



Chapter 5: Conclusion

Final Exam: Question 1

Problem:

Scenario

Consider the following information about the operations on a system:

Write Operations

Details of Write Operations								
ID	Description	Type	Durability	Data Life	Data Size (bytes)	Storage Size (per day)	Average Frequency (writes/sec)	Peak Frequency (writes/sec)
W1	employee inserts new items or updates existing items in the catalog	insert or update	w: majority	forever	500	250 MB	6	12
W2	user creates an account	insert	w: majority	forever	500	35.7 MB	1	3
W3	user adds a review to an item	insert	w: 1	5 years	1000	547 MB	7	14
W4	application records time and user info when an item is viewed	insert	w: 0	5 years	100	2.7 GB	317	8000
W5	user creates a shopping cart	insert	w: majority	5 years	2000	2.7 GB	16	40
W6	user adds item to cart	insert	w: majority	1 month	500	2.7 GB	32	100

- **ID** - A unique value to identify each operation.
- **Description** - A summary of the action occurring in the application that triggers this operation.
- **Type** - Additional information about whether this operation is an insert operation or an update operation.
- **Durability** - The number of nodes that must write the data to the database for the operation to be considered complete.
- **Data Life** - The amount of time this record will be stored in the database.
- **Data Size** - The number of bytes being written to the database.

- **Storage Size** - The amount of additional storage needed per day to store all new write data for this operation.
- **Average Frequency** - The average number of times this operation occurs per second.
- **Peak Frequency** - The average number of times this operation occurs per second at peak hour frequency.

## Read operations

Details of Read Operations							
ID	Description	Type	Max Latency	Execution Time	Single Doc Size (bytes)	Average Frequency (reads/sec)	Peak Frequency (reads/sec)
R1	user logs into the application	real-time	5ms		1000	64	80
R2	user views a specific item	real-time	1ms		1000	317	8000
R3	user views a specific store	real-time	50ms		1000	3	10
R4	user views their cart	real-time	20ms		2000	31	100
R5	data scientist runs analytics	analytics		60 secs		< 1	

- **ID** - A unique value to identify each operation.
- **Description** - A summary of the action occurring in the application that triggers this operation.
- **Type** - Additional information about whether this operation is a real-time operation or an analytics operation.
- **Max Latency** - The maximum acceptable amount of time for the application to wait to receive data from the database.
- **Execution Time** - The average amount of time the operation takes to complete. This is only filled in if the amount of time is longer than 1 second.
- **Single Doc Size** - The average size of the document being retrieved.
- **Average Frequency** - The average number of times this operation occurs per second.
- **Peak Frequency** - The average number of times this operation occurs per second at peak hour frequency.

Which of the following operations is the one that should be considered most prominently when designing our schema?

Attempts Remaining: **Correct Answer**   

Choose the best answer:

- ☐ W4 - application records time and user info when an item is viewed.

☐ W6 - user adds item to cart.

☐ R1 - user logs into the application.

☒ R2 - user views a specific item.

☐ R4 - user views their cart.

Correct!

[See detailed answer](#)

[Proceed to next section](#)

**Assignment is Due**

**05d:02hr:42m**

07 sty, 17:00 UTC

**Your Grade**

**PASS/FAIL**

Submitted