

PROJECT DOCUMENTATION

Date	16 November 2023
Team ID	Team - 591023
Project Title	News Headline App - NewsNow
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Objective - Create an Android application designed to fetch and showcase up-to-date news headlines sourced from the internet. The goal is to offer users an intuitive and dynamic platform for staying informed about current events, fostering accessibility and interaction with the latest news.

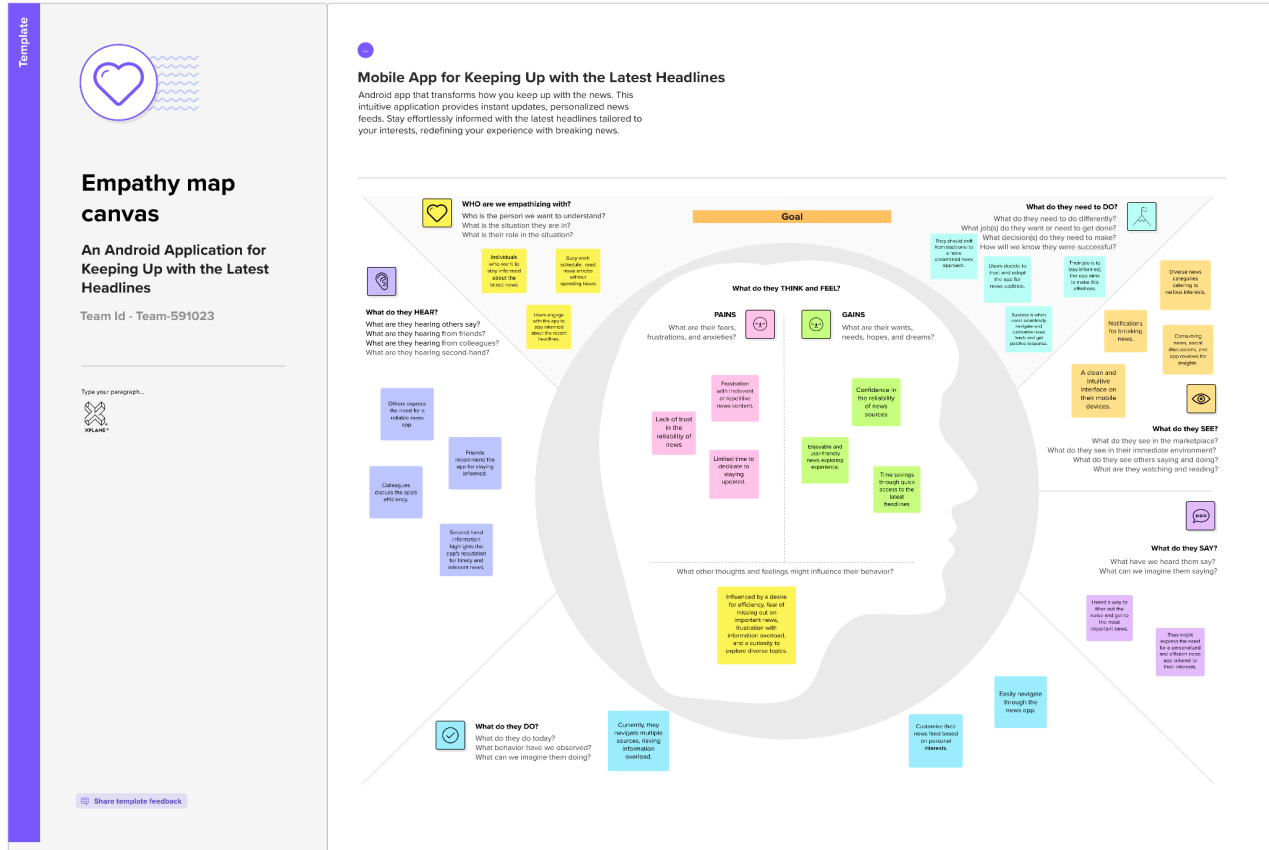
Prerequisites - The app is using public News API provided by [NewsAPI](#)

To make the app work, please sign up to get a news API Key. Then place it in the local.properties file with name **API_KEY**.

E.g. API_KEY="123ddffaac245e553e6bcd05"

IDEATION & PROPOSED SOLUTION

Empathy Map - [LINK](#)





Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

TEAM ID - Team 591023

1

Define your problem statement

Create a user-friendly mobile app providing real-time updates on news, entertainment, sports, and tech from reputable sources. Ensure seamless navigation, personalized content recommendations, and interactive features. Address the rising demand for a reliable, easily accessible platform to stay informed in a fast-paced digital landscape.

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP
You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!



3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

30 minutes

TIP
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mind.



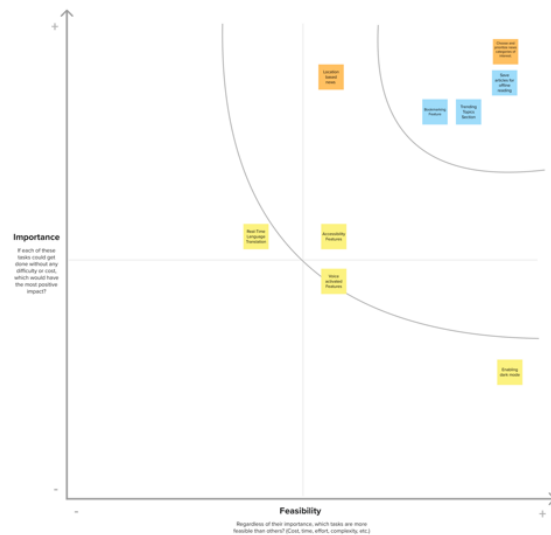
4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

TIP
Participants can use their cursor to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer (holding the M key on the keyboard).

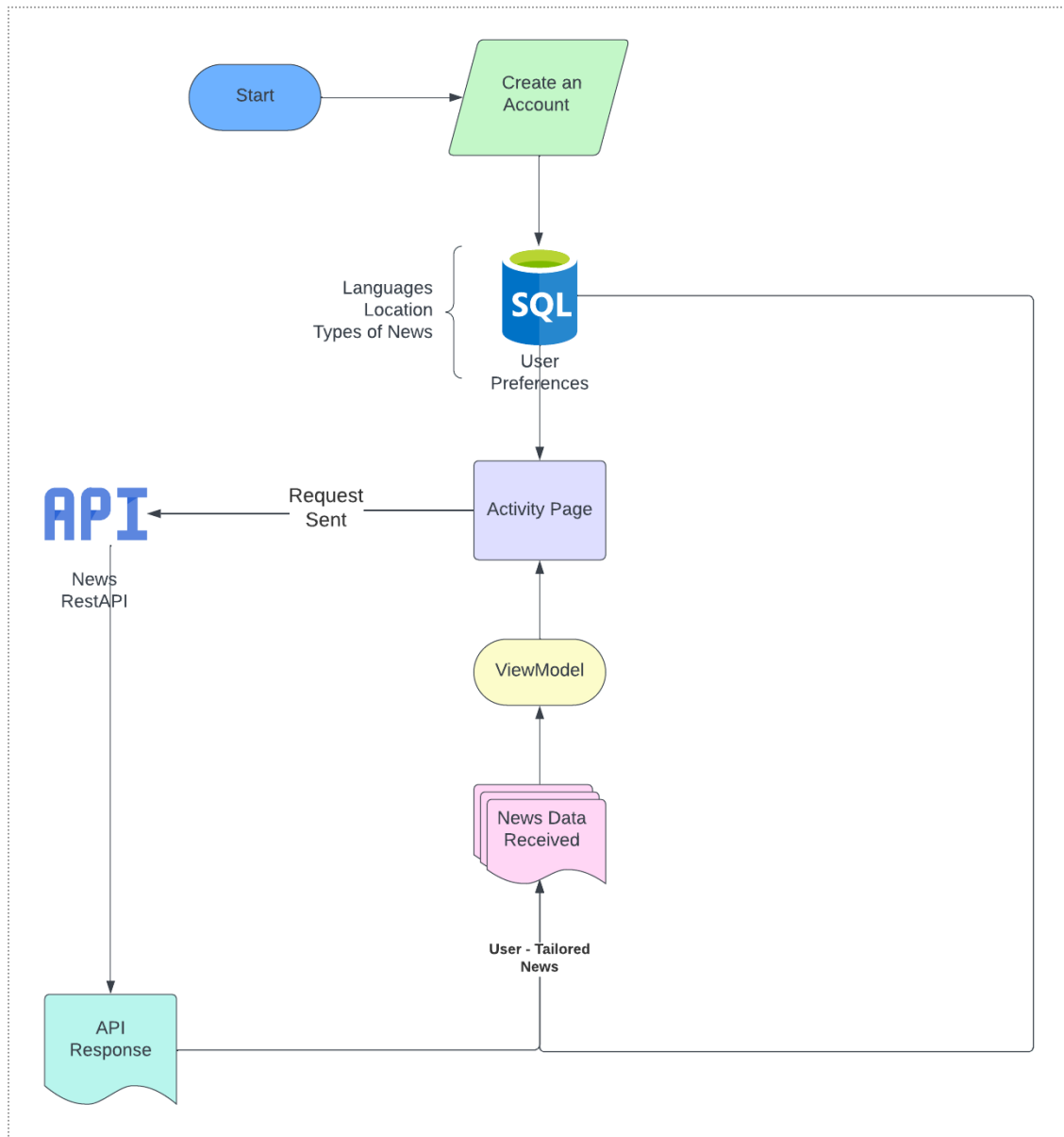


SOLUTION ARCHITECTURE -

Clean Architecture (MVVM + MVI)

- ❖ User Interaction :
 - Initiated through Jetpack Compose UI.
- ❖ View :
 - Reacts to user actions and communicates with the ViewModel.
- ❖ ViewModel :
 - Manages user actions and orchestrates communication with the Model.
- ❖ Model:
 - Handles data operations: API requests, response processing, and temporary storage.
- ❖ Data Flow :
 - Processed data from the Model is sent back to the ViewModel.
 - ViewModel updates the UI with the processed information.
- ❖ Authentication and Cloud Services :
 - Utilizes Firebase for authentication and other cloud services.
- ❖ Personalization :
 - Tailors news content based on user preferences, enhancing the user experience.
- ❖ Local Storage :
 - Uses MySQL for local storage of user preferences, prioritizing privacy.
- ❖ Benefits :
 - Separation of concerns for a modular and maintainable codebase.
 - MVVM facilitates organized data-related logic.

Data Flow Diagram -



Technology Stack/Architecture

Table - 1: Components & Technologies

S.No	Component	Description	Technology
1.	User Interface Design	Process of creating a visually appealing user friendly interface	Figma
2.	User Interface Development	Coding and implementation of designed user interface.	Jetpack Compose
3.	Application Logic - 1	Developing the Application	Language - Kotlin Toolkit - JC Design Pattern - MVVM
4.	Application Logic - 2	To manage dependencies	Dagger Hilt/Koin
5.	Application Logic - 3	Handling asynchronous tasks	Coroutines
6.	Cloud Database	Storing user login credentials	Firebase Realtime Database, Firestore
7.	API Client	To manage API calls within App	Retrofit
8.	External API	Fetching News Headline	NewsAPI, Bing News Search API
9.	Cloud Services - 1	Login, Storage based API	GCP (Google Cloud Platform)
10.	Cloud Services - 2	News API	Azure

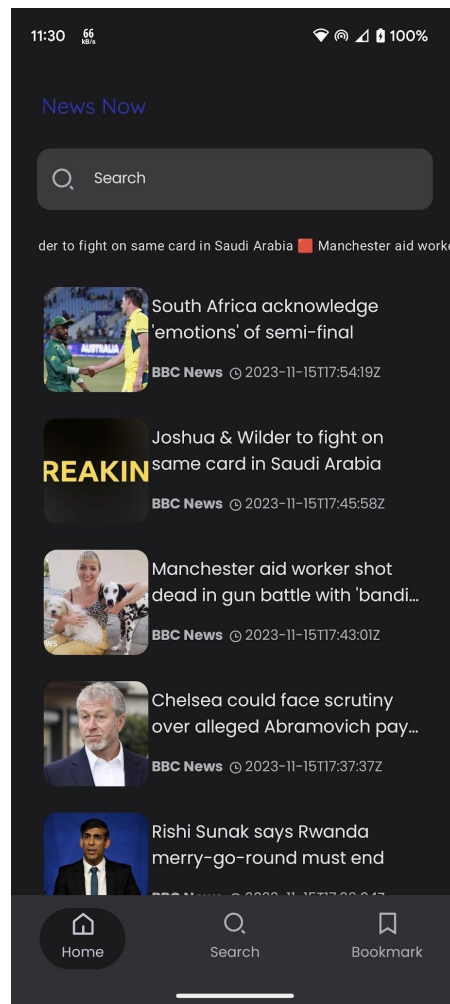
Table - 2: Application Characteristics:

S.No	Component	Description	Technology
1.	Open-Source Framework	Using an Open Source UI toolkit / framework to develop front end of mobile application	Jetpack Compose
2.	Security Implementations	N/A	N/A
3.	Scalable Architecture	Scalability issues can be resolved using cloud services	Google Cloud Platform
4	Availability	We can increase the availability using cloud management and various online distribution softwares	Google Cloud Platform, Google Play Store
5	Performance	Using cloud based services, to increase the app's scalability and reliability	GCP (Monitoring Cache), Jetpack Compose

FEATURES -

1. **Intuitive Material3 Design:** Creating a user friendly interface with Material3 design. Providing a light and dark theme option based on system preference.
2. **Dynamic Color Themes:** App theme dynamically changes according to the device wallpaper (Android 13 or above).
3. **Latest News from Top APIs:** Premium APIs allow access to the latest news.
4. **Automatic Stream Fetching:** Getting real time news updates with the help of automatic stream fetching, reducing the need for manual refresh.
5. **Customized Search Functionality:** Allowing the users to find their specific news articles based on their interest.
6. **Bookmarking Feature:** Save and organize favorite news articles for convenient reading later.

APP DESIGN





Welcome to NewsNow

The only platform to access all the latest news at your fingertips.



Next



Explore Latest News Topics

Discover a wide range of news articles tailored to your interests.



Back

Next



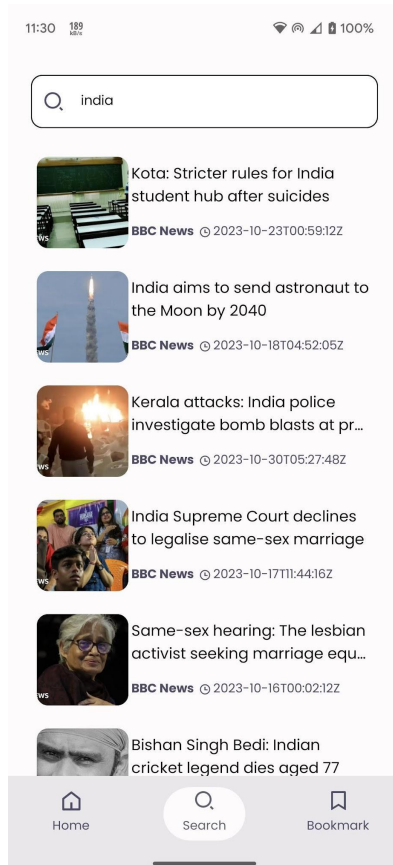
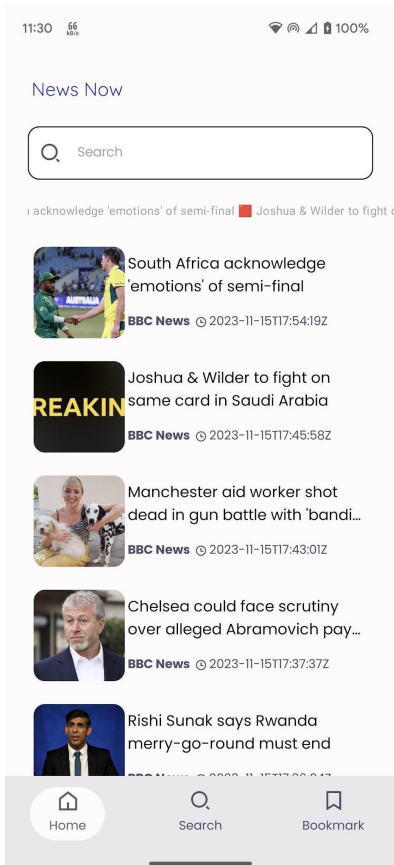
News Bookmarking Made Easy

Easily save and organize your favorite news articles for convenient reading later.



Back

Get Started

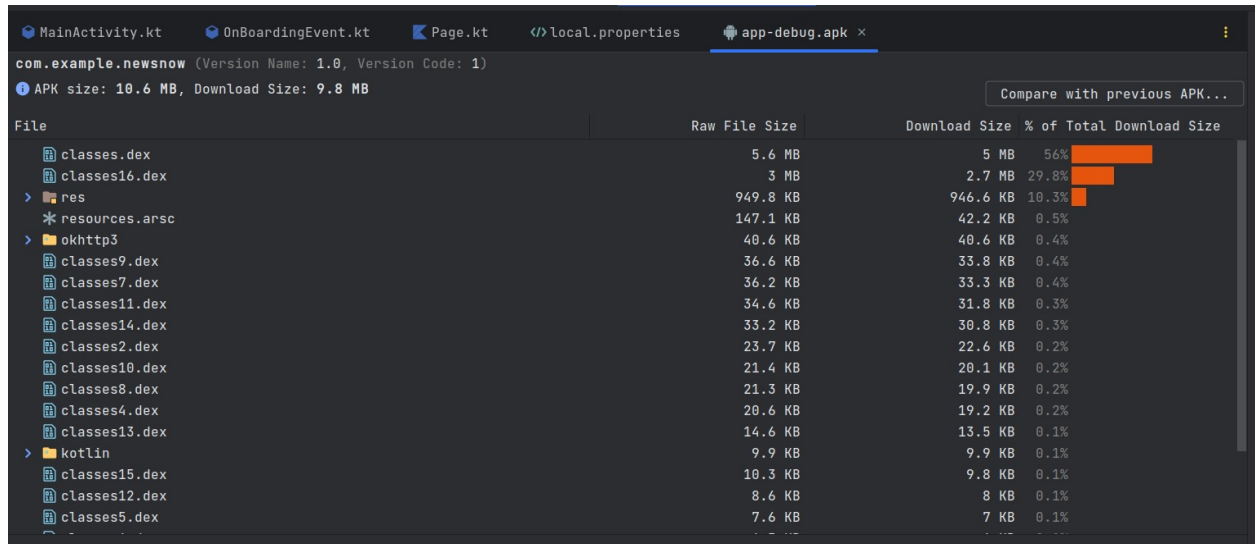


PERFORMANCE METRICS

App Size -

APK Size -> 10.6MB

Download Size 9.8MB



The screenshot shows the Android Studio interface with the 'app-debug.apk' file selected. The top bar displays the project name 'com.example.newsnow' and its version details. Below this, a summary line states 'APK size: 10.6 MB, Download Size: 9.8 MB'. A table provides a detailed breakdown of the APK's components, including their raw file sizes, download sizes, and their percentage of the total download size. A 'Compare with previous APK...' button is also visible.

File	Raw File Size	Download Size	% of Total Download Size
classes.dex	5.6 MB	5 MB	56%
classes16.dex	3 MB	2.7 MB	29.8%
res	949.8 KB	946.6 KB	10.3%
resources.arsc	147.1 KB	42.2 KB	0.5%
okhttp3	40.6 KB	40.6 KB	0.4%
classes9.dex	36.6 KB	33.8 KB	0.4%
classes7.dex	36.2 KB	33.3 KB	0.4%
classes11.dex	34.6 KB	31.8 KB	0.3%
classes14.dex	33.2 KB	30.8 KB	0.3%
classes2.dex	23.7 KB	22.6 KB	0.2%
classes10.dex	21.4 KB	20.1 KB	0.2%
classes8.dex	21.3 KB	19.9 KB	0.2%
classes4.dex	20.6 KB	19.2 KB	0.2%
classes13.dex	14.6 KB	13.5 KB	0.1%
kotlin	9.9 KB	9.9 KB	0.1%
classes15.dex	10.3 KB	9.8 KB	0.1%
classes12.dex	8.6 KB	8 KB	0.1%
classes5.dex	7.6 KB	7 KB	0.1%

Installation/Launch Time -> 709 ms (approx for standard devices)

