SQLite vs Firebase

**Firebase Advantages**

### **1) Real-time Database Helps to Store and Synchronize Data**

The cloud-hosted NoSQL database is offered by Firebase real-time database that helps you store and synchronize data between the clients. This indeed makes it easier for the developers to access the data using any of the devices and helps developing collaborative feature.

Another advantage of a real-time database for the developers is that they do not need the support of backend to build apps as it comes with SDKs for various platforms, including Android, iOS and Web.

It assists in the execution of backend code responding to events activated by databases. Furthermore, it is optimized for offline use too.

### **2) Fast and Secured Web Hosting**

The benefit of Firebase Hosting allows you to set-up a single-page, a mobile landing page, web page or progressive web page with ease. It also helps to deliver the content rapidly anywhere.

The developers can deploy the web apps as well as static content at CDN (Content Delivery Network).

The Firebase hosting also automatically configures the free SSN certificate for custom domains. You can now deploy a local directory to the web with just a single command.

### **3) Firebase Authentication**

Nowadays, most of the apps have the login facility and the developer aims to simplify and secure it better. Therefore, the support of Firebase Authentication is there to do that task with an easy sign-in process.

It also provides identity solution for the emails, passwords and other important apps such as Facebook, Twitter or Instagram. The Firebase UI is also flexible, customized and drop-in dealing with the UI flow of the users. There is no compromise from the security point of view.

### **4) Firebase Allows the Content Storage with Ease**

It has become much easier to store the user-dedicated content that includes texts, images and videos. In fact, you can also develop the final phase of your app from prototype effortlessly using advanced technology.

The Firebase team has also provided SDK for cloud storage to link-up the mobile for users that aren’t online. As such they can continue to automatically transfer as soon as connectivity is established.

## Firebase Disadvantages

### **1) Firebase Real-time Database limitations**

For the most part, you will use Real-time Database as your main storage, which has its cons. One of the main problems with it, is limited querying capabilities. Real-time database provides no way to filter capabilities, because the whole DB is a huge JSON file, which makes it pretty difficult to make complex queries.

Another point to consider also relates to Firebase Real-time DB and its data modeling. Because of “database as a single file” structure, you can’t implement relations between data items.

### **2) Vendor lock-in**

The problem with the vendor lock-in doesn’t correlate with Firebase as a platform. In most cases, that is the problem with using BaaS solutions in general. However, as long as Firebase doesn’t provide any migration tools to transfer your data to another platform that can be considered a con.

# **SQLite Advantages**

SQLite is a very popular database which has been successfully used with on disk file format for desktop applications like version control systems, financial analysis tools, media cataloging and editing suites, CAD packages, record keeping programs etc.

There are a lot of advantages to use SQLite as an application file format:

### **1) Lightweight**

* SQLite is a very light weighted database so, it is easy to use it as an embedded software with devices like televisions, Mobile phones, cameras, home electronic devices, etc.

### **2) Better Performance**

* Reading and writing operations are very fast for SQLite database. It is almost 35% faster than File system.
* It only loads the data which is needed, rather than reading the entire file and hold it in memory.
* If you edit small parts, it only overwrite the parts of the file which was changed.

### **3) No Installation Needed**

* SQLite is very easy to learn. You don’t need to install and configure it. Just download SQLite libraries in your computer and it is ready for creating the database.

### **4) Reliable**

* It updates your content continuously so, little or no work is lost in a case of power failure or crash.
* SQLite is less bugs prone rather than custom written file I/O codes.
* SQLite queries are smaller than equivalent procedural codes so, chances of bugs are minimal.

### **5) Portable**

* SQLite is portable across all 32-bit and 64-bit operating systems and big- and little-endian architectures.
* Multiple processes can be attached with same application file and can read and write without interfering each other.
* It can be used with all programming languages without any compatibility issue.

### **6) Accessible**

* SQLite database is accessible through a wide variety of third-party tools.
* SQLite database's content is more likely to be recoverable if it has been lost. Data lives longer than code.

### **7) Reduce Cost and Complexity**

* It reduces application cost because content can be accessed and updated using concise SQL queries instead of lengthy and error-prone procedural queries.
* SQLite can be easily extended in in future releases just by adding new tables and/or columns. It also preserve the backwards compatibility.

## SQLite Disadvantages

1. SQLite is used to handle low to medium traffic HTTP requests.
2. Database size is restricted to 2GB in most cases.