CouchDB

CouchDB is a document database system which was first released in 2005 by Damien Katz while working at IBM, and it was later developed as an Apache Software Foundation project. The most recent stable release of CouchDB is version 3.3.1, which was released on January 2023.

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USE CASES AND ADVANTAGES

Content Management Systems
- can store and manage content
- e.g. blog post, articles, multimedia

Mobile and Web Applications
- good for backend database
- synching features allows it to be used for offline mobile apps

IoT and Sensor Data
- suitable for storing and managing large volumes of time-series data from IoT devices or sensors

E-commerce and Online Marketplaces
- product information and customer can be stored and accessed in real-time

System Requirements
- Android
- BSD
- Linux
- OS X
- Solaris
- Windows

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Example Code Snippet

This code uses the nano package to interact with a CouchDB database running on http://localhost:5984. It inserts a document into the my_db database, retrieves a document by its ID, and queries the database using a view named my_view defined in a design document named my_design_doc.

```
1    const nano = require('nano')('http://localhost:5984');
2
3    // Create a new database
4    nano.db.create('my_database').then((body) => {
5      console.log('Database created!');
6    }).catch((err) => {
7      console.error(err);
8    });
9
10   // Insert a document into the database
11   const myDatabase = nano.db.use('my_database');
12   myDatabase.insert({ name: 'John', age: 30 }).then((body) => {
13     console.log(body);
14   }).catch((err) => {
15     console.error(err);
16   });
17
18   // Retrieve a document from the database
19   myDatabase.get('my_document_id').then((body) => {
20     console.log(body);
21   }).catch((err) => {
22     console.error(err);
23   });
```

https://github.com/apache/couchdb-nano

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Key Weakness

❖ Compared to its competitors the failover procedure (switching the normal systems operations from a primary database to a standby database) is slower for the CouchDB database. It can take some time to switch to the next master for data storage functions.

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Direct Competitors

❖ **MongoDB**

❖ **Redis** redis

❖ **CouchBase**

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Software That Uses CouchDB

❖ Used by CERN as the Data Management System at the Large Hadron Collider.

❖ IBM's cloud services.

❖ United Airlines in-flight entertainment systems.