

100 Technical Interview Questions with Answers

Q1. What are the 4 pillars of OOP?

Ans: Encapsulation, Abstraction, Inheritance, Polymorphism.

Q2. Difference between Overloading and Overriding?

Ans: Overloading → same method name, different parameters (compile time). Overriding → child class redefines parent method (runtime).

Q3. How does HashMap work internally?

Ans: Stores data in key-value pairs using hashing. Uses hashCode() to find bucket. Collisions handled with LinkedList/Tree.

Q4. Time complexity of HashMap operations?

Ans: Average $O(1)$, Worst $O(n)$.

Q5. Difference between Stack and Queue?

Ans: Stack → LIFO. Queue → FIFO.

Q6. Write SQL query to find 2nd highest salary.

Ans: `SELECT MAX(salary) FROM employees WHERE salary < (SELECT MAX(salary) FROM employees);`

Q7. Difference between Primary Key and Foreign Key?

Ans: Primary Key → unique & not null. Foreign Key → refers to Primary Key of another table.

Q8. Difference between process and thread?

Ans: Process → independent execution unit. Thread → lightweight sub-unit of a process.

Q9. What is Deadlock?

Ans: Situation where processes wait forever. Conditions: Mutual exclusion, Hold & wait, No preemption, Circular wait.

Q10. Difference between TCP and UDP?

Ans: TCP → reliable, connection-oriented. UDP → faster, no guarantee.

