

Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	27 October 2023
Team ID	Team - 590941
Project Name	News Nest An Android Application For Keeping Up With The Latest Headlines
Maximum Marks	4 Marks

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Technical Architecture:

Technical architecture encompasses the fundamental structure and design of a software system, outlining its key components, their interactions, and the underlying framework that enables its functionality. This includes hardware infrastructure, software modules, databases, networking protocols, and interfaces. It also addresses critical considerations such as data storage, scalability, security measures, and compliance with industry standards. The architecture dictates how the system handles increasing loads and ensures optimal performance. It encompasses deployment strategies, whether on-premises or on cloud platforms, as well as procedures for error handling, recovery, and backups. Integration with external services and APIs is also specified, enabling seamless interaction with third-party applications. Furthermore, it delineates development, testing, staging, and production environments, ensuring consistency across different stages of the software development life cycle. Monitoring and logging mechanisms are put in place to track system behaviour, performance metrics, and errors. Maintenance procedures and strategies for upgrades are defined to keep the system up-to-date and efficient. Documentation is crucial, providing insights into architectural decisions and best practices, facilitating knowledge transfer among team members and aiding in troubleshooting. In essence, technical architecture serves as the foundational blueprint for the construction and maintenance of a robust and effective software system.

The Deliverable shall include the architectural diagram as below and the information as per the Table1 & Table 2

Architectural Diagram

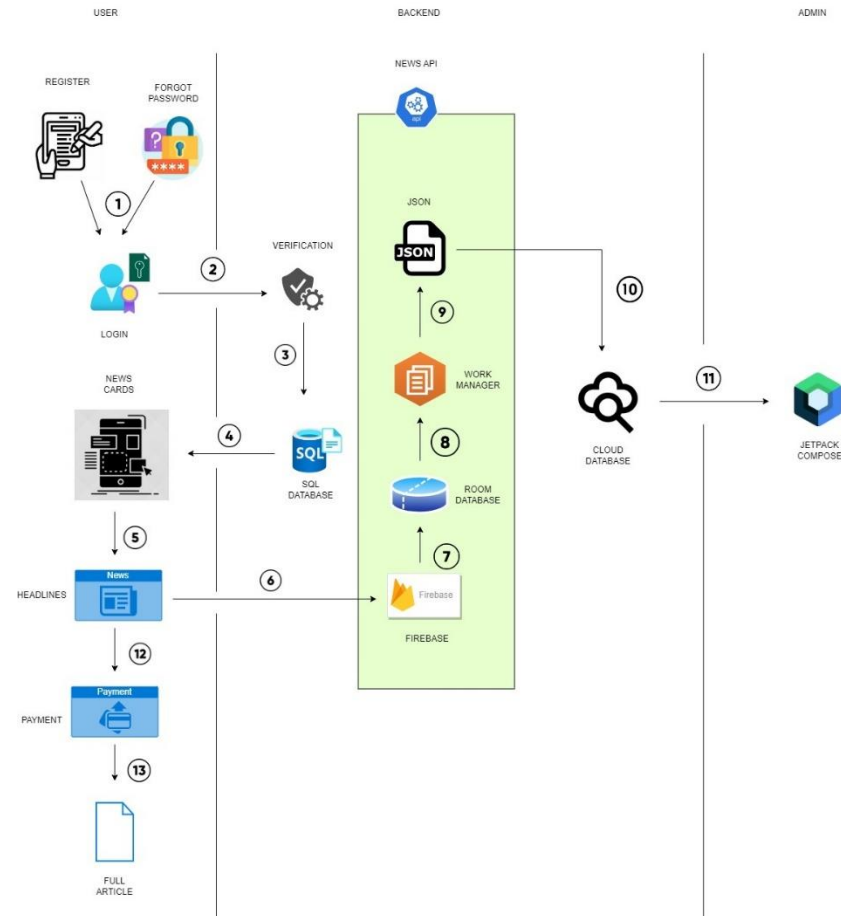


Table-1
Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface Design	Create a modern User Interface with Jetpack Compose & XML	XML & Jetpack Compose
2.	User Experience	Optimize the app's User Interface	Jetpack Compose Animations
3.	Application Logic - 1	Registration Process	MVIMKotlin, Firebase
4.	Application Logic - 2	Login Process	MVIMKotlin, Firebase
5.	Application Logic - 3	Account Retrieval	MVIMKotlin, Firebase
6.	Application Logic - 4	Payment Process	MVIMKotlin
7.	Database	Data Type, Configurations etc.	SQLite
8.	Cloud Database	Database Service on Cloud	NEWSAPI CLOUD
9.	File Storage	App Data or Assets that aren't been retrieved from Cloud Database	Other Storage Service or Local Filesystem
10.	External API - 1	Fetches NEWS ARTICLES FROM CLOUD DB	NEWSAPI
11.	Testing and Debugging	Test and debug the app.	Android Studio Tools
12.	Infrastructure Server	For LIVE and latest news articles.	Local Storage, NEWSAPI
13.	Documentation	Document code and app structure.	GitHub

Table-2
Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	MVIMKotlin, Jetpack Compose
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	SQLite Database, Firebase security rules and authentication
3.	Push Notifications	Realtime alert for latest headlines.	MVIMKotlin
4.	Scalable Architecture	Ability to handle growing user count and news articles.	NEWSAPI, Firebase
5.	Availability	Ensures uninterrupted service with load balancing, distributed servers, and automatic failover.	NEWSAPI, SQLite Database
6.	Performance	Ensures the app is accessible at all times and achieved through distributed servers.	NEWSAPI, MVIMKotlin
7	Testing and Debugging	Ensure app stability and resolve issues.	Android Studio Tools
8.	Offline Access	Use the app without an internet connection.	SQLite, Local Storage
9.	LIVE and Latest Headlines	Ensure the app provides LIVE and latest headlines.	NEWSAPI, MVIMKotlin