Assessment 2

ESG News Analyzer & Sentiment Tracker

Task Overview

Build a web application that aggregates ESG-related news about companies and uses AI to analyze sentiment and categorize issues into Environmental, Social, or Governance categories.

Duration	2 Days
Total Points	100

Problem Statement

The Challenge:

Investors, stakeholders, and conscious consumers struggle to stay informed about companies' ESG (Environmental, Social, Governance) performance. ESG-related news is scattered across multiple sources, making it difficult to track trends, understand sentiment, and identify critical issues affecting companies' sustainability practices.

Your Solution:

Create a platform that aggregates ESG news for companies, uses AI to analyze sentiment (positive/negative/neutral), automatically categorizes news into E, S, or G categories, and provides insights through visualizations and AI-generated summaries.

Understanding ESG Categories

- **Environmental (E):** Climate change, carbon emissions, pollution, waste management, renewable energy, water conservation
- **Social (S):** Labor practices, diversity & inclusion, employee welfare, human rights, community relations, product safety
- **Governance (G):** Board diversity, executive compensation, corruption, transparency, shareholder rights, business ethics

Required Features

1. **Company Search & News Aggregation**

- Search for companies by name
- Display ESG-related news articles for selected company
- Store news data in database with metadata

2. **AI-Powered Sentiment Analysis (REQUIRED)**

- Analyze each news article's sentiment using AI/NLP

- Classify as Positive, Negative, or Neutral
- Display sentiment score/indicator for each article

3. **AI Auto-Categorization (E/S/G) (REQUIRED)**

- Use NLP/AI to categorize articles into Environmental, Social, or Governance
- Tag each article with relevant ESG category
- Allow filtering by category

4. **Trend Dashboard & Visualizations**

- Charts showing sentiment trends over time
- Distribution of news across E, S, G categories (pie/bar chart)
- Timeline view of ESG events

5. **AI Summary Generation**

- Generate concise summaries of key ESG issues using AI
- Highlight major concerns or positive developments
- Show top trending ESG topics for each company

6. **Alerts & Notifications (Optional Bonus)**

- Email alerts for significant ESG events
- Watch list for tracking specific companies

News Data Sources (Choose One)

You can use any of these approaches:

7. **News APIs:** NewsAPI.org, GNews API, Bing News API (many offer free tiers)
8. **Mock Data:** Create sample ESG news articles (20-30 articles) and store in database
9. **Web Scraping:** Scrape ESG news from public sources (ensure legal compliance)

Sample Companies for Testing

Use these well-known companies that have significant ESG news coverage:

Tesla, Amazon, Microsoft, BP, Unilever, Patagonia, Nike, Nestlé, Google, Walmart

Technical Requirements

10. **Frontend:** React, Vue, Angular, or vanilla HTML/CSS/JavaScript
11. **Backend:** Node.js (Express), Python (Flask/Django), or any server technology
12. **Database:** MySQL, PostgreSQL, MongoDB, or Firebase
13. **AI/NLP Integration (Choose at least 1):**

- OpenAI API for sentiment analysis and categorization
- Hugging Face models (e.g., BERT for sentiment, zero-shot classification)

- Google Cloud Natural Language API
- Claude API / Gemini for text analysis
14. **Visualization:** Chart.js, D3.js, Recharts, or similar library
15. **Version Control:** GitHub with meaningful commits (10+ commits)
16. **Responsive Design:** Mobile and desktop friendly

Example AI Integration Approaches

For Sentiment Analysis:

Prompt: "Analyze the sentiment of this news article about [Company]: [Article Text]. Classify as Positive, Negative, or Neutral and provide a confidence score."

For ESG Categorization:

Prompt: "Categorize this news article into one or more ESG categories (Environmental, Social, Governance): [Article Text]. Explain which category and why."

Submission Requirements

17. **GitHub Repository** (public, with comprehensive README)
18. **Problem Statement Document** (1 page PDF)
19. **AI Usage Report** (1-2 pages PDF documenting AI tools and approaches)
20. **Video Demo** (3-5 minutes demonstrating sentiment analysis and categorization)
21. **SUBMISSION.txt** (containing all links and your details)

Evaluation Criteria (100 Points)

Criteria	Points
Problem Understanding & Documentation	15
AI Sentiment Analysis & ESG Categorization	30
Core Features (Search, Dashboard, Trends)	25
Code Quality & Documentation	20
Video Demo & Presentation	10
TOTAL	**100**

Help Make ESG Information Accessible!

Your platform can empower investors and consumers to make more informed, ethical decisions.