

Lab 8 (Lab 4 -Part 1)

Working with Indexes

1. Create an index on the "name" field of the collection that stores TV shows.
2. Retrieve the execution plan for a query that filters shows by their "status" field.
3. Explain the execution plan for the query from Task 2 and identify the index used, if any.
4. Drop the index created in Task 1.
5. Create a compound index on the "genres" and "premiered" fields.
6. Retrieve the execution plan for a query that filters shows by their "genres" and sorts them by "premiered" in descending order.
7. Explain the execution plan for the query from Task 6 and identify the compound index used, if any.
8. Drop the compound index created in Task 5.
9. Create a unique index on the "url" field to ensure the uniqueness of URLs for TV shows.
10. Insert a new show into the collection, ensuring that its "url" field does not conflict with existing shows.
11. Attempt to insert another show with the same "url" as an existing show and observe the error generated by the unique index.
12. Remove the unique index created in Task 9.
13. Create a text index on the "summary" field for full-text search capabilities.
14. Perform a text search query that finds shows containing the word "dome" in their summaries.
15. Retrieve the execution plan for the text search query from Task 14 and identify the text index used, if any.
16. Drop the text index created in Task 13.
17. Create a TTL (Time-To-Live) index on the "updated" field of the TV shows collection, with an expiration time of 30 days.
18. Insert a new TV show into the collection and set the "updated" field to the current date.
19. Verify that the TTL index is working correctly by checking if the inserted show is automatically removed from the collection after 30 days.
20. Update the "updated" field of an existing show to extend its expiration time by 15 more days.
21. Confirm that the show's expiration time is updated accordingly and it remains in the collection.
22. Insert another TV show without specifying the "updated" field and observe if it is assigned the default expiration time of 30 days.
23. Remove the TTL index from the collection.
24. Insert a new show and set the "updated" field to a future date.
25. Confirm that the show is not automatically removed from the collection since there is no TTL index in place.
26. Create a new TTL index on the "premiered" field with an expiration time of 90 days.
27. Insert a show with a "premiered" date that is within the next 90 days.
28. Verify that the show is automatically removed from the collection after the specified expiration time.
29. Update the "premiered" field of a show to a date that falls outside the expiration window.
30. Confirm that the updated show remains in the collection since its new "premiered" date exceeds the TTL index's expiration time.
31. Drop the TTL index on the "premiered" field.
32. Insert a new show and check if it remains in the collection indefinitely, irrespective of its "premiered" date.