NEWS FEED APPLICATION

A PROJECT REPORT

Submitted by

BARTHIPA P

NIVETHA V

PRITHI B

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

K.RAMAKRISHNAN COLLEGE OF ENGINEERING (AUTONOMOUS) SAMAYAPURAM,TRICHY

ANNA UNIVERSITY
CHENNAI 600 025

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NEWS FEED APPLICATION

PROJECT WORK

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(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

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Under

ANNA UNIVERSITY,CHENNAI

BONAFIDE CERTIFICATE

Certified that this project report titled **“NEWS FEED APPLICATION”** is the bonafide work of **BARTHIPA P (8115U23AM011), NIVETHA V (8115U23AM033), PRITHI B (8115U23AM036)** who carried out the work under my supervision.

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HEAD OF DEPARTMENT	**SUPERVISOR**
ASSOCIATE PROFESSOR	**ASSISTANT PROFESSOR**
DEPARTMENT OF ARTIFICIAL	DEPARTMENT OFARTIFICIAL
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MACHINE LEARNING,	DATA SCIENCE,
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K. RAMAKRISHNAN COLLEGE OF ENGINEERING

(AUTONOMOUS)

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ANNA UNIVERSITY, CHENNAI

DECLARATION BY THE CANDIDATES

We declare that to the best of our knowledge the work reported here in has been composed solely by ourselves and that it has not been in whole or in part in any previous application for a degree.

Submitted for the project Viva- Voice held at K. Ramakrishnan College of Engineering on

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SIGNATURE OF THE CANDIDATES

ACKNOWLEDGEMENT

We thank the almighty GOD, without whom it would not have been possible for us to complete our project.

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We are glad to thank our Principal **Dr.D.SRINIVASAN, M.E., Ph.D.,FIE., MIIW., MISTE., MISAE., C.Engg,** for giving us permission tocarry out this project.

We wish to convey our sincere thanks to **Dr.B.KIRAN BALA, M.E., M.B.A., Ph.D.,** Head of the Department, Artificial Intelligence and Data Science for giving us constant encouragement and advice throughout the course.

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INSTITUTE VISION AND MISSION

VISION OFTHE INSTITUTE:

To achieve aprominent position among the top technical institutions.

MISSIONOFTHE INSTIITUTE:

M1: To best standard technical education par excellence through state of the art infrastructure,competent faculty and high ethical standards.

M2: To nurture research and entrepreneurial skills among students in cutting technologies.

M3: To provide education for developing high-quality professionals to transform the society.

DEPARTMENT VISION AND MISSION

DEPARTMENT OF CSE(ARTIFICIAL INTELLIGENCE AND MACHINELEARNING)

Vision of the Department

To become a renowned hub for Artificial Intelligence and Machine Learning technologies to produce highly talented globally recognizable technocrats to meetindustrial needs and societal expectations.

Mission of the Department

M1: To impart advanced education in Artificial Intelligence and Machine Learning,built upon a foundation in Computer Science and Engineering.

M2: To foster Experiential learning equips students with engineering skills totackle real-world problems**.**

M3: To promote collaborative innovation in Artificial Intelligence, machinelearning, and related research and development with industries.

M4: To provide an enjoyable environmentfor pursuing excellence while upholdingstrong personal and professional values and ethics

Programme Educational Objectives (PEOs):

Graduates will be able to:

PEO1: Excel in technical abilities to build intelligent systems in the fields of Artificial Intelligence and Machine Learning in order to find new opportunities**.**

PEO2: Embrace new technology to solve real-world problems, whether alone oras a team, while prioritizing ethics and societal benefits.

PEO3: Accept lifelong learning to expand future opportunities in research andproduct development.

Programme Specific Outcomes (PSOs):

PSO1: Ability to create and use Artificial Intelligence and Machine Learningalgorithms, including supervised and unsupervised learning, reinforcement learning, and deep learning models.

PSO2: Ability to collect, pre-process, and analyze large datasets, including datacleaning, feature engineering, and data visualization..

PROGRAM OUTCOMES(POs)

Engineering students will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineeringfundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problemanalysis:**Identify,formulate,reviewresearchliterature,andanalyzecomplex engineering problems reaching substantiated conclusions using first principles of mathematics,natural sciences, and engineering sciences

3. **Design/developmentofsolutions:**Designsolutionsforcomplexengineeringproblems anddesign system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis andinterpretation of data, and synthesis of the information to provide valid conclusions

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leaderin diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectivelyon complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

ABSTRACT

The News Feed Application is a dynamic platform designed to aggregate, filter, and display news articles from various sources, delivering real-time information to users. This application organizes news based on user preferences, such as topics, keywords, and popularity, ensuring a personalized and relevant feed. The system architecture includes components for data aggregation, categorization, and error handling to provide a seamless user experience. With an intuitive user interface, the app enhances accessibility to timely news, supporting media and digital communication needs. Future enhancements aim to integrate AI for recommendations, improve filtering options, and include multimedia support, making the application adaptable to evolving user demands in the information age.

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LIST OF FIGURES

LIST OF ABBREVIATIONS

XML	Extensible Markup Language
UI	User Interface
CTA	Call to Action
PWA	Progressive Web App
SDK	Software Development
KPI	Key Performance Indicator
ML	Machine Learning

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The News Feed Application consolidates articles from multiple news sources, allowing users to stay informed on selected topics. By offering real-time updates and interactive features, this application meets the growing need for on-demand news and media content.

1.2 PURPOSE AND IMPORTANCE

The purpose of this application is to provide users with personalized news feeds tailored totheir preferences, enabling easy access to relevant and timely information. This approach isessential for media organizations, journalists, and the public to efficiently access and manage information**.**

Real-Time Information Delivery: A core purpose of the news feed application is to deliver up-to-the-minute news to users, ensuring they are always informed about the latest events and developments in various fields such as politics, technology, entertainment, and more.

Content Aggregation: The application aggregates news from a wide range of sources, including news websites, blogs, social media, and news outlets. This helps users access content from multiple perspectives, offering a more balanced and diverse view of the news.

User Personalization: Personalization is another fundamental purpose. The app customizesthe news feed based on user preferences, such as topics of interest (e.g., technology, finance,sports, etc.), preferred sources, and reading history. This helps users see the most relevant and tailored contents.

Multimedia Integration: Modern news feed applications go beyond text articles to includemultimedia content such as images, videos, infographics, podcasts, and live streams. This enhances the storytelling experience and caters to diverse user preferences.

1.3 OBJECTIVES:

1. **Accuracy** in presenting authentic news.
2. **Flexibility** in filtering and sorting news by topics.
3. **Scalability** to support a growing number of users.
4. **Optimization** for fast loading and content retrieval.
5. **Error Handling** for server and network issues.
6. **Integration** with third-party news.

1.4 PROJECT SUMMARIZATION

This project aims to create a robust news feed platform that consolidates articles from varioussources, offering users an interactive and customizable experience. The application is designed to be reliable, providing accurate, up-to-date content from diverse news providers.It includes features for filtering, sorting, and personalizing news feeds according to user interests, ensuring relevance and user engagement. Additionally, the platform focuses on performance optimization to handle high data volumes in real time, making it suitable forusers seeking timely information on topics they care about.

CHAPTER 2

PROJECT METHODOLOGY

2.1 INTRODUCTION TO SYSTEM ARCHITECTURE

The system architecture of the news feed application is designed to handle large volumes of news content from multiple sources and present them in a structured, user-friendly format. It ensures real-time interaction, customization, and stability, with core components including:

1. Data Fetcher: Responsible for gathering news articles from multiple APIs or RSS feeds.This component manages connections to various news sources, retrieves the latest articles, and maintains a database or cache of fetched articles to optimize loading times. It is configured to update at regular intervals to ensure the news feed remains current.

2. Filter Engine: Sorts and organizes news content based on user-defined parameters such as topic, date, source, and popularity. This engine provides efficient sorting algorithms, allowing users to see the most relevant news. It supports different sorting criteria (e.g., date,relevance, popularity) and filtering (e.g., keywords, categories), giving users control over the displayed content.

3. User Interface (UI) Layer: The UI layer is the front-facing component where users interact with the application. It is designed to be intuitive, responsive, and adaptable to different devices, including mobile and desktop. The UI provides features like search, filteroptions, and bookmarking for personalized news browsing.

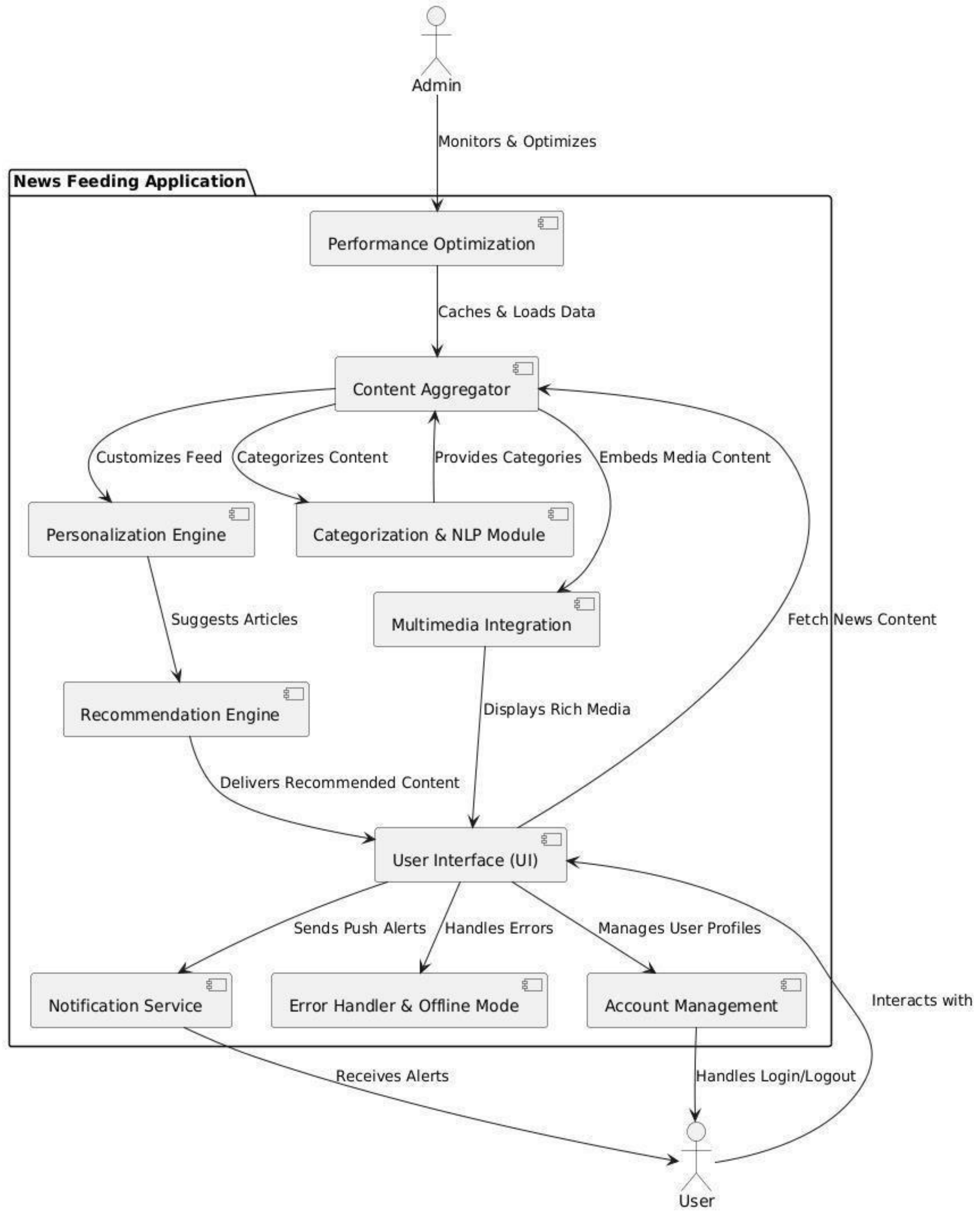
Additionally, it allows users to switch between viewing modes (e.g., grid or list view) and supports real-time updates as new articles become available.

4. Error Handler: This component is crucial for managing connectivity issues, server errors, and API response failures. It monitors the system for issues such as

timeouts, and unexpected errors, displaying appropriate feedback or retries to maintain a smooth user experience. In cases of prolonged downtime, the error handler providesinformative messages, allowing users to understand the nature of the issue.

5. Output Display: The final component responsible for generating and presenting filterednews articles to the user. It collects data processed by the Filter Engine and formats it according to user preferences displaying content ,accessible list or feed and a concise.

2.2 DETAILED SYSTEM FLOW DIAGRAM



The architecture diagram you've provided outlines a modular approach to building a news feeding application, with clear roles and responsibilities for each component. Here’s a detailed breakdown of each part in the diagram:

Admin: Monitors and optimizes app performance, ensuring efficient data caching andloading.

Performance Optimization: Caches and loads data to enhance speed and scalability, preventing performance issues.

Content Aggregator: Collects and organizes news from various sources, embedding multimedia content for a richer experience.

Personalization Engine: Customizes the news feed based on user interests and preferences,tailoring the experience for each user.

Categorization & NLP Module: Analyzes and categorizes articles using NLP, organizing them into relevant topics for easy access.

Multimedia Integration: Enhances articles with images, videos, and other media, creating an engaging experience.

Recommendation Engine: Suggests content based on user behavior and trends, providing relevant news recommendations.

User Interface (UI): Displays content in a user-friendly format, allowing navigation and interaction with news articles.

Notification Service: Sends real-time alerts and updates, keeping users informed of breakingnews.

Error Handler & Offline Mode: Manages app errors and offers offline access to cached articles, ensuring smooth usage.

Account Management: Manages user profiles, settings, and preferences for personalized content delivery.

User: Interacts with the app, reading, saving, and receiving notifications about personalizednews content.

This modular structure ensures seamless user experience, personalization, and efficient app performance.

CHAPTER 3

CORE FEATURES AND MODULES

3.1 Article Class and Content Representation

In a News Feed Application, the Article class is a fundamental component responsible forrepresenting news articles, including their attributes, content, and metadata. The content representation ensures that the information within each article is structured in a way that allowseasy parsing, display, and interaction with other modules in the application (like user interactions, feeds, or recommendations).

Article Class Overview: The Article class represents the core structure of a news item in theapplication. It contains both the article's content (text, images, etc.) and metadata, such as source,tags, publication date, and other features like likes, comments, and shares.

Content Representation:

Text: The article content is stored as a string, which could be plain text or HTML. The appcould render it based on how the article is stored.

Multimedia: The image and video attributes allow the article to include multimedia elementslike images and videos, enhancing the user experience by making the content more engagingand dynamic.

3.2 Feed Aggregation and Filtering

Feed aggregation refers to the process of collecting articles from various news sources orfeeds and consolidating them into a unified, digestible format. Aggregation typically pulls content from multiple publications, websites, or APIs**.**

Multiple Sources: Aggregating news from different news websites, blogs, RSS feeds, social media, or even APIs from news providers (like Google News, News API, etc.).

APIs and Scraping: Using APIs from news outlets (e.g., News API, New York Times API) or web scraping to gather the latest articles.

Time-sensitive Updates: Aggregating content in real-time, especially for breaking news,and regularly updating the feed.

Filtering helps to narrow down the aggregated news feed based on user preferences, content relevance, or other criteria. The goal is to show articles that are most relevant to the user’s interests while removing noise or irrelevant content.

Personalization: Filtering articles based on user interests, past reading habits, and selected preferences (e.g., topics, categories, or sources).

Topic or Keyword-Based Filtering: Filtering articles that contain certain keywords or belong to specific topics such as "Technology," "Politics," or "Health”.

Date/Time Filtering: Only showing articles published within a specific timeframe, like"last 24 hours" or "this week," to keep the feed relevant and fresh

CHAPTER 4

USER RECOMMENDATIONS

4.1 News Feed and Categorization Models

In a news feeding application, the news feed is a dynamic stream of content personalizedto users' preferences and interests. Categorization models play a vital role in organizing articles into relevant sections or topics, such as politics, technology, health, sports, and entertainment. These models leverage metadata like article tags, keywords, and categories to classify news content effectively. By using machine learning techniques like natural language processing (NLP) and topic modeling, the application can automatically categorize articles and ensure users receive the most relevant content based on their browsing habits and interests.

4.2 Dynamic Content Recommendations and AI Integration

Dynamic content recommendations are powered by AI algorithms that analyze user behavior, reading patterns, and interactions (such as likes, shares, and comments). Thesealgorithms can predict and suggest articles that align with a user's evolving interests. Byintegrating AI, the application adapts to individual user preferences over time, enhancing the user experience with personalized recommendations. Advanced AI models, including collaborative filtering and deep learning, can suggest not only similar articles but also new topics that the user may find intriguing, improving engagement and user retention.

4.3 Personalized News Feed Based on User Interests

A personalized news feed is at the core of any successful news application, tailoring content to users' specific interests. By analyzing user interactions such as reading history,clicks, likes, and comments, the application creates a unique feed for each user. The feeddynamically adjusts based on real-time data, ensuring users are presented with content that is most relevant to their preferences.

4.4 Node Structure and Article Organization

Node structures are an essential part of organizing and storing articles in a news feed system. Each article is represented as a node containing key attributes like title, content,publication date, and metadata such as tags and source. These nodes are linked in a hierarchical or graph-based structure that allows for efficient querying and navigation of articles. A node-based organization also helps in categorizing articles under different topics or sections, which facilitates easier retrieval, sorting, and filtering of content in thefeed. By maintaining a flexible node structure, the application ensures scalability and supports efficient updates as new articles are added.

4.5 Handling Multiple User Profiles and Account Management Managing multiple user profiles and accounts is crucial for delivering a personalized experience. Each user has a unique profile that stores their preferences, reading history,
and interaction data (likes, shares, comments). Account management features allow users to create, modify, and delete profiles, as well as manage settings such as notification preferences and privacy settings. The application ensures secure authentication and authorization mechanisms, enabling users to log in and access their customized feeds.

CHAPTER-5

PERFORMANCE CONSIDERATION

5.1 Article Class:

In a news feeding application, the Article class would represent individual news articles that are fetched, displayed, and interacted with by users. This class would typically encapsulate all the relevant data associated with an article, such as its title, content, source,publication date, and more. Below is an example of how you might structure the Article class in an object-oriented programming context, using Python for illustration:

5.2 Scalability and Real-Time Updates

Scalability and real-time updates are crucial performance considerations for a news feeding application, especially as user bases grow and expectations for up-to-the-minutenews become the norm. To ensure smooth user experiences under increased traffic and deliver timely content, the following strategies and technologies should be implemented:

Microservices Architecture: A microservices architecture can significantly enhance scalability by breaking down the application into smaller, independent services that can be scaled independently. For example, separate services might handle user authentication, content aggregation, personalization algorithms, and notifications. This modular approach ensures that each component can be scaled based on demand, reducingbottlenecks and optimizing resource use. If one service faces heavy traffic, it can be scaled without affecting others, ensuring smooth overall performance.

Load Balancing and Auto-Scaling: As user numbers increase, the system should automatically scale up to handle the additional load. Load balancing evenly distributes incoming traffic across multiple servers, preventing any single server from being overwhelmed. Auto-scaling mechanisms can be configured to detect when server resources are nearing their capacity.

5.3 Optimizing Data Retrieval and API Response Time

In a news feeding application, efficient data retrieval and fast API response times are essential for providing a seamless user experience. Users expect content to load quickly, especially when accessing real-time updates or personalized news feeds. Slow data retrieval or delayed API responses can lead to frustrated users, increased bounce rates, and poor app retention. Below are key strategies for optimizing data retrieval and minimizing API response times in a news feeding app.

Efficient Database Queries and Indexing: One of the most critical factors in improving API response time is optimizing database queries. Slow queries can bottleneck the entire system, especially when dealing with large volumes of news content. A few strategies to improve database query performance includes Indexing, Optimizing, Query Caching, Read/Write Separation.

Implementing Caching Mechanisms: Caching is one of the most effective ways to improve data retrieval speed and reduce server load. By storing frequently accessed data in memory, the application can serve data quickly without needing to fetch it repeatedly from the database. Several types of caching can be implemented Content Caching, API Response Caching, Expiration and Invalidation.

CHAPTER-6

APPLICATION DEVELOPMENT

The news feeding application can be designed using a modular architecture, ensuring scalability, real-time updates, personalization, and performance optimization. Here's a breakdown of a detailed architecture for such an application:

6.1 Overview

Backend

Frontend Code (HTML, CSS, JavaScript)

Run the Application

6.2 Project Architecture

News Feeding Application that integrates components for content aggregation, personalization, and user interaction. This architecture is structured to support scalability, efficient data processing, and real-time updates.

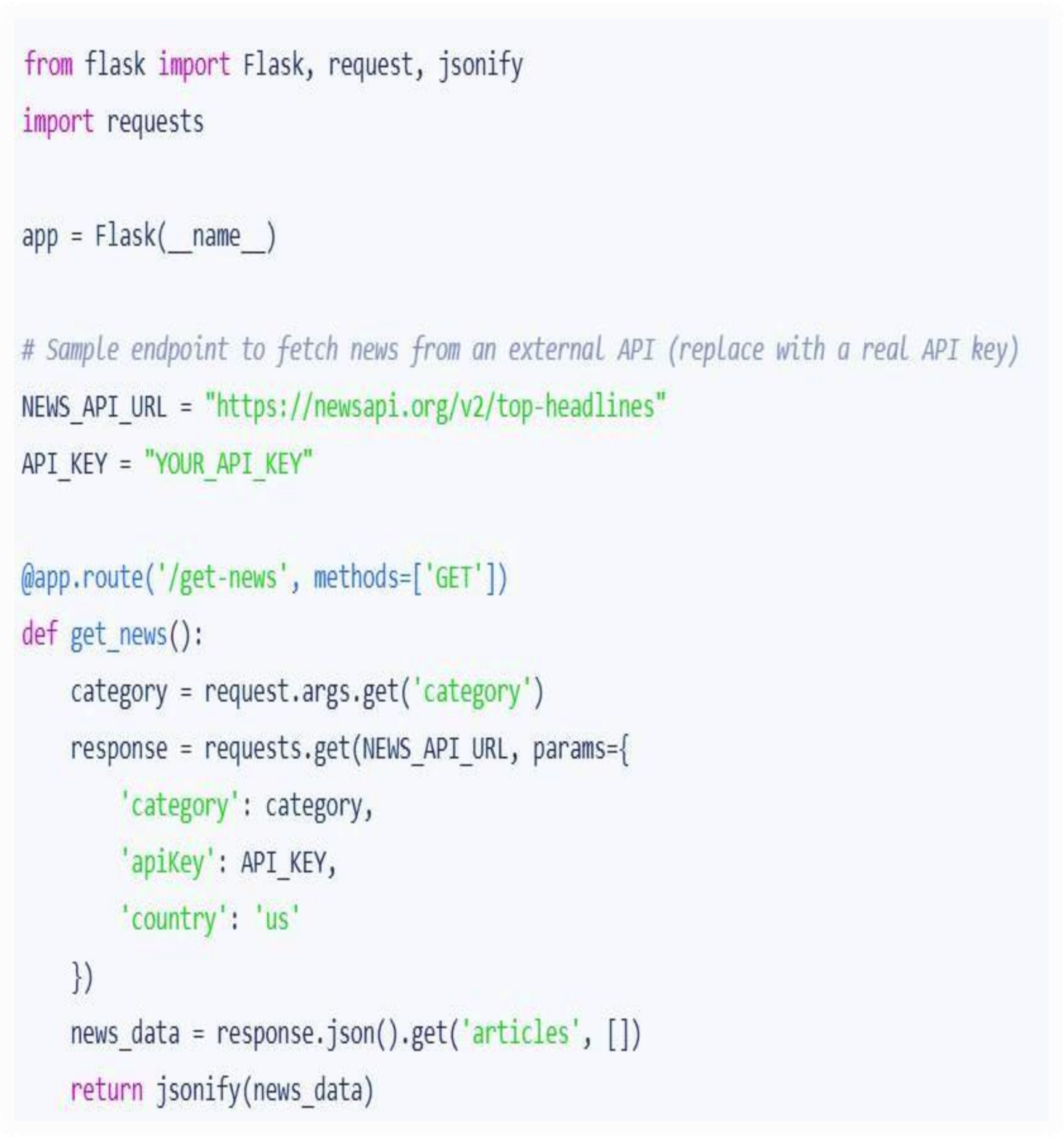
Step 1: Backend (Flask) Setup

The backend server is responsible for handling news aggregation and filtering based on userpreference

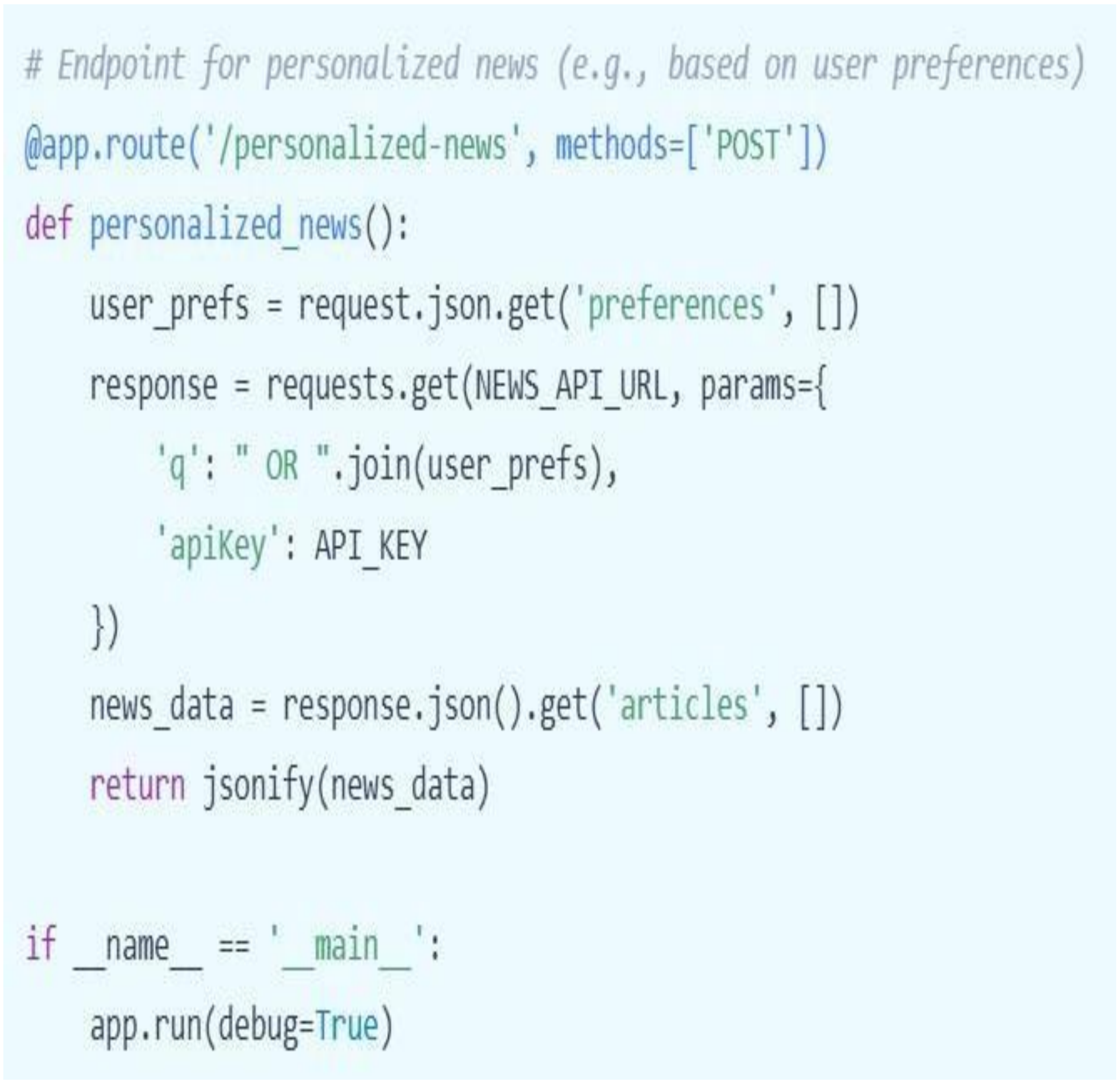
Install Flask:

```
pip install Flask
```

Flask Backend Code

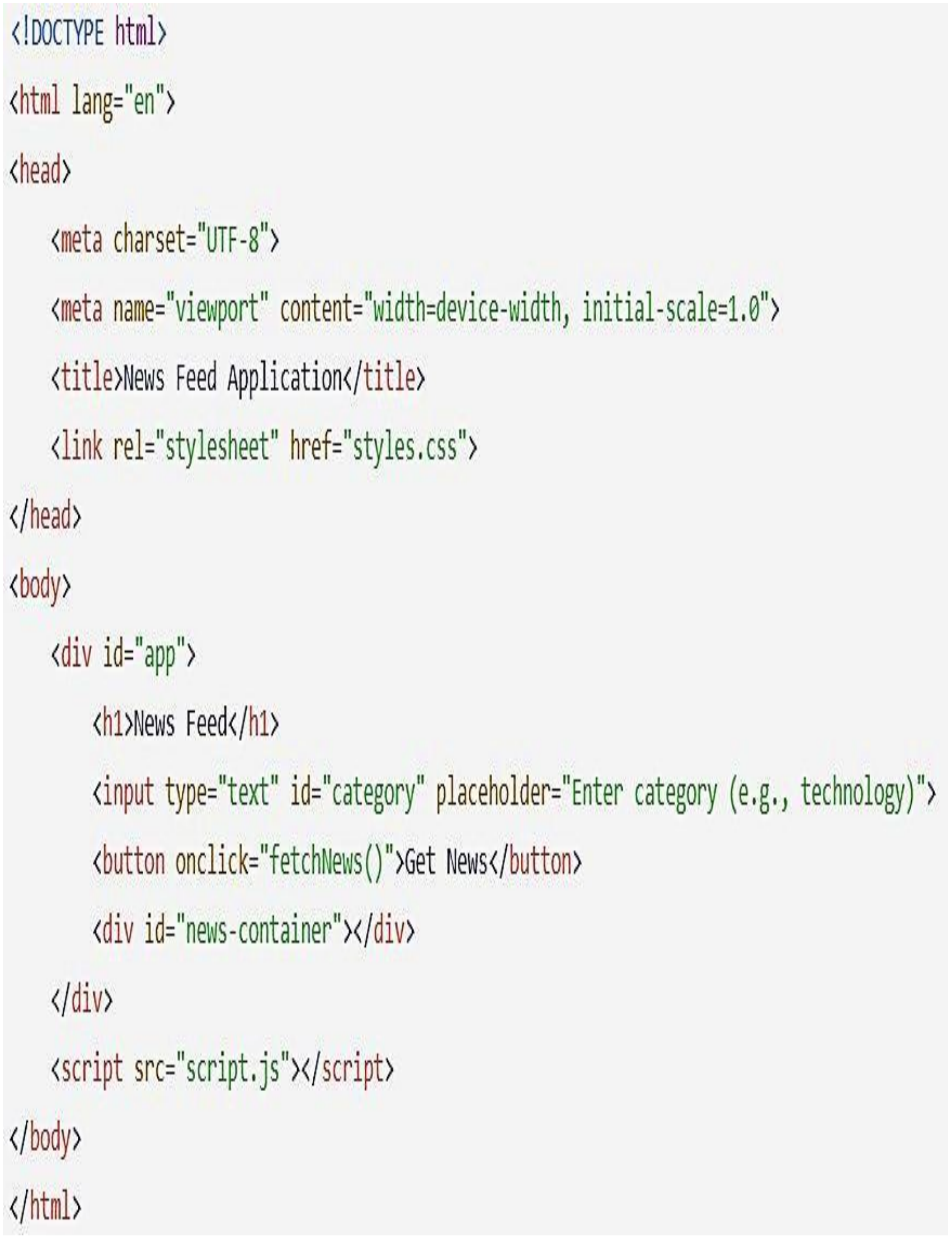


```python
from flask import Flask, request, jsonify
import requests

app = Flask(__name__)

# Sample endpoint to fetch news from an external API (replace with a real API key)
NEWS_API_URL = "https://newsapi.org/v2/top-headlines"
API_KEY = "YOUR_API_KEY"

@app.route('/get-news', methods=['GET'])
def get_news():
    category = request.args.get('category')
    response = requests.get(NEWS_API_URL, params={
        'category': category,
        'apiKey': API_KEY,
        'country': 'us'
    })
    news_data = response.json().get('articles', [])
    return jsonify(news_data)
```



```
# Endpoint for personalized news (e.g., based on user preferences)
@app.route('/personalized-news', methods=['POST'])
def personalized_news():
    user_prefs = request.json.get('preferences', [])
    response = requests.get(NEWS_API_URL, params={
        'q': " OR ".join(user_prefs),
        'apiKey': API_KEY
    })
    news_data = response.json().get('articles', [])
    return jsonify(news_data)

if __name__ == '__main__':
    app.run(debug=True)
```

Step 2: Frontend Code (HTML, CSS, JavaScript)



```html
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>News Feed Application</title>

    <link rel="stylesheet" href="styles.css">

</head>

<body>

    <div id="app">

        <h1>News Feed</h1>

        <input type="text" id="category" placeholder="Enter category (e.g., technology)">

        <button onclick="fetchNews()">Get News</button>

        <div id="news-container"></div>

    </div>

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

</body>

</html>
```

Step 2: Runtime Application

```
python app.py
```

This structure provides a basic news application that aggregates and displays news. Advanced features like AI-based recommendations, multimedia, and offline capabilities can be added based on this foundational setup. Let me know if you'd like more specific functionality addedto this framework.

CHAPTER-7

CONCLUSION & FUTURE SCOPE

7.1 CONCLUSION

In conclusion, the expression tree evaluation project demonstrates the effective utilization of data structures and algorithms to process and evaluate mathematical expressions. Through the implementation of expression trees and associated components, such as parsing modules, evaluation engines, and user interfaces, the project achieves the following objectives:

Optimizing Data Retrieval and API Response Time: Efficient data retrieval and fast API response times are fundamental to ensuring users can quickly access the latest news. By optimizing database queries, implementing caching mechanisms, and reducing unnecessary API calls, developers can significantly improve application speed. Asynchronous data loading and batching requests also help in minimizing latency and delivering content efficiently, even during peak traffic times.

Scalability and Real-Time Content Delivery: A news app must be able to scale effectively to handle increased user load, especially during breaking news events. Leveraging microservices architecture, load balancing, and caching strategies like Content Delivery Networks (CDNs) ensures that the app remains responsive and fast, even under high demand. Real-time content delivery through push notifications and Web Sockets enables users to receive timely updates, further enhancing engagementand satisfaction.

Balancing Performance with User Engagement: While technical optimizations like fast data retrieval and real-time updates are crucial, maintaining a balance between performance and user experience is just as important. An intuitive and user-friendly interface, combined with quick loading times, is essential for retaining users and fostering long-term engagement. It's important to ensure that technical improvementsdo not come at the cost of usability or content.

7.2 FUTURE SCOPE

As the demand for personalized, real-time information continues to grow, the future of news feeding applications is both exciting and transformative. With advancementsin technology, user behavior, and content delivery systems, there are numerous opportunities to enhance the functionality and impact of news apps. Below are some key areas for the future development and evolution of news feeding applications.

AI-Powered Personalization and Content Curation: In the future, news apps will leverage advanced artificial intelligence (AI) and machine learning (ML) algorithms to enhance content curation and personalization. By analyzing user preferences, browsing behavior, and even emotional responses, AI can deliver highly tailored news feeds that adapt over time. This will allow users to receive news not just based on what they've read in the past, but based on their interests, mood, or even their social media activity.

Augmented Reality (AR) and Virtual Reality (VR) Integration: Augmented Reality (AR) and Virtual Reality (VR) are poised to revolutionize how news is consumed. News apps could use AR and VR to offer immersive, interactive experiences that allow users to engage with stories in ways that traditional media cannot. For example, breaking news could be visualized in 3D or as an interactive map, giving users a deeper understanding of complex events.

Voice-Activated News Delivery: With the growing popularity of smart speakers (like Amazon Alexa, Google Assistant, and Apple Siri) and voice assistants, news apps can integrate voice-activated features that allow users to listen to their news while multitasking or on the go.

Integration of Social Media and Crowdsourced Content: Social media platforms like Twitter, Facebook, and Reddit have become crucial sources of breaking news. Future news apps will increasingly integrate user-generated content and crowdsourced information directly into their feeds, providing a more comprehensiveand real-time perspective on news stories.

APPENDICES

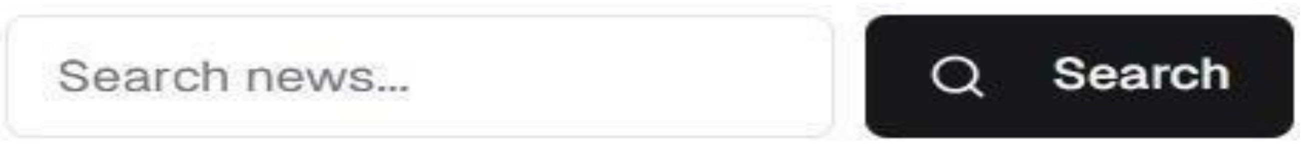
APPENDIX A-SOURCECODE

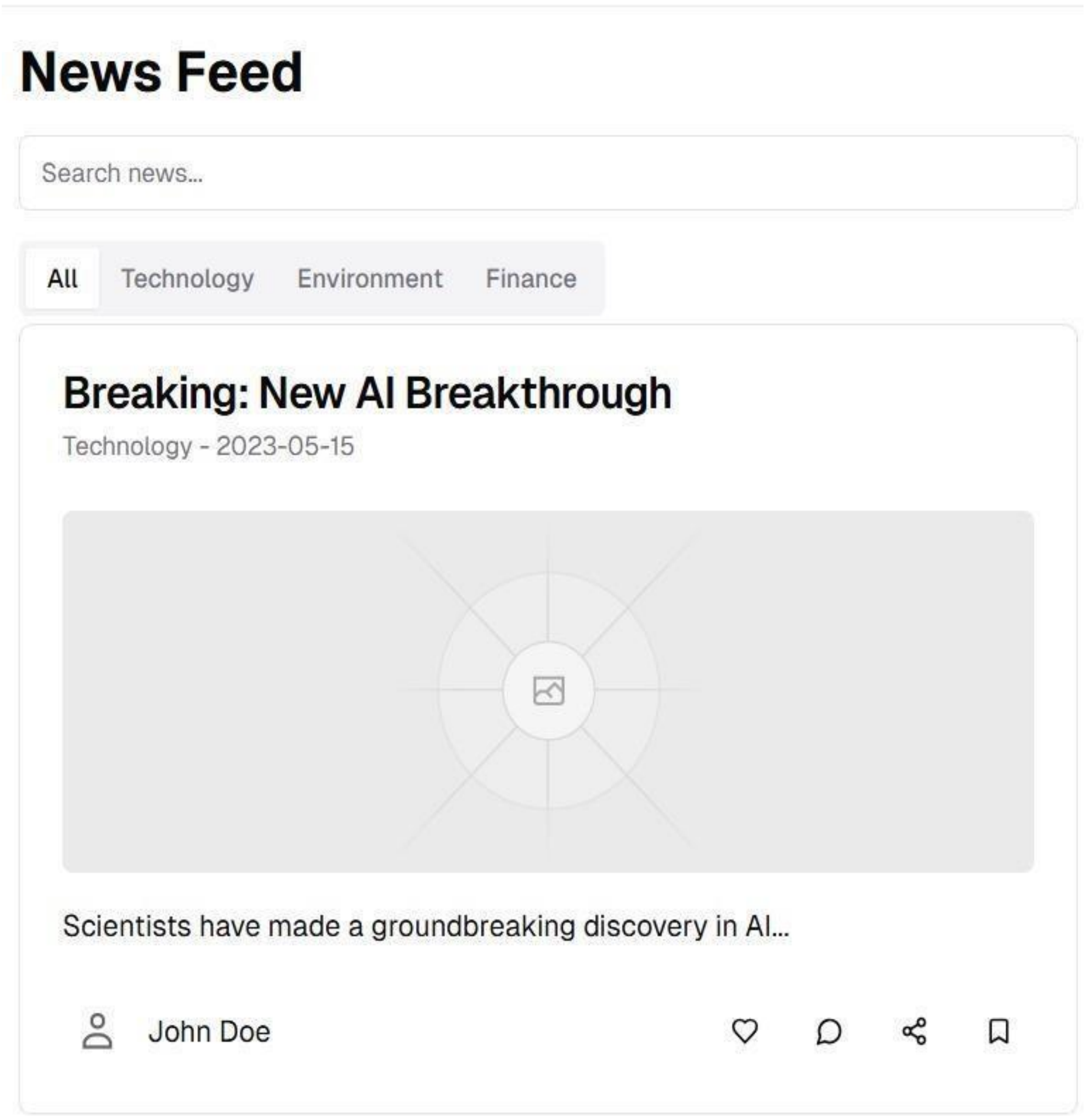
```
'use client'

import { useState, useEffect } from 'react'
import { Button } from "@/components/ui/button"
import { Input } from "@/components/ui/input"
import { Card, CardContent, CardDescription, CardFooter, CardHeader, CardTitle }
from"@/components/ui/card"
import { Tabs, TabsContent, TabsList, TabsTrigger } from "@/components/ui/tabs"
import { ScrollArea } from "@/components/ui/scroll-area"
import { Avatar, AvatarFallback, AvatarImage } from "@/components/ui/avatar"
import { Bell, Bookmark, Heart, MessageCircle, Share2 } from 'lucide-react'

// Mock data for demonstration purposes
const mockNews = [
  { id: 1, title: "Breaking: New AI Breakthrough", category: "Technology", content:
"Scientists have made a groundbreaking discovery in AI...", author: "John Doe", date:
"2023-05-15", image: "https://assets.public.blob.vercel-storage.com/ai-breakthrough-
YDMVF4/ai-breakthrough.jpg" },
  { id: 2, title: "Global Climate Summit Concludes", category: "Environment", content:
"World leaders have agreed on new climate goals...", author: "Jane Smith", date: "2023-
05-14", image: "/placeholder .svg? height=200&width=400" },
  { id: 3, title: "Stock Market Hits Record High", category: "Finance", content: "The S&P
500 reached an all-time high today...", author: "Mike Johnson", date: "2023-05-13", image:
"/placeholder.svg?height=200&width=400" },
]

export default function NewsFeed() {
  const [articles, setArticles] = useState(mockNews)
  const [searchTerm, setSearchTerm] = useState('')
  const [activeTab, setActiveTab] = useState('all')

  useEffect(() => {
    // In a real application, you would fetch news data here
  // For now, we're using mock data
}, [])

const handleSearch = (event: React.ChangeEvent<HTMLInputElement>) =>
  {setSearchTerm(event.target.value)
  // Filter articles based on search term

  const filtered = mockNews.filter(article =>
    article.title.toLowerCase().includes(event.target.value.toLowerCase()) ||
    article.content.toLowerCase().includes(event.target.value.toLowerCase())
  )
  setArticles(filtered)
}

const handleTabChange = (value: string) => {
  setActiveTab(value)
  if (value === 'all') {
    setArticles(mockNews)
  } else {
    const filtered = mockNews.filter(article => article.category.toLowerCase() ===
    value)setArticles(filtered)
  }
}

return (
  <div className="container mx-auto p-4">
    <h1 className="text-3xl font-bold mb-4">News Feed</h1>
    <div className="mb-4">
      <Input
        type="text"
        placeholder="Search news..."
        value={searchTerm}
        onChange={handleSearch}
        className="w-full"
      />
    </div>
    <Tabs value={activeTab} onValueChange={handleTabChange}>
      <TabsList>
```

```
 <TabsTrigger value="all">All</TabsTrigger>
<TabsTrigger value="technology">Technology</TabsTrigger>

        <TabsTrigger value="environment">Environment</TabsTrigger>
        <TabsTrigger value="finance">Finance</TabsTrigger>
      </TabsList>
    </Tabs>
    <ScrollArea className="h-[600px] w-full">
      {articles.map(article => (
        <Card key={article.id} className="my-4">
          <CardHeader>
            <CardTitle>{article.title}</CardTitle>
            <CardDescription>{article.category} - {article.date}</CardDescription>
          </CardHeader>
          <CardContent>
                    <img src={article.image} alt={article.title} className="w-full h-48
         object-        covermb-4 rounded-md" />
            <p>{article.content}</p>

</CardContent>
          <CardFooter className="flex justify-between items-center">
            <div className="flex items-center space-x-2">
              <Avatar>
                <Avatar Image src="/place holder. svg" alt={article. author} />
                <AvatarFallback>{article.  author[0]}</Avatar  Fallback>
              </Avatar>
              <span>{article.author}</span>
            </div>
            <div className="flex space-x-2">
              <Button variant="ghost" size="icon">
                <Heart className="h-4 w-4" />
              </Button>
              <Button variant="ghost" size="icon">
                <MessageCircle className="h-4 w-4" />
              </Button>
              <Button variant="ghost" size="icon">
                <Share2 className="h-4 w-4" />
              </Button>
              <Button variant="ghost" size="icon">
                <Bookmark className="h-4 w-4" />
              </Button>
            </div>
          </CardFooter>
        </Card>
      ))}
    </ScrollArea>
    <Button className="fixed bottom-4 right-4 rounded-full p-3">
      <Bell className="h-6 w-6" />
    </Button>
  </div>
 )
}
```

APPENDIX B– SCREENSHOT

RESULT





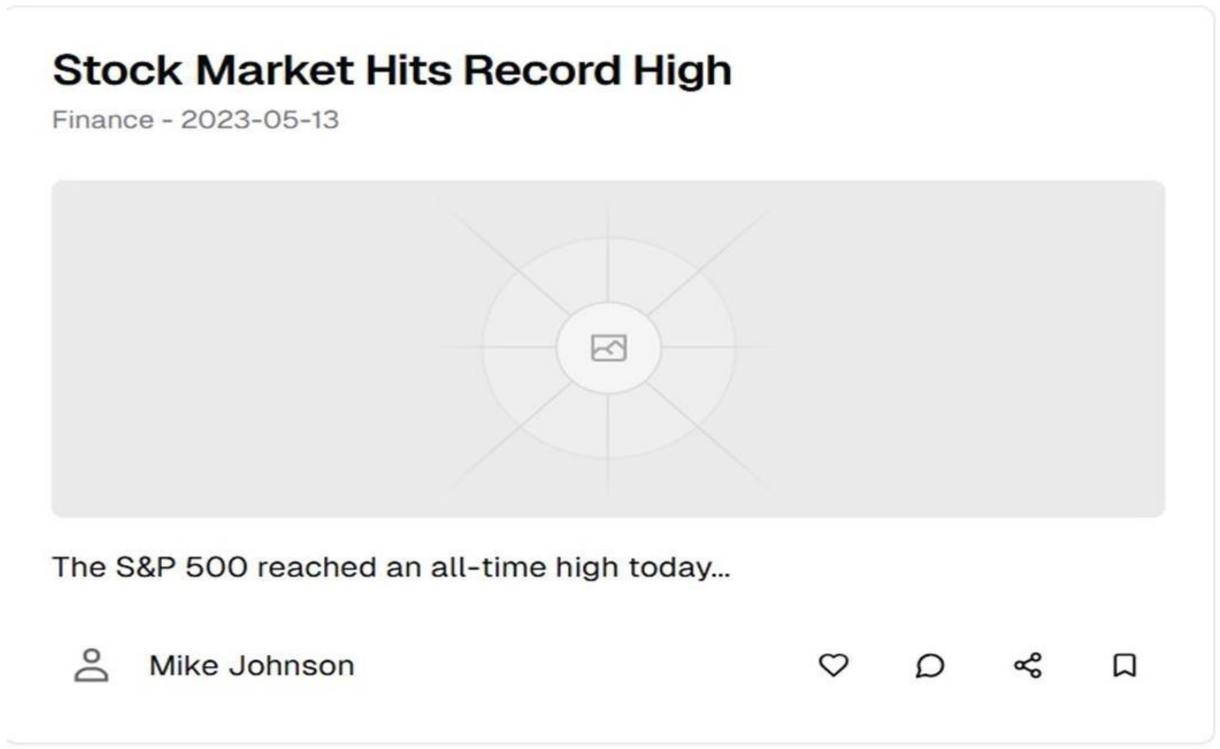
News Feed

Breaking: New AI Breakthrough

Technology - 2023-05-15

Scientists have made a groundbreaking discovery in AI...

John Doe

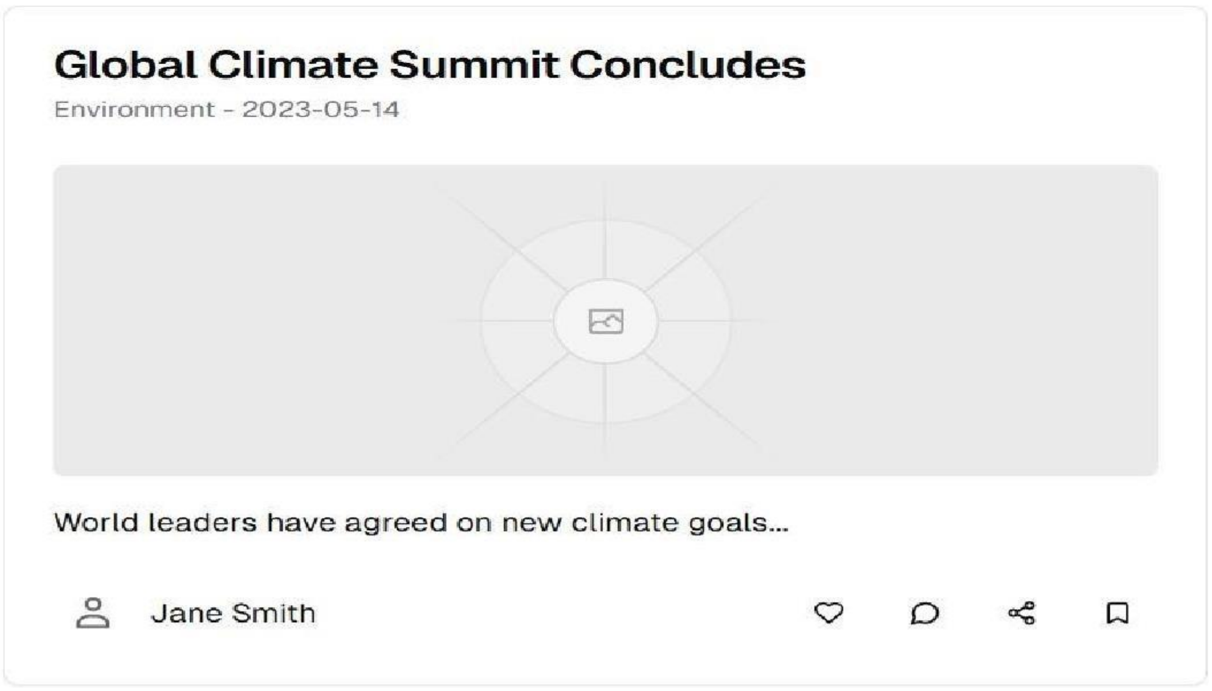


Stock Market Hits Record High

Finance - 2023-05-13

The S&P 500 reached an all-time high today...

Mike Johnson



Global Climate Summit Concludes

Environment - 2023-05-14

World leaders have agreed on new climate goals...

Jane Smith

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(This book provides insights into the digital transformation of supply chains, including the roleof tracking technologies in enhancing logistics efficiency).

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(This research explores vehicle routing and tracking problems, offering methods for optimizingtransport logistics).

3. **Deng, Q., & Zheng, Q. (2020).** *Real-Time Big Data Analytics for Predictive TransportationTracking*. IEEE Xplore.

(Discusses how big data and predictive analytics can improve real-time tracking in transportationsystems).

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(This book explains IoT technologies, including GPS and sensors, in logistics and their impacton supply chain visibility).

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(Discusses how GPS tracking optimizes last-mile delivery, focusing on improving customersatisfaction and reducing delivery times).

8. **Mohapatra, P., & Murthy, S. (2017).** *GPS and Location-Based Services in Transportation.*Morgan Kaufmann.
(A comprehensive guide on GPS applications in transportation, covering technical aspects and benefits of location-based tracking systems).

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(Examines how sensors monitor environmental conditions and location data in transporttracking, improving data quality and reliability).

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(Covers the current challenges in transport tracking and highlights emerging trends, such asautonomous vehicles and sustainability in logistics).