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Android News Application with Admin Panel

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1. ABSTRACT

Mobile applications are become essential instruments for getting news material in this age of instantaneous information distribution. The goal of this paper is to give administrators effective administration capabilities and to give consumers a seamless news browsing experience through the design and implementation of an Android news application with an intuitive admin panel. Modern programming paradigms and frameworks are used in the development of the Android news application, guaranteeing excellent performance and compatibility with a wide range of devices. Users' overall news consumption experience is improved by the ease with which they may browse through different news categories, access articles, and interact with multimedia information. Moreover, administrators have the option to dynamically manage the content of the application through the admin panel. Through an easy-to-use interface, administrators may monitor user-generated content, publish, modify, or remove news stories, and track user engagement metrics. This gives administrators the ability to efficiently curate the news feed, guaranteeing accuracy and relevancy in the content that is given.

Keywords: Android News Application, Admin Panel, Content Management API's, User enagagement.

2. Introduction

Android offers a straightforward application structure, but using it requires familiarity with Java and Markup languages. For example, a single screen for a user interface is delivered by a discrete movement, and a service completes operations in the context. We can work on several modules independently, merge them at the end, and add other modules at any time. News API gives us access to the source of news stories from numerous sources in one location and refreshes it. An antiquated admin panel can be utilised to increase the sources, with authors filling in the API gaps. Google developed the "material design" design language in 2014. It is based on "cards" and combines depth effects like shadow, padding, and responsive animation with grind-based layouts to produce a user interface that is intuitive to use, appealing, and flexible. Utilising various libraries and material design allows for the creation of visually appealing user interfaces. The structure of an Android application is simple: discrete elements such as services and activities work separately to provide a seamless user experience. Within the programme, activities stand in for individual screens, and services handle asynchronous background processes. With this modular design, developers may work on various components independently and then seamlessly combine them at the end, making maintenance and future improvements easy. Using APIs such as News API ensures frequent updates and a rich content library by streamlining the process of obtaining news articles from various sources. An admin panel might be added to further diversify news sources by enabling writers to directly contribute content and enhance the API's offers.

3. Related Work

Native news applications are costly and challenging to update. Article management is handled by in-house writers for native publishers such as the NY Times and BBC News. Numerous local newspapers are sources from one perspective. With the use of Android's frameworks, libraries, and APIs, we can mix several sources in one location and improve user experience all while preserving the rights of the original creator. Newsapi is an API that gives live, global access to JSON (JavaScript Object Notation) metadata for headlines and articles at any time. We will use this API in this app to improve our user experience. It's likely that even with this API we won't be able to use all of the resources. In that case, we can use the Admin panel, which allows admins and writers to add, manage, and remove their own news. This section will feature an access bar branded "local news" and a separate database. It is possible to construct a module that gives the user access to different local news depending on where he is.

4. Methodology

To develop an Android news application, begin by defining its objectives and target audience, followed by thorough market research to understand existing apps and identify opportunities for innovation. Plan features such as news categorization, search, and personalized recommendations. Design wireframes and prototypes to visualize the app's layout and user interface, ensuring intuitive navigation and readability. Choose appropriate development tools and technologies like Java or Kotlin, Android Studio, and Firebase or SQLite for data storage. Optionally, develop a backend for server-side functionality using technologies like Node.js or Firebase. Integrate APIs for fetching news articles and implementing services like push notifications and analytics. Conduct rigorous testing across various devices and Android versions, gathering user feedback for iterative improvements. Finalize the app, prepare promotional materials, and deploy it to the Google Play Store. Ensure regular maintenance and updates to fix bugs, add features, and stay competitive, while prioritizing security, privacy, and compliance with regulations. Consider monetization strategies such as in-app advertisements or subscriptions to generate revenue.Developing an Android news application involves a multifaceted process that encompasses strategic planning, meticulous design, proficient development, comprehensive testing, and ongoing maintenance. At the outset, it's imperative to establish clear objectives for the app, understanding its intended purpose and the specific needs of the target audience. This initial phase lays the foundation for subsequent decisions regarding features, design elements, and technological infrastructure. Market research then plays a pivotal role in gaining insights into existing news applications, identifying trends, assessing user preferences, and uncovering potential gaps or opportunities for differentiation .

5. Modules

User Interface:

One of the factors in successful news app development is visualization of news and its feature with user. For the development of an android app material design is very useful and provides smooth experience with custom layout, views and animations. For this news app user should be able to select from different categories, countries and newspaper. Short News as list view with header, little description and image before showing full article can be helpful to user to determine what type of news they are looking for. View Holder can be used for this list view for better and fast experience. Library like Picasso can be used for better image handling. This User interface will be connected to API and Admin Panel database which will give full article in form of web view of that article. Because of this structure the integrity of writer of that article will not be in harm.
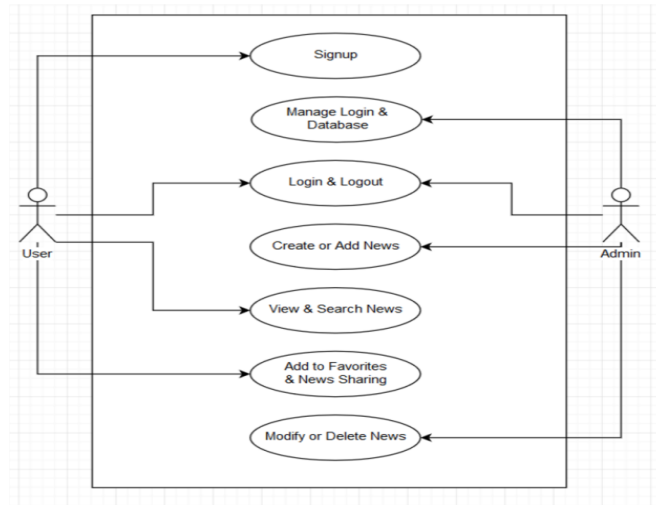
API:

News API has been used for collecting different news sources at one spot. On sending request it will give response in JSON format which contains source id, title, description, image URL, article URL, author, time etc. We need to handle and parse this JSON into string format which is our required format.

Admin Panel:

This module of app controls the User and Writers logins from database. Writers can add news, update and delete from its database as per required. Writers will only has access to admin panel while Main Admin will has access to database as well. Main Admin can add Users, Writers, and News. He can also approve, update and delete it. Using this approach we can create network in local areas connect by writers and local admins which will provide news at local level and we can also implement location feature which will update local news of different location or city.
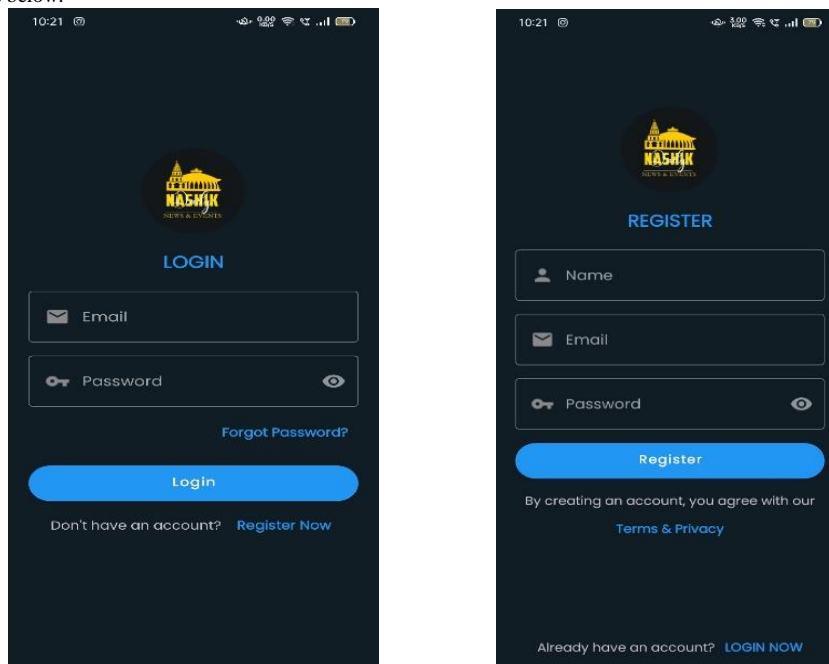
System model:

Use Case Diagrams referred as behaviour diagram which describes the commutation between actors or participations and set of actions.this is set of actions or use cases will be enclosed by the system boundary can also have relation with each other. Division among tupelos will based on the information gain computed for each attribute.
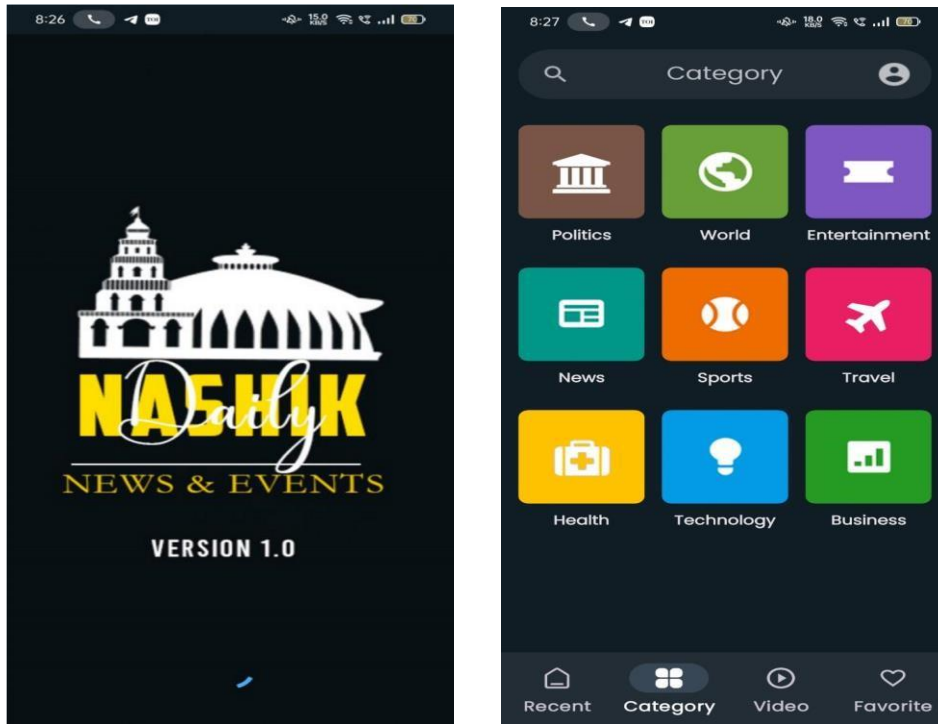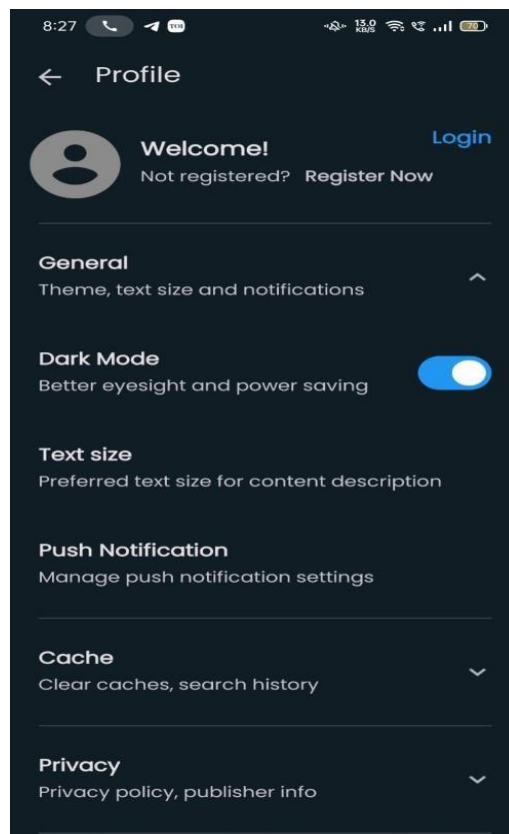
Experimental study and result:

User was allowed to use this application in his smartphone and screenshots were taken as a result for this study. First User need to Sign Up in order to access the application which provides security for this application. Also predicted user error handling with pop-up messaging was done before this experiment like entering invalid data in fields, not selecting a field before clicking on action button etc. The result will be shown in form of screen shots below.
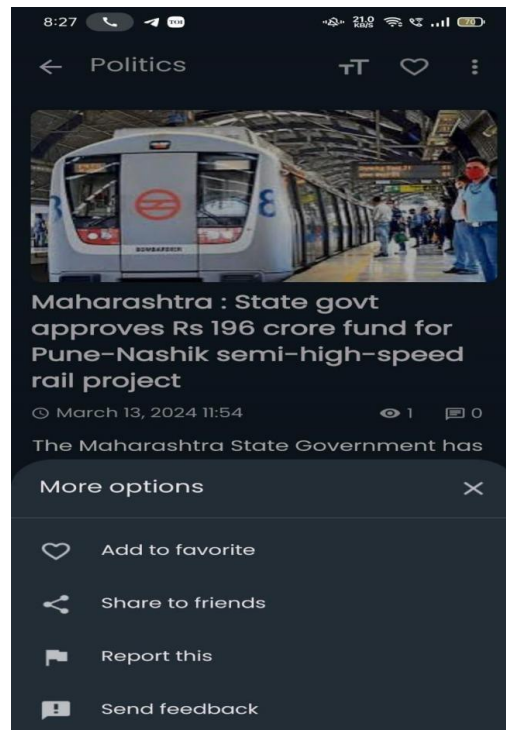

Login & Register

 Application start-up icon & Now u can search for a specific news by searching a news by category. There are different categories are provided to the users, such as politics, entertainment, sports, travel,health,technology,business

: User can create account through login or sign-in,which can be used for subscription feature.The dark mode facility is also available for screen reader.User can enable a notification for the new news updates. & User can view various news article videos.Thus,article videos can also added to the favourites that can user watch later.

: The News articles and Videos that are added to the favourites are appear in the favourite tab/section.

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