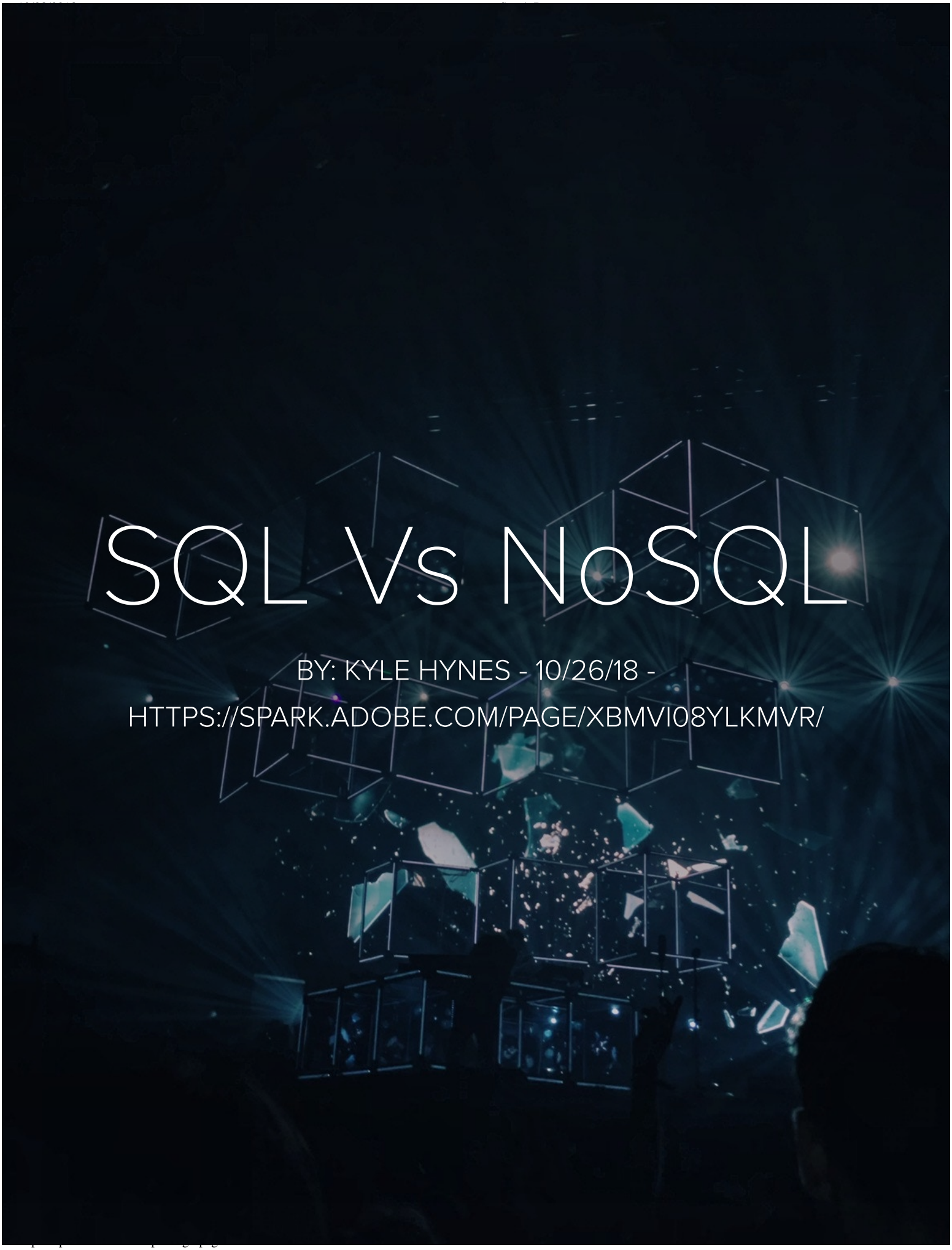
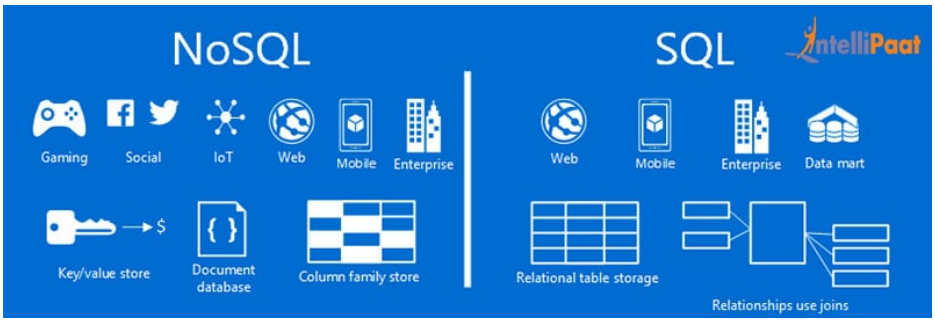


SQL Vs NoSQL

BY: KYLE HYNES - 10/26/18 -

HTTPS://SPARK.ADOBE.COM/PAGE/XBMVI08YLKMVR/



NoSQL vs. SQL – What is Better? [Digital image]. (2018, June 2). Retrieved October 26, 2018, from https://intellipaat.com/blog/nosql-vs-sql-what-is-better/

SQL (relational databases), which is the most widely familiar type of database since its inception in the 70's (official release was in 1986). It was designed to be able to handle A LOT of information quickly, and efficiently. As time progressed, and as technology adapted, certain demands were sought after that the SQL model had but wasn't efficient, which ultimately led to the birth of NoSQL. Unlike SQL, which stores and retrieves its data through the use of tables, NoSQL does this with documents, key-value pairs, graph databases, or wide-column stores.

This means that SQL databases represent data in form of tables which consists of n number of rows of data whereas NoSQL databases are the collection of key-value pair, documents, graph databases or wide-

column stores which do not have standard schema definitions which it needs to adhere to (Isaac, 2014). What this all boils down to is implementation. SQL is great for handling complex queries, while also increasing machine speed through a single server by upgrading hardware. Whereas NoSQL performs better through hierarchical data storage over SQL, and database power, speed, and efficiency, can easily be upgraded by the addition of more servers.

Finley, K. (2011, January 2). How Twitter Uses NoSQL [Digital image]. Retrieved October 26, 2018, from https://readwrite.com/2011/01/02/how-twitter-uses-nosql/

Features that Twitter may implement NoSQL for...

People Search: NoSQL is primarily used by Twitter for their analytics, so their people search feature would use this to quickly search through the data containing user's information used for searching.

Add user to list: Very similar to the people search, this could use NoSQL in the same way, by quickly locating the sought-after user's information and adding them to your personal list.

Download all tweets: This is yet another efficient way that NoSQL can locate and process a large amount of data quickly and effectively.

Considering that Twitter has optimized their analytics and search features to cater to the power of NoSQL there aren't too many down sides at this level, but where you could see cons would be if you had to locate certain data within these searches by using filters. Using filters could increase the complexity of the queries called which NoSQL isn't well known for compared to SQL.

Facebook brand [Digital image]. (n.d.). Retrieved October 28, 2018, from https://en.facebookbrand.com/assets

Features that Facebook may implement SQL for...

Events: Facebook's events page contains a lot of information from numerous tables. The complex queries required to handle the information contained within the events feature of Facebook are almost only suitable for SQL.

What-is-NoSQL1 [Digital image]. (2014, October 13). Retrieved October 28, 2018, from https://www.algoworks.com/blog/nosql-database/

Types of NoSql Databases:

Key-Value: Every single item in the database is stored as an attribute name (or “key”)

Wide Column Store: optimized for queries over large datasets, and store columns of data together, instead of rows.

Document Store: Pair each key with a complex data structure called a document.

Graph Store: Store information about networks (such as social connections)

Five NoSQL Databases:

Redis: Open Source, Key-Value type, used to cache data for websites, used by Twitter, Snapchat, Github, and many more

Cassandra: Open Source, Wide Column Store, used to store large amounts of data across servers, used for purchases, orders, weather apps, etc.

CouchDB: Open Source, Document Store, uses JSON documents and scalable architecture to make websites easier to use, used by Hothead games, Grub Hub, and many others.

Neo4j: Graph Store, used a lot with artificial intelligence and fraud detection, used by Walmart, Adidas, and Ebay.

InfiniteGraph: Graph Store, used for large scale graph processing, implemented in Java

Gonzales, C. (n.d.). Aero – Weather App for iPhone [Digital image]. Retrieved October 28, 2018, from http://toolsandtoys.net/aero-weather-iphone/

NoSQL databases that could be used with the “Aero” app above:

Cassandra: There is a lot of data evolving around weather, and databases such as Cassandra are optimized to handle a workload such as this.

Neo4j: Given that the app uses a lot of elements to determine what information to present to the user, it would be safe to assume that highly intellectual databases such as Neo4j are used to quickly link lots of data in order to accurately present requested data to user.

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