**SQL Interview Question Bank**

**Fresher Academy**

**Updated: 01/08/2017**

**DATABASE**

1. What is outer join, left join, inner join?

* Full outer join: Return all records from two tables.
* Right outer join: Preserves the unmatched rows from first table (right), joining with Null rows in the shape of the second table (left).
* Left outer join: Preserves the unmatched rows from first table (left), joining with Null rows in the shape of the second table (right).

1. What is index? When you should use index?

* Data structure created in DB for finding data more quickly and efficiently.

1. What is transaction? Why do you use transaction?

* A unit of work, performed against DB.
* Two main purposes:
  + Allow correct recovery from failures and keep DB consistent even in cases of system failure.
  + Provide isolation btw programs accessing DB concurrently.

1. What is ACID?

* Four main features of transaction: Atomicity, Consistency, Isolation, Durability.
* Atomicity: Ensures that the entire sequence of operations is successfully or not.
* Consistency: Ensures that the database properly changes states upon a successfully committed transaction.
* Isolation: Enables transactions to operate independently of and transparent to each other.
* Durability: Ensures that the result or effect of a committed transaction persists in case of a system failure.

1. Can you explain database partitioning?

* A division of a logical DB or its constituting elements into distinct independent parts.
* Purposes:
  + For manageability
  + Performance
* Three common criteria to split DB:
  + Range partitioning (use certain range)
  + List partitioning (assign a list of values)
  + Hash partitioning (use value of a hash function)

1. What is the difference between DELETE and TRUNCATE?

* DELETE:
  + Deletion of each row or the whole table gets logged and physically deleted.
  + Could have condition, triggers
  + Need to commit the changes
* TRUNCATE:
  + Log the de-allocation of the data pages in which the data exists.
  + No need the commit statement.
  + Don’t have condition, triggers.

1. When to use "group by" clause?

* Group similar data

1. What is the different between "Having" and "Where" clause?

* Having: conditions used with group by.
* Where: conditions used with SELECT.

1. What is a Sub Query?

* A query nested inside a SELECT statements
* Alternative to complex join statements.

1. What is a View?

* A virtual table created on basis of the result set returned by the select statement.
* Increase performance and security

1. How to find how many duplicated record in a table?

* Step1: count all distinct records in table.
* Step2: count all records in that table
* Step3: The result: the result in step2 subtracts to the result in step 1.

1. How to count a number of records in a table.

* Use count(\*) from Table.

1. What is composite key?

* One primary key consists of two tables.