Nawa – Social Listening & Sentiment Analysis Platform

# Requirements:

Nawa is an AI-powered social listening and sentiment analysis platform designed to help brands monitor, analyze, and respond to online conversations across social media, forums, blogs, news sources, and Google Maps. The platform provides actionable insights to improve brand reputation, customer engagement, and marketing strategy.

# Proposed Solution:

### **Overview**

Nawa is an AI-powered social listening and sentiment analysis platform aimed at helping brands monitor, analyze, and respond to online conversations across various digital platforms; social media, forums, blogs, news sources, and Google Maps. The platform provides actionable insights to improve brand reputation, customer engagement, and marketing strategies.

Nawa aims to differentiate from competitors by offering more accurate Arabic sentiment analysis, tailored dashboards, local market intelligence, and comprehensive customer persona insights to empower brands with real-time insights, allowing them to understand their online perception and make data-driven decisions. Nawa aims to stand out by offering superior Arabic sentiment analysis, customized dashboards, and local market intelligence.

### **Project Objectives**

1. **Real-Time Brand Monitoring:** Track mentions and discussions about brands in real-time across social media, forums, news sites, and Google Maps.
2. **Sentiment Analysis:** Accurately identify positive, negative, and neutral sentiments with multi-language support (English and Arabic).
3. **Trend Analysis:** Detects emerging trends, customer pain points, and competitor insights.
4. **Actionable Insights:** Generate dashboards and reports to support marketing, PR, and product decision-making.
5. **Persona and Demographic Insights:** Understand user demographics and behavior to create customer personas.
6. **Custom Alerts and Notifications:** Real-time alerts for sudden spikes in mentions or sentiment changes.

### **Project Scope**

#### **Features and Functionalities**

**a) Data Collection:**

* **Social Media Platforms:** Integrate with popular social media platforms (Twitter/X, Instagram(via Meta Graph API), Facebook, TikTok(where permitted), YouTube(titles, descriptions, comments))..
* **Search & Maps Platforms:** Collect data from Google Maps Reviews(star ratings, timestamps, reviewer profiles), Google Reviews (public profiles), Geo-tagging for location-specific sentiment, Using Google Places API or Google Business Profile API,
* **Discussion & Content Platforms:** 
  + Reddit (subreddits, posts, threads),
  + Blogs, news outlets(via RSS/API), and custom channels.
* **Web Scraping:** 
  + Web scraping for platforms without APIs.
  + Data cleaning, deduplication, and normalization.
  + Real-time data updates and trend monitoring.

**b) Sentiment and Emotion Analysis:**

* **Multi-language Support:** English and Arabic, including local dialects.
* **Emotion Classification:** Joy, anger, sadness, etc.
* **Custom Sentiment Models:** Handle local slang and cultural nuances.
* **Entity-Level Sentiment Tagging:** Identify sentiment tied to specific topics.
* **Aspect-Based Sentiment Analysis:** Analyze sentiment regarding specific attributes (e.g., cleanliness, service).
* **Common Keyword & Phrase Extraction:** Identify recurring phrases related to brand sentiment.
* **Customer Persona Detection:** Profiling user demographics and behavior to build persona clusters.

**c) Social Listening and Monitoring:**

* **Real-Time Alerts:** Notifications for spikes in mentions or negative sentiment.
* **Tracking:** Hashtags, keywords, competitors, and custom topics.
* **Conversation Thread Tracking:** Maintain context in discussions.

**d) Dashboard and Reporting:**

* **Customizable KPIs and Widgets:** Tailor insights to specific business needs.
* **Sentiment Overview:** Loved, neutral, and hated summaries.
* **Geo Insights:** Breakdown of sentiment by region.
* **Top Posts and Mentions:** Identifying the most engaging or influential content.
* **User Activity Levels:** Measure brand activity on each social platform.
* **Competitor Benchmarking:** Compare sentiment, activity, and reach with competitors.
* **Engagement Trends:** Monitor daily, weekly, and monthly changes.
* **Word Cloud and Keyword Analysis:** Visual representation of commonly associated terms.
* **Persona Insights:** Breakdown of customer personas interacting with the brand.
* **Exportable Reports:** PDF and Excel formats for easy sharing.

**e) User Management:**

* **Role-Based Access Control:** Multiple users per company with different permission levels.
* **Multi-User Support:** Easy onboarding for enterprise clients.

**f) Security and Compliance:**

* **Authentication:** OAuth 2.0 for secure login.
* **Data Protection:** Encrypted storage and GDPR compliance.
* **Local Compliance:** Adaptation to Saudi data regulations.

**g) Scalability and Performance:**

* **Cloud Hosting:** AWS/GCP/Azure for horizontal scalability.
* **High Availability:** Reliable data access and processing.
* **Data Processing Pipelines:** Real-time ingestion with efficient API handling.

### **Technical Implementation**

**a) Backend:**

* **Languages:** Python (preferred), Node.js.
* **Libraries:** HuggingFace, spaCy for NLP.
* **Database:** PostgreSQL for structured data, Elasticsearch for indexing and search.
* **API Integration:** Social media APIs (Meta Graph, Twitter API, Google Places)**.**
* **Data Processing:** Real-time ingestion pipelines with scalable architecture.

**b) Frontend:**

* **Framework:** React.js or Vue.js.
* **Visualization:** Chart.js, D3.js for interactive graphs.
* **Responsive and RTL support for Arabic.**

**c) Deployment:**

* **Cloud Providers:** AWS/GCP/Azure.
* **Continuous Integration/Deployment (CI/CD) pipelines.**
* **Monitoring and logging for system health checks.**

### **Risk Assessment**

* **Data Privacy Issues:** Compliance with GDPR and local regulations.
* **API Limitations:** Use of official APIs and rate limiting.
* **Language Challenges:** Fine-tuning models for local dialects.
* **Scalability Concerns:** Implementing horizontal scaling with cloud infrastructure.

### **Success Metrics**

* Real-time data processing with minimal lag.
* Accurate sentiment analysis with over 85% accuracy.
* Comprehensive dashboard coverage of brand mentions.
* User satisfaction with ease of use and reporting accuracy.
* Positive feedback from marketing and PR teams.

### **Conclusion**

Nawa will revolutionize how brands monitor and understand their online presence, particularly in Arabic-speaking markets. By leveraging advanced sentiment analysis and multi-platform data collection, Nawa will provide brands with unparalleled insights, helping them make informed strategic decisions.