

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**BELAGAVI – 590018**



**PROJECT REPORT ON**

**“NEWS READER ANDROID APPLICATION”**

**BACHELOR OF ENGINEERING**

**IN**

**INFORMATION SCIENCE & ENGINEERING**

**MOBILE APPLICATION DEVELOPMENT [18CSMP68]**

**Submitted by**

**HARSHARAJ B – 4JK20IS019**

**ABHIRAM K R – 4JK20IS002**

**Under the guidance of**

**Prof Navya S Rai**

**Assistant Professor**

**Department of Information Science &  
Engineering**

**Prof Rakesh M R**

**Assistant Professor**

**Department of Information Science &  
Engineering**



**DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING**

**A.J. INSTITUTE OF ENGINEERING & TECHNOLOGY**

**NH-66, KOTTARA CHOWKI, MANGALURU – 575006**

**2022 – 2023**

# **A. J. INSTITUTE OF ENGINEERING & TECHNOLOGY**

NH – 66, Kottara Chowki, Mangaluru - 575006

A Unit of Laxmi Memorial Education Trust (R)

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi)

## **DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING**



### **CERTIFICATE**

Certify that the Project entitled “**NEWS READER ANDROID APPLICATION**” is carried out by Mr. **HARSHARAJ B**, USN: **4JK20IS019**, and Mr. **ABHIRAM K R**, USN: **4JK20IS002**, Students of sixth semester B.E. Information Science & Engineering, and submitted as a part of the course **MOBILE APPLICATION DEVELOPMENT [18CSMP68]** during the academic year 2022-2023.

It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The report has been approved as it satisfies the academic requirements in respect of Mobile Application Development Project prescribed for the said Degree.

---

**Prof Navya S Rai**

**Project Guide**

---

**Prof Rakesh M R**

**Project Guide**

---

**Dr Suresha D**

**Head of the Department**

---

**Dr Shantharama Rai C**

**Principal**

**Examiners**

**Signature with Date**

1.

2.

## ACKNOWLEDGEMENT

First and foremost, we thank our parents for what we are and where we are today, without whose hard work and sacrifice we would not be here today.

We deem it a privilege to place on record the deep sense of gratitude to our Project Guide **Prof. Navya S Rai, Assistant Professor**, Department of Information Science and Engineering, and **Prof. Rakesh M R, Assistant Professor**, Department of Information Science and Engineering, who always stood behind us and supported in each step of the project work.

We are grateful to **Dr. Suresha D.**, Head of the Department, Information Science and Engineering for his support and encouragement.

We are indebted to our respected Principal **Dr. Shantharama Rai. C**, beloved Vice President **Mr. Prashanth Shetty** and the management of **A. J. Institute of Engineering and Technology, Mangaluru** for providing all the facilities that helped us in timely completion of this project report.

Finally, we would like to thank all the teaching and non-teaching staff of Department of Information Science and Engineering for their valuable help and support.

Harsharaj B      4JK20IS019

Abhiram K R      4JK20IS002

## **ABSTRACT**

The need for getting reliable and fast news on what's happening around the world has to be the top priority of any person. In the hectic schedule we may not be able to dedicate time to read newspaper or watch Television. Data networks helps in developing apps that can bring news from around the world to fingertips anytime just by a click on a button. This helps people to get back their reading habits, follow the trends and get highlight of their favorite team. This News reader mobile application is a software program designed to provide users with a personalized and streamlined way of accessing news articles and other related content on their mobile devices. Through this news reader app the users get to experience a good interface. Main page which gives the top stories and the news is further divided into categories (sports, technology, health, science, entertainment) which helps the users to sort and read about specific category. The application also supports multiple languages, making it accessible to users from different regions around the world. The secondary aim of this application is to provide news from various sources, not repeating the content and give add-free experience.

# TABLE OF CONTENTS

<b>Chapter No.</b>	<b>Content</b>	<b>Page No.</b>
	<b>Acknowledgement</b>	<b>i</b>
	<b>Abstract</b>	<b>ii</b>
	<b>Table of Contents</b>	<b>iii</b>
	<b>List of Figures</b>	<b>iv</b>
<b>1</b>	<b>INTRODUCTION</b>	<b>1-4</b>
	1.1 Problem Definition	2
	1.2 Objectives of the Project	3
<b>2</b>	<b>REQUIREMENT SPECIFICATION</b>	<b>5-7</b>
	2.1 Software Requirements	5
	2.2 Hardware Requirements	6
	2.3 Functional Requirements	6
	2.4 Mobile Requirements	7
<b>3</b>	<b>DESIGN OF THE APPLICATION</b>	<b>8-10</b>
	3.1 Data Flow Diagram	8
	3.2 Use Case Diagram	10
<b>4</b>	<b>IMPLEMENTATION</b>	<b>11-13</b>
	4.1 Programming Languages used	11
	4.2 Java Environment	11
	4.3 About Android	11
	4.4 Android Architecture	12
	4.5 Linux Kernel	12
	4.6 Libraries	12
	4.6 Other implementations	13
<b>5</b>	<b>RESULTS</b>	<b>14-22</b>
<b>6</b>	<b>CONCLUSION AND FUTURE WORK</b>	<b>23</b>
	<b>REFERENCE</b>	

## LIST OF FIGURES

<b>Figure No.</b>	<b>Figure Name</b>	<b>Page No.</b>
3.1	Data Flow Diagram	8
3.2	Use Case Diagram	10
5.1	Splash Screen	14
5.2	Login Screen	15
5.3	Sign-Up Screen	15
5.4	Choose Country screen	16
5.5	Home Screen	16
5.6	Business category Screen	17
5.7	Entertainment category Screen	17
5.8	Health category Screen	18
5.9	Science category Screen	18
5.10	Sports category Screen	19
5.11	Technology category Screen	19
5.12	Search Screen	20
5.13	News article pop-up Screen	20
5.14	Detailed news in website	21
5.15	Login details of users in firebase	21
5.16	News API	22

## ***CHAPTER 1***

# **INTRODUCTION**

In today's fast-paced world, staying informed and connected is essential. With the rapid advancements in technology, people now expect instant access to news and updates on a variety of topics. To cater to this demand, we present NewsPlus, a cutting-edge news application designed to keep you up-to-date with the latest news from around the world. NewsPlus offers a range of powerful features that make it your gateway to real-time updates and reliable news. With the integration of the News API and Retrofit technology, this application delivers a seamless news browsing experience, ensuring that you have access to accurate and up-to-date information.

One of the key features of NewsPlus is its real-time updates. We understand the importance of timely information, and our application leverages the power of real-time updates to ensure that you receive the latest news as it happens. Whether it's breaking news, sports updates, technological advancements, health-related developments, or scientific breakthroughs, you can rely on NewsPlus to keep you informed with up-to-the-minute information. Our commitment to real-time updates means that you won't miss a single news story that matters to you.

NewsPlus also empowers you with an intelligent search functionality. Our robust search feature allows you to enter keywords or phrases and quickly access relevant articles. Whether you're looking for specific news related to sports, technology, health, or science, NewsPlus's search functionality ensures that you can easily find the information you need. We understand that everyone has unique interests, and by providing accurate search results, we aim to make your news browsing experience efficient and personalized.

To provide you with a comprehensive range of news articles, NewsPlus integrates the News API and utilizes Retrofit technology. The News API serves as a reliable and comprehensive source of news data, allowing us to fetch the latest articles from reputable sources worldwide. Retrofit facilitates efficient communication with the News API, ensuring quick retrieval and seamless integration of news data into the application. This combination of technologies ensures that you have access to a vast array of news articles from various sources, all in one place. To fetch news articles from reputable and trusted sources, Android Studio seamlessly integrates with news APIs. Developers can leverage Retrofit, a popular HTTP client library, to establish connections with news providers and retrieve accurate, up-to-date, and reliable news content. This integration ensures that the news application delivers high-quality

news articles, enhancing the credibility and trustworthiness of the app. Android Studio offers developers a wide range of optimization techniques to ensure the news application performs efficiently and delivers a seamless user experience. By employing best practices such as optimizing network requests, minimizing battery consumption, and implementing caching strategies, the application can provide users with fast and smooth news browsing, regardless of their device's capabilities.

### **1.1 Problem Statement**

The problem is that existing news applications lack certain features and suffer from issues such as outdated content, poor search functionality, intrusive advertisements, limited category options, and a lack of customization. Users face difficulties in accessing accurate and relevant news, discerning reliable sources, and obtaining a seamless and engaging news browsing experience. There is a need for a comprehensive news application that addresses these challenges by providing real-time updates, advanced search functionality, an ad-free option, a wide range of categories, localization options, and news from reputable sources. This application should prioritize accuracy, relevancy, and user experience to meet the evolving needs of news consumers in the digital age.

The "Newsplus" Android news application aims to provide users with up-to-date news articles from various sources. The application is connected to Firebase, which allows for real-time updates and seamless data synchronization across multiple devices. However, the current implementation of "Newsplus" faces certain challenges that hinder user experience and fail to maximize the potential benefits of Firebase integration. Therefore, the problem statement is defined as follows:

1. **Inconsistent Real-time Updates:** The "Newsplus" application lacks reliable and timely real-time updates of news articles. Users often experience delays in receiving the latest news content, which negatively impacts their experience and undermines the purpose of having a real-time news application. Consequently, there is a need to optimize the real-time update mechanism to ensure timely delivery of news articles to users.
2. **Inefficient Content Filtering and Personalization:** "Newsplus" lacks robust content filtering and personalization capabilities. Users often receive news articles that are not relevant to their interests or preferences, leading to a subpar user experience. Developing an effective mechanism to filter and personalize news content based on user preferences and browsing behavior is essential to improve engagement and user satisfaction.



3. **Incomplete Cross-Device Synchronization:** While Firebase integration facilitates synchronization across multiple devices, certain elements of "Newsplus" fail to synchronize consistently. For instance, the read/unread status of articles and saved preferences may not update accurately across different devices. Achieving seamless and reliable synchronization of all relevant user data across devices is crucial to provide a cohesive experience and ensure user engagement.
4. **Security and Privacy Concerns:** As "Newsplus" relies on Firebase for data storage and synchronization, there is a need to address security and privacy concerns adequately. Ensuring the confidentiality, integrity, and availability of user data, as well as complying with relevant data protection regulations, must be a priority to build trust with users and maintain a strong reputation.
5. In summary, the problem statement for the "Newsplus" Android news application is to enhance user experience and real-time updates by optimizing the real-time update mechanism, enabling offline access to news content, improving content filtering and personalization, achieving complete cross-device synchronization, and addressing security and privacy concerns related to Firebase integration.

## **1.2 Objectives of the project**

The main objective of the News reader android application are as follows :

- **Real-time Updates:** The application provides real-time updates on breaking news, trending stories and live events allowing users to stay informed about the latest happenings around the world.
- **Signing up:** By creating an account, you gain access to a range of features tailored to your preferences. Signing up is quick and hassle-free. Simply provide your email address, choose a secure password, and you're ready to go.
- **Logging in:** For our returning users, logging in is a breeze. Just enter your registered email address and password, and you'll be granted instant access to the news articles, and exclusive content.
- **Search Functionality:** The application includes a robust search functionality that allows users to search for specific news articles, topics, or keywords, making it easy to find the information they are looking for.
- **Ad-free option:** Some news reader apps offer an ad-free option for users who want an uninterrupted reading experience.

- Choose Country option: NewsPlus acknowledges that news preferences may vary depending on the country you reside in or wish to explore. We provide a "Choose Country" option that allows you to select your preferred country. By doing so, you can access news articles specifically tailored to that country.
- Categories: (sports, technology, health, science, entertainment) which helps the users to sort and read about specific category.

### **1.2.1 Provide a User-Friendly Interface:**

The app aims to offer a user-friendly interface to enhance the overall user experience. This involves designing intuitive layouts, easy navigation, and a visually appealing presentation of news articles. By prioritizing user-friendliness, the app seeks to make the news articles for users. The application should prioritize readability by utilizing clean typography, appropriate font sizes, and appropriate spacing. Well-structured articles with clear headings, paragraphs, and multimedia elements (such as images or videos) make the news content visually appealing and easily consumable. Attention to detail in the presentation of news articles contributes to a user-friendly experience.

### **1.2.2 Intuitive User Interface:**

Design a user interface that is intuitive, easy to navigate, and visually appealing. This objective ensures that users can quickly understand and interact with the application without confusion or frustration. A user-friendly news application incorporates a simple and intuitive navigation system that allows users to easily browse through different sections, categories, and articles. Clear menu structures, prominent search functionalities, and logical information hierarchies enable users to find the news content they are interested in without confusion or frustration.

### **1.2.3 Seamless Integration with Firebase:**

Firebase, a mobile and web application development platform, is integrated into the app to enhance its functionality. Firebase offers several services such as real-time database, user authentication, which are utilized to enable features like user login and secure storage of user data. This objective aims to leverage Firebase's capabilities to deliver a robust and reliable app. In conclusion, the news application's seamless integration with Firebase empowers users with real-time updates, personalized content, synchronized data, stability, and security.

## **CHAPTER 2**

# **REQUIREMENT SPECIFICATION**

To create an Android app, certain software and hardware requirements must be met. Here are the fundamental software requirements for Android app development.

### **2.1 Software requirements**

The software requirements for the News reader android application include the following:

#### **2.1.1 Android Studio**

The app is developed using Android Studio, an integrated development environment (IDE) for Android application development. The latest stable version of Android Studio should be installed to ensure compatibility and access to the latest features and updates.

#### **2.1.2 Java**

Java programming language is utilized for developing the app's backend logic. It is important to have a compatible Java Development Kit (JDK) installed on the development machine to compile and run the Java code.

#### **2.1.3 XML**

XML (Extensible Markup Language) is used for defining the app's user interface and layouts. Understanding XML syntax and Android's XML conventions is crucial for creating the app's visual components.

#### **2.1.4 Firebase**

Firebase, a mobile and web application development platform, is integrated into the app. This requires setting up a Firebase project and configuring relevant Firebase services such as Realtime Database, Authentication, and Cloud Storage. It is important to have a valid Firebase account and project credentials.

**2.1.5 Additional Software and Libraries:** Depending on the specific features and functionalities of the news application, you may need to integrate additional software and libraries, such as:

1. Retrofit: A popular HTTP client library for making API requests to fetch news data.
2. JSON parsing libraries: Libraries like Gson or Jackson for parsing JSON responses from

APIs. Libraries for handling images, networking, database operations, etc., based on your application requirements.

## 2.2 Hardware requirements

The hardware requirements for developing and running the News reader android application include the following:

1. **Computer:** A desktop or laptop computer capable of running Android Studio Operating System : Windows 7/8/10, macOS, or Linux.
2. **Processor:** Intel Core i5 or higher.
3. **RAM:** Minimum 8GB (16GB recommended).
4. **Storage:** Sufficient free disk space for Android Studio installation and project files.
5. **Display:** Minimum 1280x800 resolution.

### 2.2.1 Development Machine:

A computer with sufficient processing power, memory, and storage is required for smooth development. The machine should meet or exceed the minimum system requirements specified by Android Studio and Java Development Kit.

### 2.2.2 Mobile Device:

To test the app's functionality and user experience, a physical Android device or an Android emulator is needed. The device should meet the minimum Android version compatibility requirements specified by the app.

## 2.3 Functional requirements

The functional requirements describe the desired functionalities and features of the News reader android application:

1. **News Feed:** The application should present a personalized news feed that displays the latest news articles based on the user's selected preferences, such as categories or subscribed topics.
2. **Category and Topic Selection:** Users should be able to select their preferred news categories or topics of interest. The application should provide a variety of categories, such as sports, technology, health, science, entertainment, politics, and more.
3. **Search Functionality:** The application should have a robust search feature that allows users to search for specific news articles, topics, or keywords. The search results should be accurate and relevant, enabling users to quickly find the information they are looking

for.

4. **Login Page:** The login page serves as the entry point for existing users to access the news app. Users are presented with a form containing fields for email and password. Upon submitting the form, the app verifies the user's credentials using Firebase Authentication's "signInWithEmailAndPassword" method. If the credentials are valid, the user is authenticated, and they are redirected to the main news feed page.
5. **Sign-up Page:** The sign-up page in the news app allows new users to create an account by providing their email address and password. Additionally, they have the option to enter additional information such as their username or upload a profile picture. When the user submits the sign-up form, the app utilizes Firebase Authentication's "createUserWithEmailAndPassword" method to create a new user account using the provided email and password. This method securely registers the user's credentials with Firebase.
6. **Country Selection:** The application should provide a user-friendly interface that allows users to select their preferred country from a list.
7. **Detailed news articles:** In the news application, one of the key features is the ability to provide users with detailed news articles from external websites using an API. This feature enhances the user experience by offering comprehensive and in-depth coverage of news topics.

## 2.4 Mobile requirements

To ensure optimal performance and usability, a news application should meet certain mobile requirements. Here are some essential requirements for a news application:

1. **Platform Compatibility:** The news application is designed to work seamlessly on both Android and iOS platforms, ensuring a wide reach and consistent user experience across different devices.
2. **Responsive Design and Smooth Performance:** The application features a responsive design that adapts to various screen sizes and orientations, providing optimal readability and usability. With optimized performance, users can enjoy quick and smooth scrolling, and fast-loading articles for an enhanced news browsing experience.

## CHAPTER 3

# DESIGN OF THE APPLICATION

Design refers to the systematic process undertaken by an agent to develop specifications for a software artifact with the objective of achieving specific goals. This process involves utilizing a collection of basic components and adhering to certain limitations and restrictions. Design involves the application of diverse techniques and principles to define the structure and functionality of a device.

### 3.1 Data Flow Diagram

A data flow diagram (DFD) is a visual representation of how data moves within a system or process. It shows the flow of data from input to output through processes, data stores, and external entities. Processes are represented by circles or rectangles, indicating the actions performed on the data.

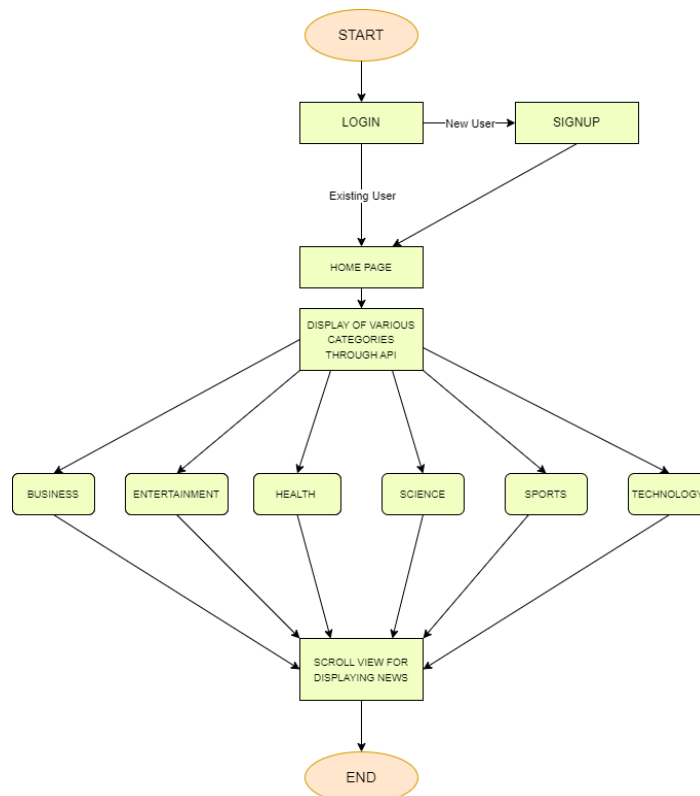


Figure 3.1 : Data Flow Diagram

The figure shows the Data flow diagram which illustrates how data moves through various components to provide users with the desired functionality.

***Start:***

- The process begins when the user launches the news application on their mobile device.

***Home Page:***

- Once the application is launched, the user is directed to the home page.
- The home page acts as the central hub for accessing different categories and news articles.
- It serves as an entry point for the user to explore the available news content.

***Display of Various Categories through API:***

- The API call retrieves information about the different categories, such as Business, Entertainment, Sports, Technology, Health, and Science.
- This data is used to dynamically generate the category options for the user to select from.

***Categories (Business, Entertainment, Sports, Technology, Health, Science):***

- Once the categories are fetched, the user can choose a specific category of interest.
- When the user selects a category, the application sends a request to the API to fetch news articles related to that category.
- The API responds with a list of news articles, each containing relevant information such as the headline, summary, and source.

***Scroll View for Displaying News:***

- The retrieved news articles are displayed within a scrollable view. That allows the user to vertically navigate through the list of articles within the selected category.
- Each article is presented as a preview, showing key details like the headline and source.

***End:***

- The user can choose to end the browsing session by either closing the application or navigating to another screen.
- If the user selects a specific article, they can be redirected to a detailed article view or any associated external sources.

## 3.2 Use Case Diagram

A use case diagram is a graphical representation that showcases how actors (users or external entities) interact with a system to achieve specific functionalities or goals. Actors are represented as stick figures, while use cases are depicted as ovals, and lines connect actors to use cases to indicate their involvement. It provides a visual overview of the system's functionality from a user's perspective and aids in communication and understanding between stakeholders.

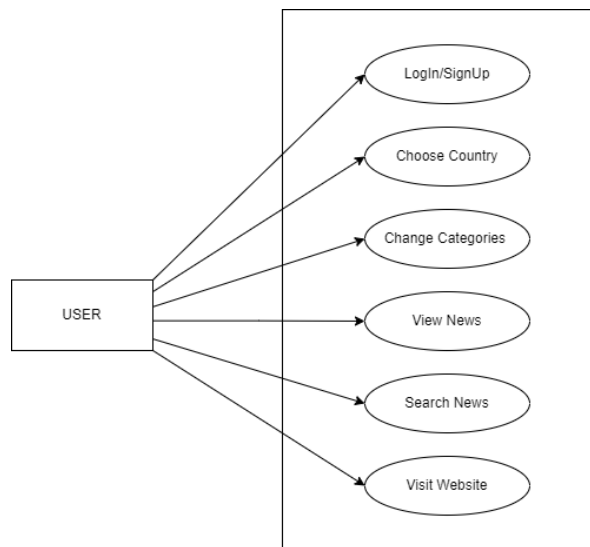


Figure 3.2: Use Case Diagram

The above Figure shows use case diagram which is a visual representation that depicts the interactions between users and a system, showcasing the various actions and functionalities that can be performed.

### ***Choose Country:***

- User selects a country to customize their news feed based on geographical preferences.

### ***Change Categories:***

- User selects one or multiple categories of interest to update the news feed.

### ***View News:***

- User can view news articles within selected categories or the customized news feed.

### ***Search News:***

- User can search for specific news articles or topics.

### ***Visit Website:***

- User can visit external websites associated with news articles for more information.



## CHAPTER 4

# IMPLEMENTATION

Implementation refers to a precise collection of activities intended to execute a predefined program or activity with known parameters. These implementation processes are purposeful and described with sufficient detail, allowing independent observers to identify and evaluate the presence and effectiveness of the specific activities related to the implementation.

### 4.1 Programming languages used

The News reader android application has been developed using primarily two programming languages: Java and XML.

**Java:** Java is a widely used programming language for Android app development due to its platform independence, object-oriented nature, and rich ecosystem of libraries and frameworks.

**XML:** XML (Extensible Markup Language) is used for designing the user interface layouts and storing configuration data.

Java provides a robust foundation for developing Android applications. It offers features such as memory management, exception handling, multithreading, and network connectivity. The object-oriented nature of Java enables modular and reusable code, making it easier to maintain and extend the application in the future.

### 4.2 Java Environment

The Java environment plays a crucial role in Android app development. To develop the News reader android application, a Java Development Kit (JDK) is required. The JDK includes the Java compiler, runtime environment, and various tools needed for development. The app is developed using the latest Java version compatible with the Android platform.

Additionally, Android Studio, an integrated development environment (IDE), is used to write, test, and debug the code. Android Studio provides a range of features, including code completion, debugging tools, and an emulator for testing the app on different devices.

### 4.3 About Android

Android Studio is the official integrated development environment (IDE) for Android app development. Built on JetBrains' IntelliJ IDEA software, it is specifically designed for Android development. Available for Windows, macOS, and Linux, it replaced Eclipse as the primary IDE for native Android app development. Android Studio was announced in May 2013 at the Google I/O conference and went through preview and beta stages before the stable version 1.0

was released in December 2014. It offers a wide range of features and tools to streamline the development process, including a layout editor, code analysis, debugging capabilities, and support for different Android versions and devices. Android Studio continues to evolve with regular updates and enhancements to support the latest Android platform developments.

#### **4.4 Android Architecture**

The architecture of the Android platform follows a layered structure, consisting of four main components: the Linux kernel, the libraries, the Android runtime, and the application framework. Understanding the Android architecture is essential for developing efficient and optimized applications.

- The Linux kernel forms the foundation of the Android operating system. It provides essential functionalities such as device drivers, memory management, and process management.
- The libraries consist of a wide range of pre-built modules that developers can leverage to enhance their applications. These libraries cover various domains, including graphics rendering, database management, networking, and security.
- The Android runtime includes the Dalvik Virtual Machine (DVM) or the newer Android Runtime (ART). These virtual machines execute the application's bytecode and manage memory and resources efficiently.
- The application framework provides high-level building blocks for creating Android applications. It includes components such as activities, services, content providers, and broadcast receivers, enabling developers to build interactive and responsive apps.

#### **4.5 Linux Kernel**

The Linux kernel forms the core of the Android operating system. It provides essential functionalities required for device drivers, memory management, process management, and security. The Linux kernel ensures hardware abstraction and enables the Android platform to run on a wide range of devices from various manufacturers.

The Linux kernel provides a stable and secure foundation for the Android platform, allowing efficient utilization of hardware resources and delivering a consistent user experience.

#### **4.6 Libraries**

The Android news reader application utilizes various libraries to enhance its functionality and streamline development. Some of the commonly used libraries in the app development process include:

- **Firestore Libraries:** Firestore provides a set of libraries for integrating cloud-based services into Android apps. The app can leverage Firestore Authentication for user login and registration, Firestore Realtime Database for real-time data synchronization, and Firestore Storage for storing media files.
- **Glide:** Glide is a powerful image loading and caching library for Android. It simplifies the process of loading images from various sources, such as URLs or local storage, and efficiently manages memory caching to ensure smooth image loading and scrolling within the app.
- **Retrofit:** Retrofit is a popular library for making network requests in Android apps. It simplifies the process of consuming RESTful APIs by providing a clean and intuitive interface for defining API endpoints, request parameters, and response handling.
- **Gson:** Gson is a library for converting JSON data to Java objects and vice versa. It simplifies the parsing and serialization of JSON data within the app, allowing seamless communication with server APIs or data storage.
- **ButterKnife:** ButterKnife is a view binding library that reduces the boilerplate code required for accessing and manipulating UI elements in Android activities and fragments. It simplifies the process of binding views and assigning event listeners, leading to cleaner and more maintainable code.

#### 4.7 Other implementations

- **Setting up the Development Environment:** Install and configure Android Studio, along with the necessary SDKs and tools, to create an Android application project.
- **UI Design:** Design the user interface (UI) of the news application using XML layout files. Utilize Android Studio's layout editor to create visually appealing screens, arrange UI elements, and define the overall app design.
- **Activity and Fragment Development:** Create activities and fragments to represent different screens and functionalities of the news application.
- **Data Integration:** Utilize APIs, RSS feeds, or web scraping techniques to fetch news data from external sources. Parse and process the retrieved data to extract relevant information such as headlines, summaries, images, and article content.
- **Networking:** Utilize Android's networking libraries like Retrofit to handle network requests and communicate with external APIs. Implement code to fetch news data, handle API responses

## CHAPTER 5

# RESULTS

The report containing screenshots of the results provides a visual representation of the findings and outcomes of the news application. These screenshots serve as visual evidence and enhance the clarity of the report by showcasing specific features, user interfaces, or data analysis. Screenshots can also be used to demonstrate specific metrics or data visualizations, such as user engagement statistics, click-through rates, or demographic information



Figure 5.1: Splash Screen

Figure 5.1 shows the splash screen of the news application captures the initial screen or loading screen that appears when the application is launched. It typically includes branding elements, such as the logo or name of the news application, and may also incorporate visual design elements that align with the application's theme or style. In the picture, you would see the splash screen prominently displayed, often with an engaging visual or graphical representation to create a positive first impression for users. The purpose of the splash screen is to provide a brief introduction or visual cue that signifies the application is loading and preparing to be fully functional. Including this picture in a report or documentation offers a visual reference for discussing the user experience and visual identity of the news application.



Figure 5.2: Login Screen

Figure 5.2 shows the login page which serves as the entry point for existing users to access the news app. Users are presented with a form containing fields for email and password. Upon submitting the form, the app verifies the user's credentials using Firebase Authentication's "signInWithEmailAndPassword" method.



Figure 5.3: Sign-Up Screen

Figure 5.3 shows the sign-up page in the news app allows new users to create an account by providing their email address and password. Additionally, they have the option to enter additional information such as their username or upload a profile picture.

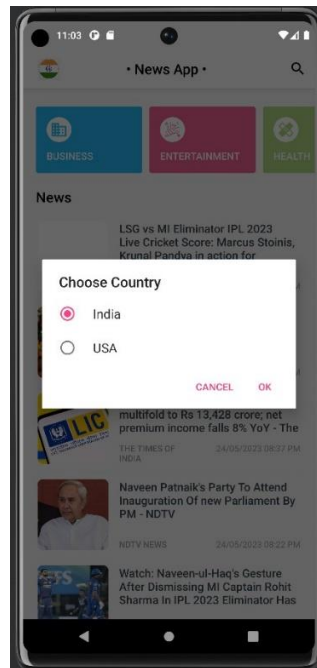


Figure 5.4: Choose Country screen

Figure 5.4 represents the "Choose Country" screen within the news application, where users have the option to select their desired country and can read the news of the selected country.

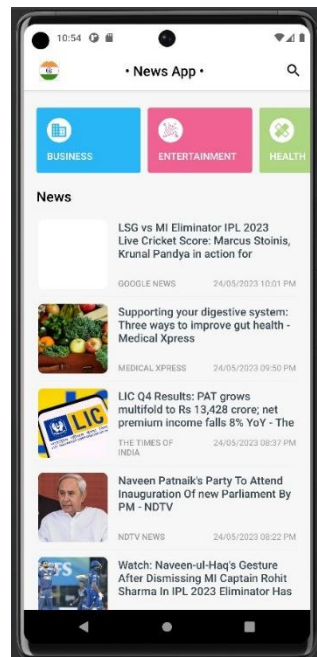


Figure 5.5: Home Screen

Figure 5.5 showcases the home page of the news application, which serves as the central hub for users to access news content and navigate through various sections or categories. In the picture, you can observe a well-organized and visually appealing user interface. The home page typically features a grid or list layout displaying news articles or headlines, accompanied by relevant images or icons.



Figure 5.6: Business category Screen

Figure 5.6 illustrates the "Business" category page within the news application, providing users with a dedicated section for news related to business topics. In the picture, you can observe a user interface that focuses on displaying news articles specifically curated for the business category.

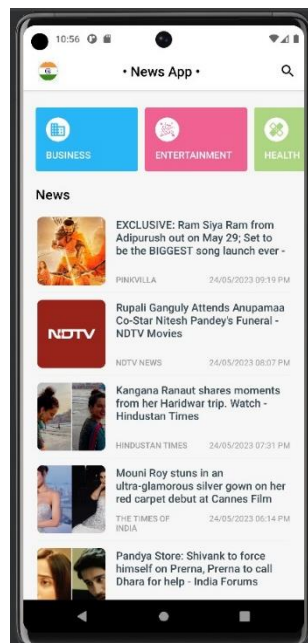


Figure 5.7: Entertainment category Screen

Figure 5.7 shows the entertainment category page offers users a centralized browsing experience for news stories on movies, music, celebrities, and events. Users can scroll, select articles, and access detailed information or read full articles for an enjoyable experience.

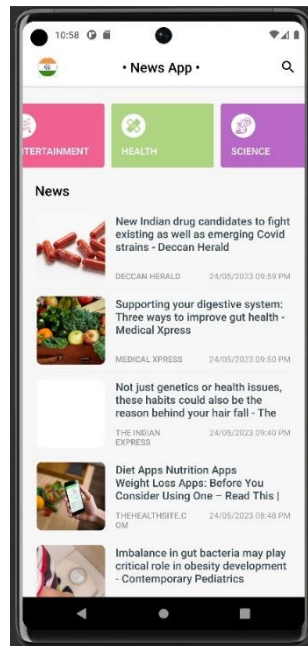


Figure 5.8: Health category Screen

Figure 5.8 shows health category page which provides users with a convenient and focused browsing experience for staying informed about health-related topics. Users can scroll through articles, access detailed information, and read full articles on medical breakthroughs, fitness tips, nutrition advice, and lifestyle updates

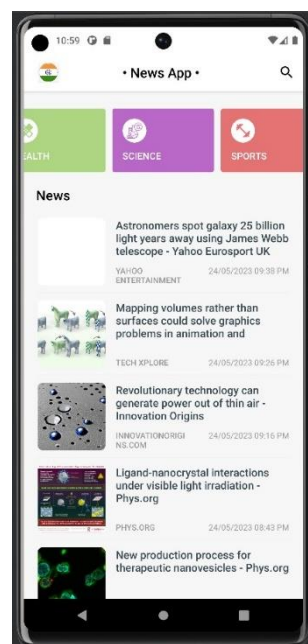


Figure 5.9: Science category Screen

Figure 5.9 shows the Science category page in the news application provides users with a centralized platform to stay updated on scientific advancements, discoveries, and space exploration. Users can scroll through articles, access detailed information, and read full articles on various scientific topics of interest.



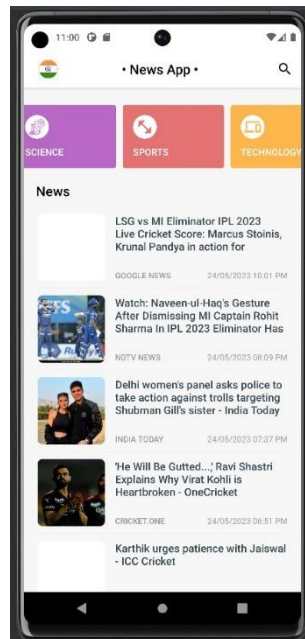


Figure 5.10: Sports category Screen

Figure 5.10 shows Sports category page in which the news application provides users with a centralized platform to stay updated on sports news, including teams, athletes, competitions, and major events. Users can scroll through articles, access detailed information, and read full articles on a variety of sports topics.

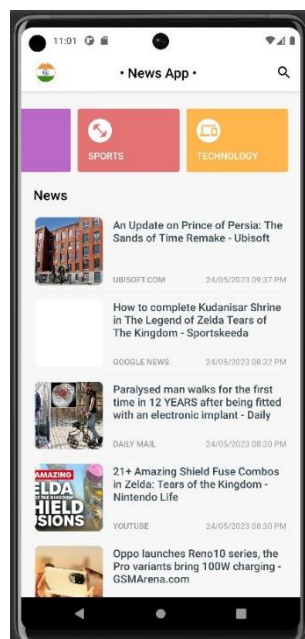


Figure 5.11: Technology category Screen

Figure 5.11 shows the technology category page in the news application offers users a centralized platform for staying informed about the latest advancements, gadgets, software, and tech trends. Users can scroll through articles, select items for more details, and read full articles on various technology-related topics.

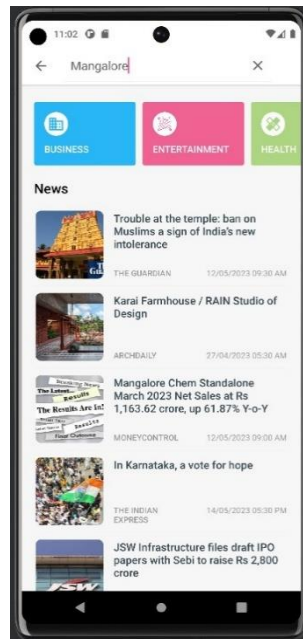


Figure 5.12: Search Screen

Figure 5.12 displays the search functionality in the news application, allowing users to search for specific news articles. Including this picture in a report or documentation visually demonstrates the app's ability to provide a convenient and efficient way for users to find news content based on their preferences or interests.

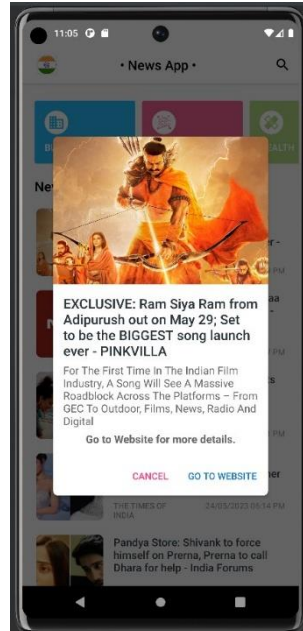


Figure 5.13: News article pop-up Screen

Figure 5.13 shows a popup window in the news app that offers users a link to a website for more details. This enhances the user experience by seamlessly connecting them to external sources, allowing them to explore complete news articles and gain additional information beyond the app.



Figure 5.14: Detailed news in website

Figure 5.14 shows a user in the news application clicking a link and seamlessly transitioning to an external website for more details. Including this picture visually demonstrates the app's capability to connect users with external sources, allowing them to access comprehensive information related to news articles.

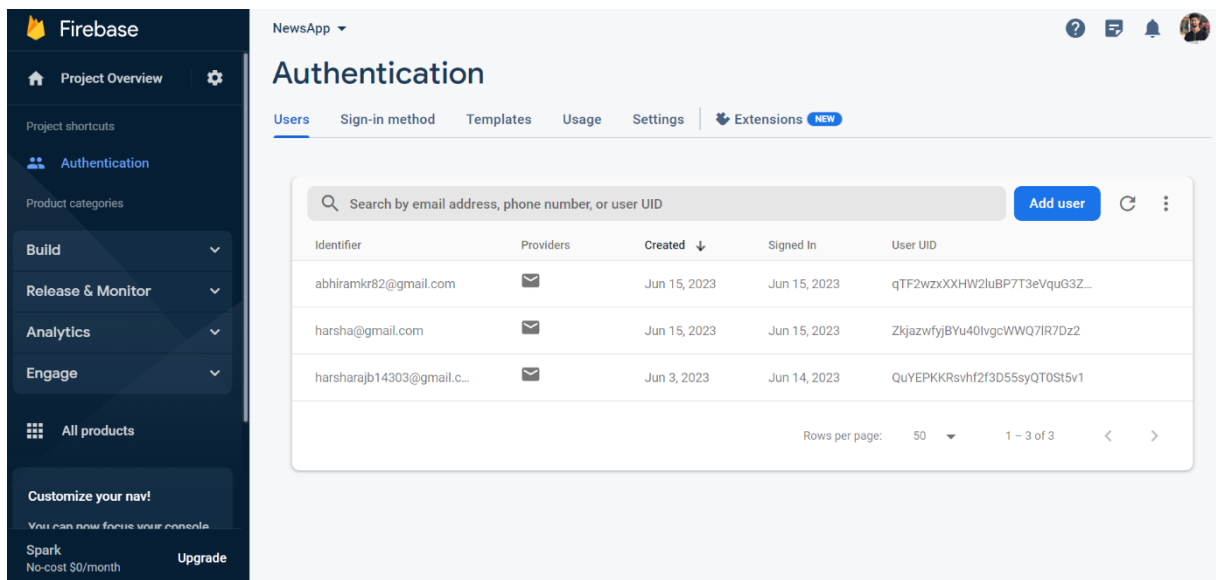
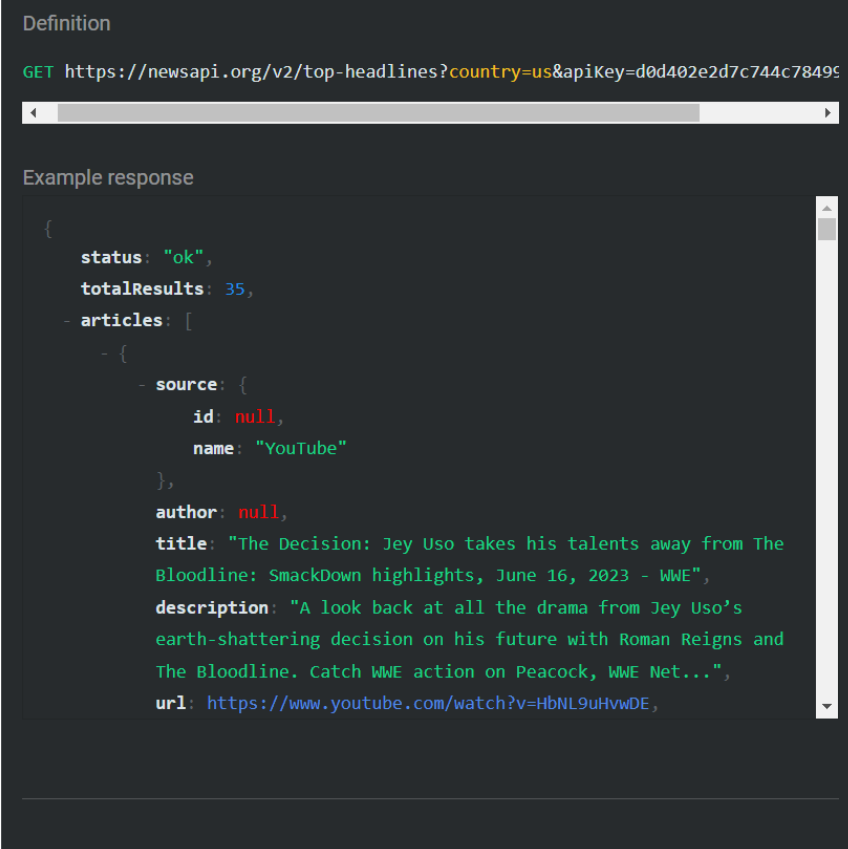


Figure 5.15: Login details of users in firebase

Figure 5.15 shows the logged-in user in Firebase, including the email and password, as well as the account created date and last sign-in date, typically presents a snapshot of the user's account details within the Firebase platform. In the picture, you would typically see the user's email address and password information, which are essential credentials used for authentication and

account access. Additionally, the picture may display the date and time the account was created, as well as the most recent sign-in date and time.



```
Definition
GET https://newsapi.org/v2/top-headlines?country=us&apiKey=d0d402e2d7c744c78495

Example response
{
  status: "ok",
  totalResults: 35,
  articles: [
    - {
      - source: {
        id: null,
        name: "YouTube"
      },
      author: null,
      title: "The Decision: Jey Uso takes his talents away from The Bloodline: SmackDown highlights, June 16, 2023 - WWE",
      description: "A look back at all the drama from Jey Uso's earth-shattering decision on his future with Roman Reigns and The Bloodline. Catch WWE action on Peacock, WWE Net...",
      url: https://www.youtube.com/watch?v=HbNL9uHvWDE,
```

Figure 5.16: News API

Figure 5.16 shows newsapi.org which is a reliable and popular external web service that we have seamlessly integrated into our news app project. Through this integration, our app is empowered with access to a vast and constantly updated database of news articles from diverse sources worldwide. By connecting to newsapi.org, we ensure that our users receive a comprehensive and up-to-date collection of news content, catering to their diverse interests and preferences. Leveraging the robust API provided by newsapi.org, we are able to deliver timely and relevant news updates directly to our users, enhancing their news browsing experience and keeping them informed about the latest developments across various topics and regions. This integration not only enriches our app's content but also allows us to leverage the advanced features and capabilities of newsapi.org, ensuring that our users have a seamless and comprehensive news experience at their fingertips.

## **CHAPTER 6**

### **CONCLUSION AND FUTURE WORK**

In conclusion, the proposed News Plus is a comprehensive news application that provides users with an immersive and personalized news reading experience. With a sleek and user-friendly interface, News Plus aims to deliver the latest and most relevant news from various trusted sources worldwide. The application offers a wide range of features to cater to diverse user preferences. Users can select their preferred country for news coverage, ensuring access to localized content.

Additionally, News Plus supports multiple languages, allowing users to read news in their preferred language for a more convenient and personalized experience. The app covers a wide array of news categories, including Business, Entertainment, Health, Science, Sports, and Technology. Users can effortlessly navigate through these categories and explore the latest news articles and updates in their areas of interest. The intuitive search functionality enables users to search for specific topics, ensuring easy access to relevant news content. News Plus goes beyond just delivering news articles; it also provides users with the option to access additional details by visiting the respective news website directly from the app. This feature ensures that users can explore more comprehensive coverage and dive deeper into the news stories they find intriguing. News Plus can focus on improving its features and functionality to offer a more comprehensive news reading experience. This can include Advanced Personalization, Bookmarking and Saved Articles, Social Media Integration, Real-time Notifications, Offline Reading and many other features. The choose country option provides users with the ability to select news from specific countries or regions. This feature is valuable for individuals who want to gain insights into international affairs or stay connected with news from their home country while being abroad. It promotes global awareness and helps users understand diverse perspectives on various issues. By combining search, category, and choose country options, the news application enhances user experience and delivers personalized news content.

## REFERENCE

- [1] H. Ding, X. Su, and Z. Xie, "Multi-models Dynamic Recommendation for Offline Clothing Sales," in Proceedings of the 2021 IEEE International Conference onJ. Beniger The control revolution: Technological and economic origins of the information society Harvard University Press 2009.
- [2] S. Sassi C. Verdier and A. Flory "Approche smantique multi-niveaux pour la représentation et le partage des informations dans la gestion de projet" International Conference on Information Systems and Economic Intelligence (SIIE'2009) pp. 301-312 2009.
- [3] IEEE Standard Computer Dictionary: A Compilation of IEEE Standard Computer Glossaries 610 ser. ANSI / IEEE Std. IEEE 1990.
- [4] [researchgate.net/publication/273158468\\_Development\\_of\\_an\\_Android\\_Application\\_](https://www.researchgate.net/publication/273158468_Development_of_an_Android_Application)
- [5] Referred youtube video <https://youtu.be/O5Oy1226LX4>

