answer — 39.1

1605023

"The average throughput of system-A = (99+1)/2 = 50 tps and for system-B = (50+50)/2 = 50 tps" — justify it for the workload with an equal mixture of the two types T_1 and T_2 of transactions.

Solution

Here, for system-A, throughput of T_1 = 99 tps
throughput of T_2 = 1 tps

for system-B, throughput of T_1 = 50 tps
throughput of T_2 = 50 tps

For the given scenario, time-wise average throughput does not truly reflect the throughput of a system. Instead, task-wise average throughput serves as the actual reflection of the system's throughput. It can be computed using harmonic mean.

Hence,

average throughput of system-A = $\frac{2}{\frac{1}{99}+\frac{1}{1}}$ = 1.98 tps

average throughput of system-B = $\frac{2}{\frac{1}{50}+\frac{1}{50}}$ = 50 tps

Ans.

answer – 39.2

a. Why do TPC-H queries emphasize on aggregation?

b. Why does TPC-H prohibit materialized view?

Solution

(a) TPC-H benchmark suite is entirely dedicated for working with big data analytics in data warehouses. And, aggregation queries are the main operation in big data analytics. Hence, TPC-H queries emphasize on aggregation.

(b) Materialized view serves as the concise representation of fact table for particular query in data warehouse OLAP. Due to its reduced size, materialized view can be brought into memory and we can run in-memory operation on it. Further access to disk is not required during the operation. But, the target of a data warehouse is to work on big data with proper scalability. Hence, TPC-H prohibits usage of materialized views.

Ans.