Assignment 2

Due on 2023-01-05, 09:00 EST

1. What is a key-value database? How does it differ from a traditional relational database? 

2. How is a key-value database usually used in a distributed system? What are some common use cases? 

3. What are some advantages and disadvantages of using a key-value database? How do they compare to using a traditional relational database? 

4. How do key-value databases handle data consistency in a distributed environment? Provide an example. 

5. What is a Bloom filter and how is it used in key-value databases? How does it differ from a hash table? 

6. What are some common challenges in building and maintaining key-value databases? How do these challenges differ from those in relational databases? 

7. How do key-value databases support transactions? Provide an example. 

8. How do key-value databases handle data replication and fault tolerance? Describe a strategy. 

9. What are some limitations of key-value databases? How do these limitations affect their use cases? 