

News Android Application Report

Navneet Mishra(MT23049) Hrishikesh Khambete(MT23038) Ankur Tiwari(MT23017) Anshuman Uniyal(MT23018)

Overview

In this report, we provide a comprehensive overview of our Android news application's features and components. Our application is designed to fetch and exhibit the latest news articles, and it achieves this through the use of JSON parsing with Retrofit for efficient data retrieval. Additionally, our application harnesses the power of GPS and network providers to access the user's location and filter news articles based on the user's region. The application is composed of several main activities and fragments, which we shall discuss in detail.

1. **Home Fragment** - Displays the latest news articles.
2. **Region Fragment** - Allows the user to view news based on their current location.
3. **Category Fragment** - Enables users to filter news articles by categories such as technology, politics, sports, etc.
4. **Detailed News Activity** - Displays detailed news about a selected news article.
5. **Category News Activity** - Shows news articles specific to a selected category.

Features

1. News Filtering

- **Category Filtering:** Users can filter news articles based on categories like technology, politics, sports, etc.
- **Region-Based Filtering:** Utilizes the user's current location to provide region-specific news content.

2. Data Retrieval

- **JSON Parsing:** Uses Retrofit library for efficient JSON parsing and data retrieval from a backend server.

3. Location Services

- **GPS and Network Provider:** Accesses the user's location through GPS and network providers to provide region-specific news content.

4. User Interface Components

- **Home Fragment:** Displays the main feed of the latest news articles.
- **Region Fragment:** Shows news articles based on the user's current location.
- **Category Fragment:** Allows users to filter news by different categories.
- **Detailed News Activity:** Displays detailed information about a selected news article, including images, headlines, descriptions, and links.

Implementation Details

1. Retrofit for JSON Parsing

The retrofit library is used to make API calls and parse JSON responses from the backend server. It handles network operations asynchronously and simplifies the process of fetching and processing data.

2. Location Services

The application utilizes Android's location services to determine the user's current location using GPS and network providers. This information is then used to fetch region-specific news articles.

3. Fragments and Activities

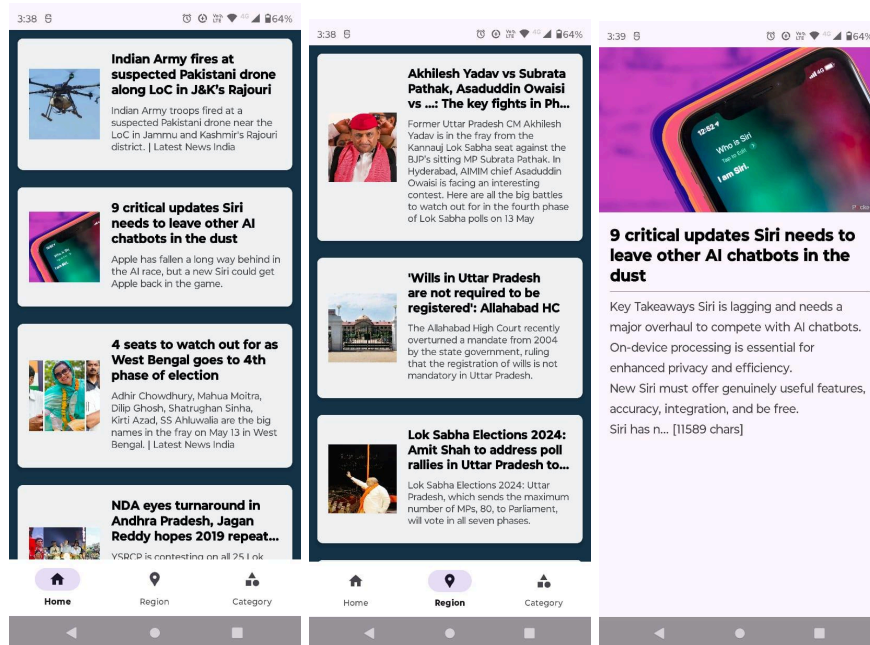
- **Home Fragment:** Implements a RecyclerView to display the latest news articles.
- **Region Fragment:** Fetches news articles based on the user's location and displays them using a RecyclerView.
- **Category Fragment:** Allows users to select a category to filter news articles accordingly

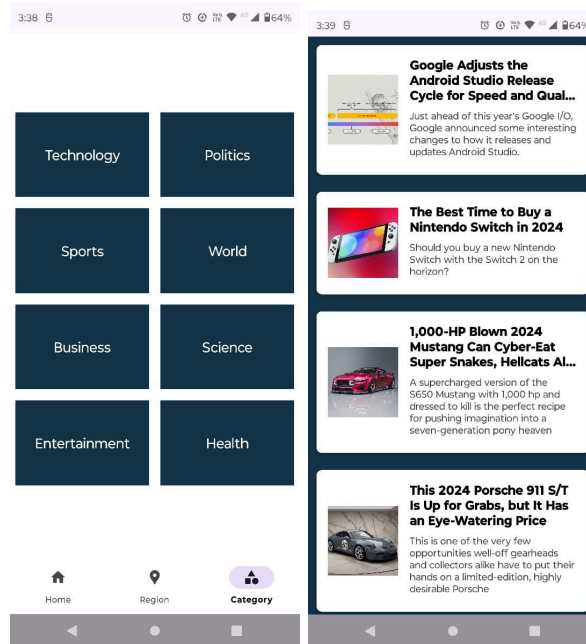
- **Detailed News Activity:** Shows detailed information about a selected news article, including images, headlines, descriptions, and links.
- **News Adapter:** Populates the recycler view of each activity with parsed JSON from the retrofit function call.
- **News Item:** Each recycler view was updated on the basis of the item defined in this activity.

4. Backend Integration

The application integrates with a backend server that provides news data in JSON format. Retrofit handles the API calls to fetch news articles based on selected categories and user locations.

5. ScreenShots





Conclusion

This Android news application provides users with the latest news articles filtered by categories and region based on their current location. Utilizing Retrofit for JSON parsing and location services for user location determination, the app offers a seamless experience for accessing and reading news content. Future enhancements can further improve user engagement and app usability.