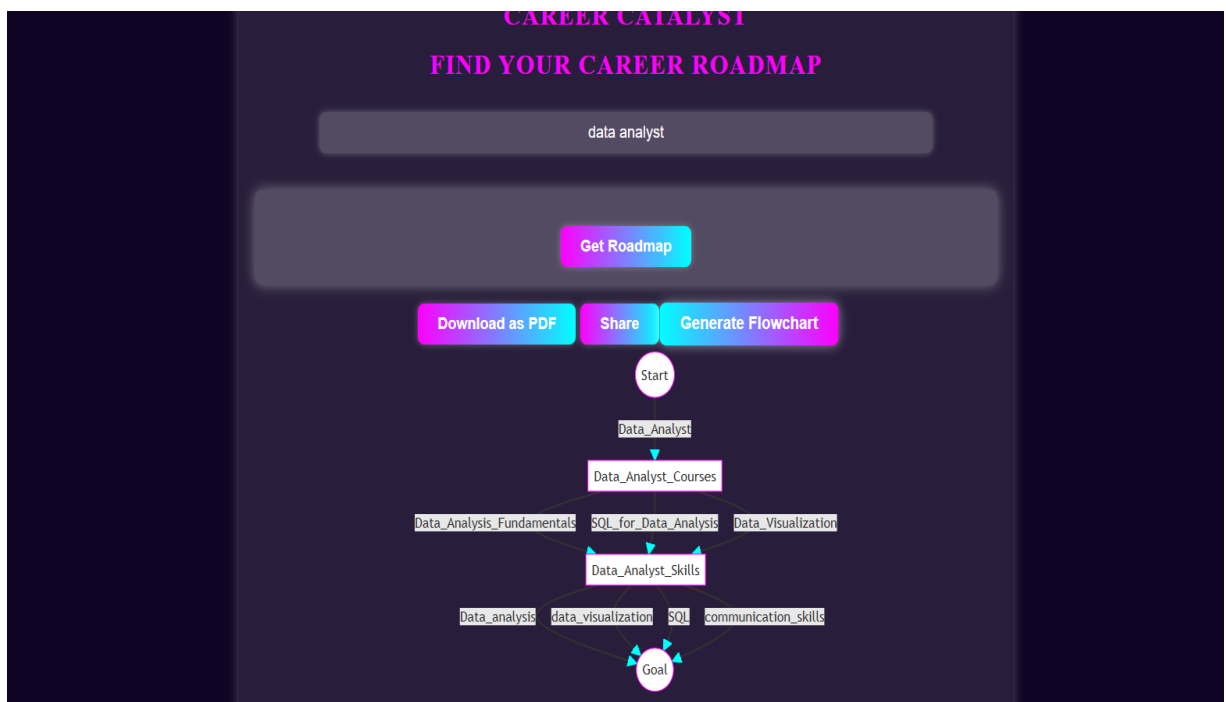
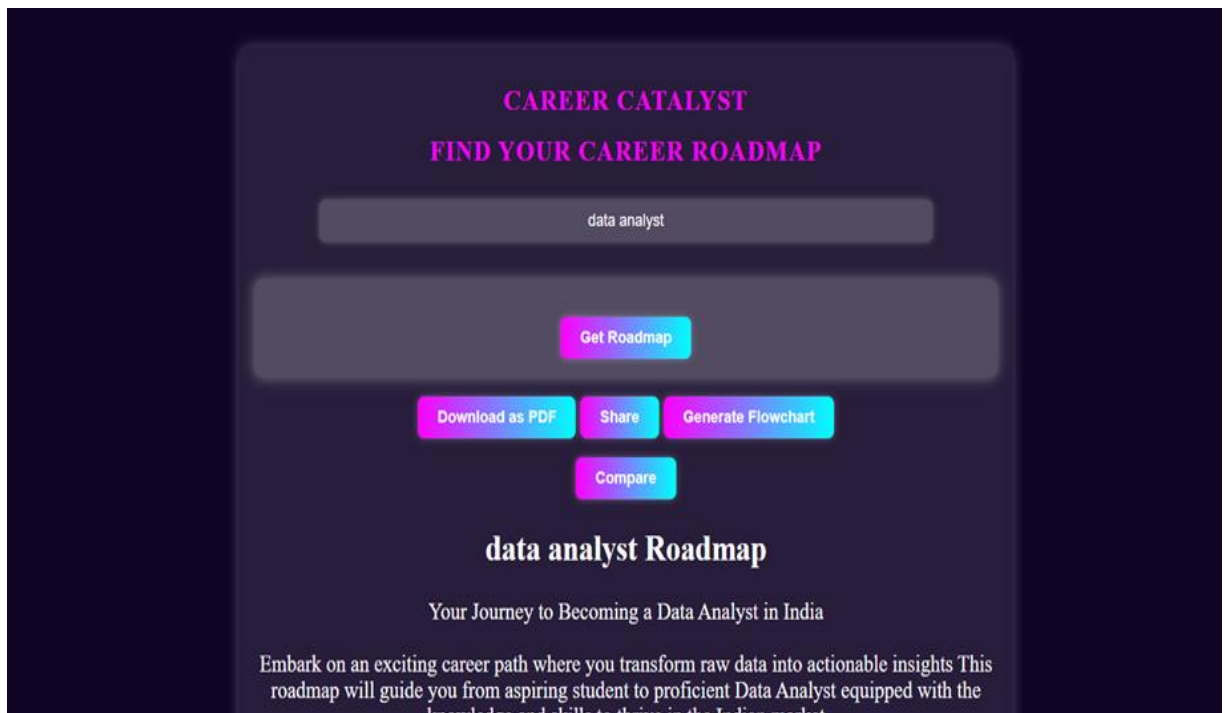
8.4 BLOGS PAGE



8.5 JOB OPPORTUNITIES PAGE



8.6 CAREER ROADMAP GENERATION PAGE



Compare

data scientist

data analyst

Compare Now

Career Comparison

Okay lets compare the career paths of Data Scientists and Data Analysts highlighting the key differences in a structured format

Data Scientist vs Data Analyst A Comparison

Feature	Data Analyst	Data Scientist
1 Educational Qualifications Required	Bachelors Degree in Statistics Mathematics Economics Computer Science or related field often sufficient Masters degree can be beneficial for advancement Masters or PhD in Statistics Mathematics Computer Science Physics or a related quantitative field is strongly preferred Focus on advanced analytical and modeling techniques	2 Key Skills Needed Data Analysis Visualization Excel SQL Tableau Power BI Data mining Statistical Analysis

8.7 NEWS PAGE

CAREER CATALYST :IGNITE THE FUTURE

Stay Informed, Stay Empowered!

Breaking News, Trends & Insights from Around the World

tech

Search

Samsung Electronics co-CEO Han Jong-hee dies of heart attack at 63

Head of tech giant's consumer electronics and mobile devices division passed away at a hospital on Tuesday

Spring Sale Brings Cutting-Edge Dreame Tech at Massive Discounts

Dreame is bringing its advanced cleaning models at a massive discount for those that are looking to upgrade this spring

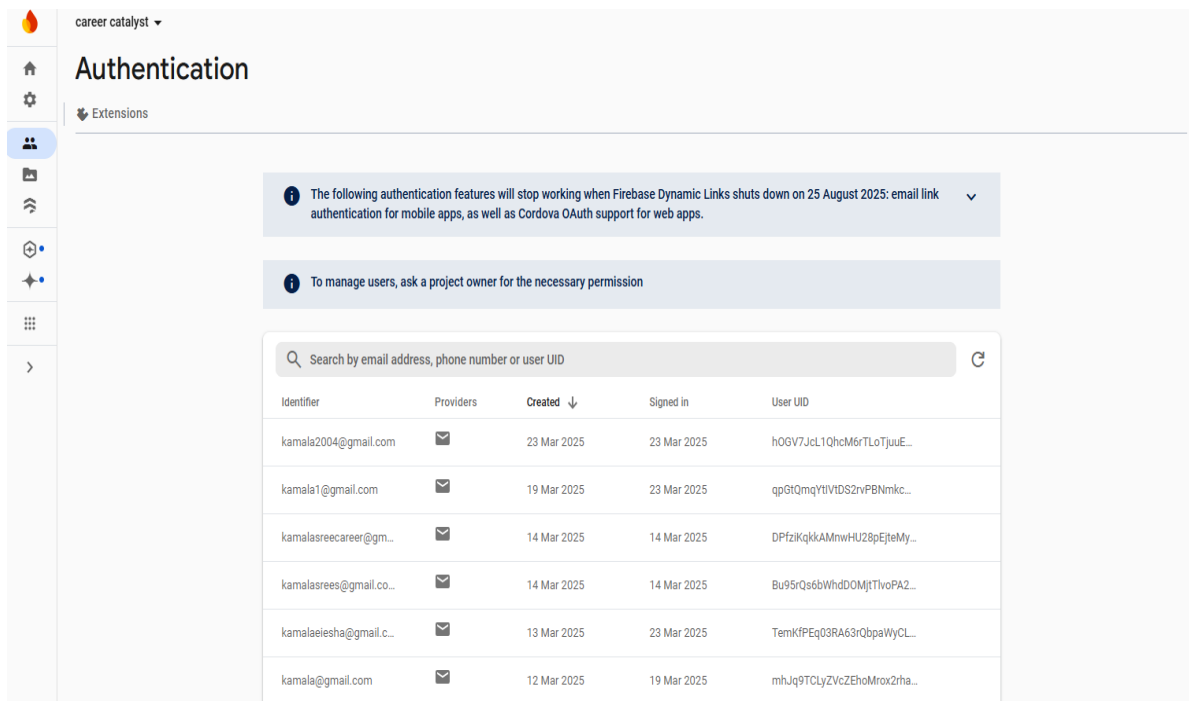
Doge cuts allow Musk to cash in with SpaceX and Starlink contracts, ex-workers warn

Tech CEO accused of aiming to privatize space and satellite operations as federal agencies reportedly seek contracts

One brave woman wrenched back control of her data from the tech giants. Now, go and do the same

News that Meta – under legal challenge – will stop targeting ads based on a user's personal data is huge, says former attorney general Dominic Grieve

8.8 FIREBASE AUTHENTICATION

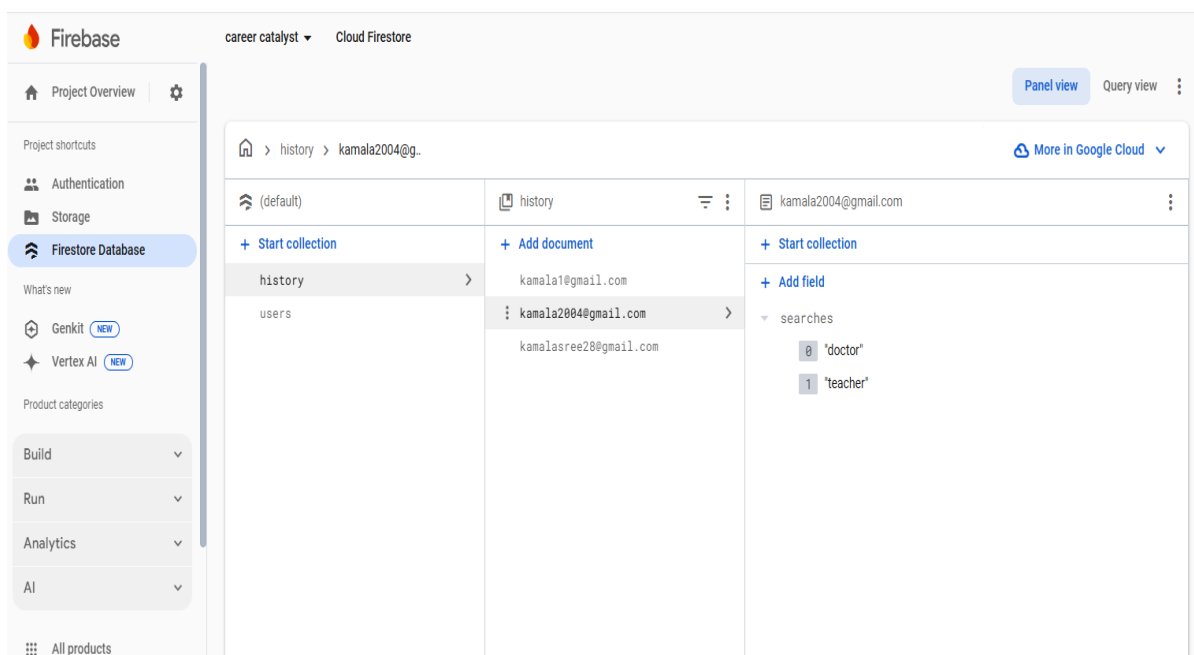


The screenshot shows the Firebase Authentication console for a project named 'career catalyst'. The left sidebar contains navigation icons for Home, Settings, Users, Groups, Email templates, Sign-in methods, and Security rules. The main content area has a header 'Authentication' and a sub-header 'Extensions'. Below these are two informational banners: one about the shutdown of Firebase Dynamic Links on 25 August 2025, and another about user management permissions. A search bar is present above a table of users.

Search by email address, phone number or user UID

Identifier	Providers	Created ↓	Signed in	User UID
kamala2004@gmail.com	📧	23 Mar 2025	23 Mar 2025	hOGV7JcL1QhcM6rTLoTJuuE...
kamala1@gmail.com	📧	19 Mar 2025	23 Mar 2025	qpGtQmqYtIVtDS2rvPBNmke...
kamalasreecareer@gm...	📧	14 Mar 2025	14 Mar 2025	DPfzIKqkAMnwHU28pEjteMy...
kamalasrees@gmail.co...	📧	14 Mar 2025	14 Mar 2025	Bu9SrQs6bWhdDOMjtTivoPA2...
kamalaeshia@gmail.c...	📧	13 Mar 2025	23 Mar 2025	TemKfPEq03RA63rQbpaWyCL...
kamala@gmail.com	📧	12 Mar 2025	19 Mar 2025	mHJq9TClyZVcZEhoMrox2rha...

8.9 FIRESTORE:



The screenshot shows the Firebase Cloud Firestore console for a project named 'career catalyst'. The left sidebar contains navigation icons for Project Overview, Authentication, Storage, and Firestore Database. The main content area has a header 'Cloud Firestore' and a sub-header 'kamala2004@g...'. Below these are two informational banners: one about the shutdown of Firebase Dynamic Links on 25 August 2025, and another about user management permissions. A search bar is present above a table of documents.

Panel view Query view

🏠 > history > kamala2004@g...

(default) history kamala2004@gmail.com

+ Start collection + Add document + Start collection

history users

kamala1@gmail.com

kamala2004@gmail.com

kamalasree28@gmail.com

+ Add field

searches

0 'doctor'

1 'teacher'

9. FUTURE ENHANCEMENTS

The Career Catalyst platform has significant potential for future enhancements to provide a more seamless and engaging experience for users. One major improvement is the development of a mobile application, allowing users to access career guidance, job opportunities, and personalized recommendations on the go. This will make the platform more accessible and convenient, ensuring that users can stay updated with the latest industry trends anytime, anywhere.

To enhance personalization, AI-driven career suggestions can be implemented, analyzing user preferences, skills, and industry trends to recommend suitable career paths, courses, and job opportunities. Additionally, real-time job alerts and internship notifications will keep users informed about relevant openings, improving their chances of securing employment.

A key enhancement would be the integration of real-time interactive features such as live career counseling sessions, webinars with industry experts, and mentorship programs, where users can connect with professionals and receive guidance tailored to their career aspirations. Furthermore, an AI-powered chatbot can be introduced to provide instant responses to career-related queries, helping users navigate the platform efficiently.

Security measures can be strengthened with multi-factor authentication (MFA) and advanced encryption techniques, ensuring the safety and privacy of user data. Additionally, integrating cloud-based resume storage will enable users to store and update their professional documents effortlessly, making job applications more efficient.

The platform's blog and news section can be expanded to support user-generated content, allowing professionals and students to share their insights and experiences. Integration with professional networking platforms like LinkedIn and GitHub can further enhance networking opportunities, making it easier for users to showcase their skills and connect with recruiters.

To improve engagement, gamification elements such as badges, rewards, and leaderboards can be introduced, motivating users to complete learning modules, certifications, and skill assessments. Another useful feature would be the implementation of a career progress dashboard, where users can track their learning progress, achievements, and career growth in real time.

Lastly, the platform can be enhanced with voice and speech recognition technology, enabling hands-free navigation and voice-based career search. Additionally, multilingual support can be introduced to make the platform accessible to a wider audience, breaking language barriers and providing career guidance to users from diverse backgrounds.

By incorporating these future enhancements, Career Catalyst can evolve into a highly intelligent and comprehensive career development platform, empowering users to make informed decisions and achieve their professional goals more effectively.

10. BIBLIOGRAPHY

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