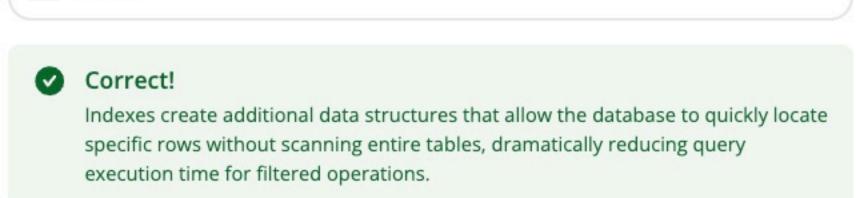


number of rows scanned.





Ques	stion 3 of 15	P
	v do delivery systems efficiently aggregate inve tiple warehouse locations?	entory across
1	Sum quantities from nearby warehouses	•

3 Pick random warehouse inventory

Average all warehouse quantities

4 Use only the largest warehouse

# n Incorrect

Incorrect.

Delivery systems query inventory from all warehouses within delivery range and sum the quantities to show total available items to customers, providing accurate availability without restricting to a single location.

# Travel time estimation services provide more accurate delivery zones than simple distance calculations.



Correct!

Travel time services account for real-world factors like traffic, road conditions, and geographic barriers, providing more accurate delivery feasibility than

straight-line distance calculations that ignore these constraints.

Questi	ion	5	of 1

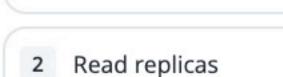
# Which technique is MOST effective for preventing concurrent resource allocation conflicts?

- 1 Cache warming
- 2 Load balancing
- 3 Horizontal scaling
- 4 Atomic transactions

#### **6** Commont

Correct!

Atomic transactions ensure that resource checks and allocations happen as an indivisible unit, preventing race conditions where multiple processes might allocate the same resource simultaneously.





Write-ahead logging





# Correct!

Write-ahead logging improves write durability and recovery but doesn't enhance read performance. Read replicas, caching, and indexes all directly improve read operations.

uestion / of 15	
Which algorithm accounts for Earth's curvature when	
alculating geographic distances?	

- 1 Binary search

Haversine formula

Manhattan distance

- 4 Euclidean distance
- **6** Common

Correct!

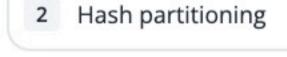
The Haversine formula calculates great-circle distances between two points on a sphere, accounting for Earth's curvature, while Euclidean distance assumes a flat plane.

1	True	

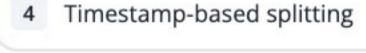


calls (like travel time estimation).

Ques	tion 9 of 15	
-	stem serves location-based queries across continents. ch partitioning strategy works best?	
1	Geographic sharding	









Correct!

Geographic sharding colocates related data by region, ensuring location-based queries typically access only local partitions rather than scanning globally distributed data.

Asynchronous read replicas can exhibit replication lag tha	t
affects data consistency	

Ouestion 10 of 15





Correct! Asynchronous replication introduces delays between writes to the primary database and their propagation to read replicas, meaning replicas may serve stale data until synchronization completes.

Wha	tion 11 of 15 It happens when cached inventory data becomes stale r concurrent orders?	
1	Overselling inventory	

- 2 Reduced latency
  - 3 Better scalability
  - 4 Improved performance

# **6** Common

Correct!

Stale cached inventory data can show items as available when they've actually been ordered, leading to overselling situations where more items are sold than actually exist.

estion 12 of 15
hich isolation level BEST prevents phantom reads in
ncurrent transactions?

- Read Committed
- - Repeatable Read

Serializable

- Read Uncommitted

Correct! Serializable isolation provides the highest level of isolation, preventing phantom reads by ensuring transactions appear to execute in serial order, eliminating all concurrency anomalies.

Question 15 of 15
When calculating delivery zones, which approach minimizes
expensive distance calculations?

- Real-time calculation
- - 2 Database sorting
  - 3 Linear scanning
    - 4 Pre-computed radius filtering

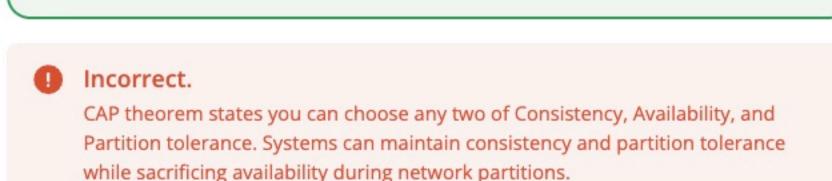


Correct!

Pre-computed radius filtering uses cheap distance approximations to eliminate obviously distant candidates before performing expensive precise calculations, reducing computational overhead.

tolei	rance per CAP theorem.	
1	True	

False



1	of the following reduce external service calls EXCEPT:	P
1	Result caching	
2	Local pre-filtering	
3	Batch processing	8
4	Synchronous calls	0
0	Incorrect.  Synchronous calls don't reduce the number of external service calls - they determine how calls are made. Local pre-filtering, caching, and batching all reduce the total number of external calls needed.	