

**Project Title:**

Latest News Dashboard using Django, Django REST, Postgresql and Angular with Database Optimization

**Objective:**

Develop a web application with Django and Django REST framework as the backend to fetch news from the News API, incorporating database optimizations, and display it on a front-end built with Angular.

**Requirements:**

**Part 1: Backend Development with Django and Django REST Framework**

1. Setup Django Project:

- Initialize a Django project with necessary configurations.

2. Django REST as Proxy:

- Create a Django app to proxy News API.
- Utilize Django REST framework for API endpoints.

3. Integrate News API:

- Fetch the latest news using <https://newsapi.org/docs>.
- Periodically update news and store in a Django model.

4. API Endpoints:

- Develop endpoints for retrieving news (e.g., by category, country, source, query).

**Part 2: Frontend Development with Angular**

1. Setup Angular Project:

- Initialize an Angular application with necessary components.

2. Consume Backend API:

- Create Angular services to consume Django REST API.
- Handle API responses effectively.

3. Display News:

- Design a simple user interface for displaying news articles.
- Implement features like search, filter by category/source.
- Implement pagination, set 50 article per page
- Use cards to display the articles.
- After clicking the card, display the article in a new tab.

### **Part 3: Database Optimization**

#### **1. Database Design and Optimization:**

- Optimize database schema for efficient data retrieval.
- Implement partitioning strategies for large datasets.

#### **2. Caching Techniques:**

- Use caching to improve response times and reduce database load.
- Implement caching strategies in Django.

### **Part 4: Documentation**

#### **- Project Documentation:**

- Provide documentation on how to run the project.
- Document the setup process, including database and caching setup.
- Provide detailed API documentation.

### **Submission Guidelines:**

- Submit the code via a Git repository link.
- Include a README with setup and running instructions.
- Code should be well-commented and adhere to best practices.

### **Evaluation Criteria:**

- Functionality: Effectiveness of the application in fetching and displaying news.
- Code Quality: Cleanliness, organization, and efficiency of code.
- UI/UX Design: Usability and aesthetics of the interface.
- Database Optimization: Effectiveness of database partitioning and caching techniques.
- Scalability: The code's potential for future expansion and maintenance.