



Firestore

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What is Firestore?

It's a part of Firebase, which is a suite of Google Cloud services

Other important Firebase services include:

- Auth
- Storage
- Functions
- Analytics
- Messaging



Build better apps



Auth



Hosting



Cloud Functions



ML Kit



Cloud Firestore



Realtime Database



Cloud Storage



Improve app quality



Crashlytics



Performance Monitoring



Test Lab



Grow your app



Analytics



Remote Config



Predictions



A/B Testing



Cloud Messaging



Dynamic Links

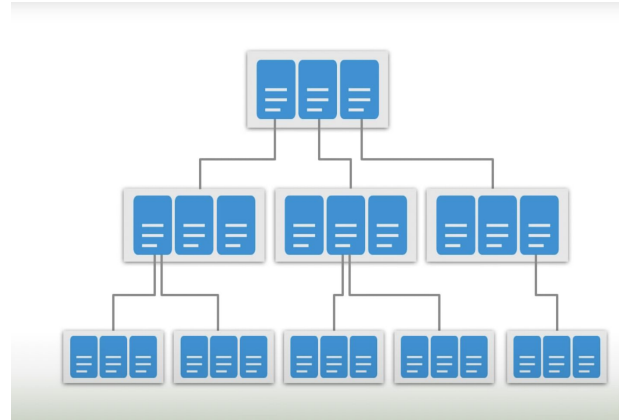


In-app Messaging

NoSQL vs Relational databases

Firestore is a NoSQL database:

- Data stored as documents rather than table entries
- The database is constructed of one or more collections
- Each collection can contain one or more documents
- Documents can contain sub-collections





Document

A Firestore document:

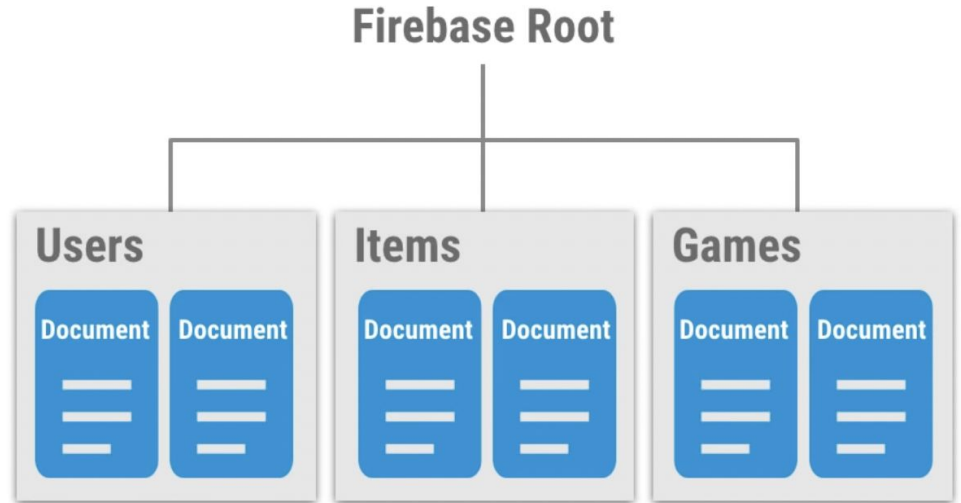
- Is basically a set of **fields** and **values**
- Each field is accessed using a string **key**
- The values can be from a range of common data types (strings, booleans, integers, floats, lists, maps, etc.)
- There is a limit to the max size for a document (**1 MiB**)

Document

```
bird_type: "swallow"  
airspeed: 42.733  
coconut_capacity: 0.62  
isNative: false  
icon: <binary data>  
vector:  
  {x: 36.4255,  
   y: 25.1442,  
   z: 18.8816}  
distances_traveled:  
  [42, 39, 12, 42]
```

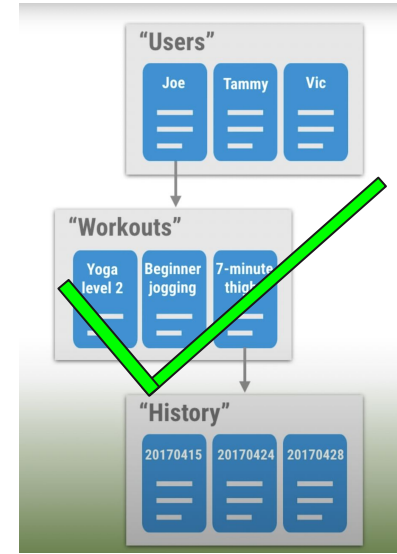
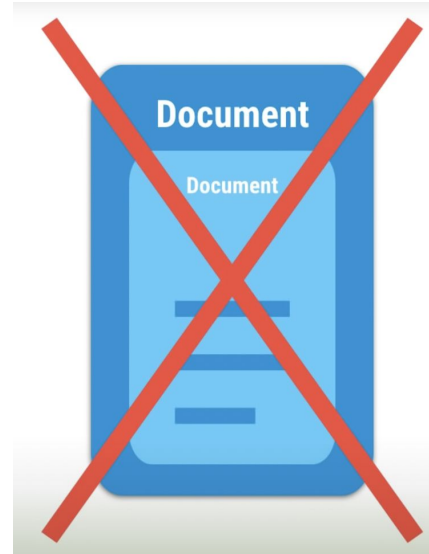
Collections

- Collections contain a number of documents
- The documents under a collection do not need to follow the same structure (i.e. have the same fields)



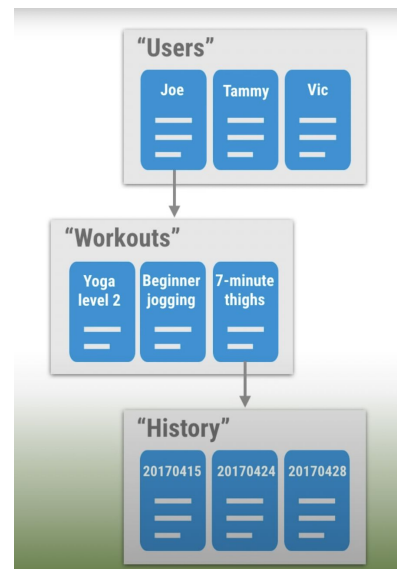
Nesting documents

- Documents cannot contain other documents within themselves (but they can contain the id of the other document in one of their fields)
- Documents can though have sub-collections within them that contain other child documents



Accessing documents

- Each document has a specific unique ID (at least unique within the enclosing collection)
- We access documents by specifying the path from the database root
- For example, to access the first document in “History” we use:
`"Users/Joe/7-minute thighs/History/20170415"`





Other Firestore features

- **Offline persistence**
Data is cached in the device and can be accessed while offline
- **Realtime updates**
reflected while the app is open
- **Paginated queries**
Get a range of documents from a large collection