# Firebase

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# Cloud Firestore

- Cloud Firestore is a flexible, scalable database for mobile, web, and server development from Firebase and Google Cloud.
- Like Firebase Realtime Database, it keeps your data in sync across client apps through realtime listeners and offers offline support for mobile and web so you can build responsive apps that work regardless of network latency or Internet connectivity.
- Following Cloud Firestore's NoSQL data model, you store data in documents that contain fields mapping to values. These documents are stored in collections, which are containers for your documents that you can use to organize your data and build queries.

# Cloud Firestore vs Realtime Database

- **Cloud Firestore:** is Firebase's newest database for mobile app development. It builds on the successes of the Realtime Database with a new, more intuitive data model. Cloud Firestore also features richer, faster queries and scales further than the Realtime Database.
- **Realtime Database:** is Firebase's original database. It's an efficient, low-latency solution for mobile apps that require synced states across clients in realtime.

# Cloud Firestore vs Realtime Database

| | Realtime Database | Cloud Firestore |
|---|---|---|
| **Data Model** | Stores data as one large JSON tree. | Stores data as collections of documents. |
| **Offline** | Offline support for iOS and Android clients. | Offline support for iOS, Android, and web clients. |
| **Querying** | Deep queries with limited sorting and filtering functionality. | Indexed queries with compound sorting and filtering. |
| **Performance** | regional solution. | regional and multi-region solution that scales automatically. |
| **Scalability** | requires sharding. | automatic. |

# Cloud Firestore Capabilities

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| Flexibility | The Cloud Firestore data model supports flexible, hierarchical data structures. Store your data in documents, organized into collections. Documents can contain complex nested objects in addition to subcollections. |
| Expressive querying | In Cloud Firestore, you can use queries to retrieve individual, specific documents or to retrieve all the documents in a collection that match your query parameters. Your queries can include multiple, chained filters and combine filtering and sorting. They're also indexed by default, so query performance is proportional to the size of your result set, not your data set. |
| Realtime updates | Like Realtime Database, Cloud Firestore uses data synchronization to update data on any connected device. However, it's also designed to make simple, one-time fetch queries efficiently. |

# Cloud Firestore Capabilities

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|---|---|
| Offline support | Cloud Firestore caches data that your app is actively using, so the app can write, read, listen to, and query data even if the device is offline. When the device comes back online, Cloud Firestore synchronizes any local changes back to Cloud Firestore. |
| Designed to scale | Cloud Firestore brings you the best of Google Cloud's powerful infrastructure: automatic multi-region data replication, strong consistency guarantees, atomic batch operations, and real transaction support. We've designed Cloud Firestore to handle the toughest database workloads from the world's biggest apps. |

# Getting Started

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|---|---|---|
| 1 | Integrate the Cloud Firestore SDKs | Quickly include clients via Gradle, CocoaPods, or a script include. |
| 2 | Secure your data | Use Cloud Firestore Security Rules or Identity and Access Management (IAM) to secure your data for mobile/web and server development, respectively. |
| 3 | Add Data | Create documents and collections in your database. |
| 4 | Get Data | Create queries or use realtime listeners to retrieve data from the database. |

# Demo

# Resources

- https://www.educative.io/edpresso/what-is-firebase
- https://en.wikipedia.org/wiki/Firebase
- https://firebase.google.com
- https://firebase.google.com/docs/reference/rest/database#section-post

# Thanks