

# SQL Server Interview Questions

By  
Shivprasad Koirala

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## **Chapter 1: Database Concepts**

- What is database or database management systems (DBMS)?
- What is difference between DBMS and RDBMS?
- What are CODD rules?
- Is access database a RDBMS?
- What is the main difference between ACCESS and SQL SERVER?
- What is the difference between MSDE and SQL SERVER 2000?
- What is SQL SERVER Express 2005 Edition?
- What is SQL Server 2000 Workload Governor?
- What is the difference between SQL SERVER 2000 and 2005?
- What are E-R diagrams?

- How many types of relationship exist in database designing?
- What is normalization? What are different types of normalization?
- What is denormalization?
- Can you explain Fourth Normal Form?
- Can you explain Fifth Normal Form?
- Have you heard about sixth normal form?
- What is Extent and Page?
- What are the different sections in Page?
- What are page splits?
- In which files does actually SQL Server store data?
- What is Collation in SQL Server?
- Can we have a different collation for database and table?

## **Chapter 2: SQL**

- Revisiting basic syntax of SQL?
- What are “GRANT” and “REVOKE” statements?
- What is Cascade and Restrict in DROP table SQL?
- How to import table using “INSERT” statement?
- What is a DDL, DML and DCL concept in RDBMS world?
- What are different types of joins in SQL?
- What is “CROSS JOIN”?
- You want to select the first record in a given set of rows?
- How do you sort in SQL?
- How do you select unique rows using SQL?
- Can you name some aggregate function in SQL Server?
- What is the default “SORT” order for a SQL?
- What are Wildcard operators in SQL Server?
- What is the difference between “UNION” and “UNION ALL”?
- What are cursors and what are the situations you will use them?
- What are the steps to create a cursor?
- What is a self-join?
- What are the different Cursor Types?
- What are “Global” and “Local” cursors?
- What is “Group by” clause?
- What is ROLLUP?
- What is the difference between DELETE and TRUNCATE
- What is CUBE?
- What is the difference between “HAVING” and “WHERE” clause?
- What is “COMPUTE” clause in SQL?
- What is “WITH TIES” clause in SQL?
- What does “SET ROWCOUNT” syntax achieves?
- What is a Sub-Query?
- What is “Correlated Subqueries”?

- What is “ALL” and “ANY” operator? or
- What is a “CASE” statement in SQL? or
- What does COLLATE Keyword in SQL signify? or
- What is CTE (Common Table Expression)?
- Select addresses which are between ‘1/1/2004’ and ‘1/4/2004’?
- What is TRY/CATCH block in T-SQL?
- What is UNPIVOT?
- What are RANKING functions?
- Why should you use CTE rather than simple views?
- What is RANK ()?
- What is ROW\_NUMBER()?
- What is DENSE\_RANK()?
- What is NTILE()?
- What is SQL injection?
- What (is PIVOT feature in SQL Server?

## Chapter 3: .NET Integration

- What are steps to load a .NET code in SQL SERVER 2005?
- How can we drop an assembly from SQL SERVER?
- Are changes made to assembly updated automatically in database?
- Why do we need to drop assembly for updating changes?
- How to see assemblies loaded in SQL Server?
- I want to see which files are linked with which assemblies?
- Does .NET CLR and SQL SERVER run in different process?
- Does .NET controls SQL SERVER or is it vice-versa?
- Is SQLCLR configured by default?
- How to configure CLR for SQL SERVER?
- How does SQL Server control .NET run-time?
- In previous versions of .NET it was done via COM interface “ICorRuntimeHost”.
- 
- What is a “SAND BOX” in SQL Server 2005?
- What is an application domain?
- How is .NET Appdomain allocated in SQL SERVER 2005?
- What is Syntax for creating a new assembly in SQL Server 2005?
- Do Assemblies loaded in database need actual .NET DLL?
- You have an assembly, which is dependent on other assemblies; will SQL Server load the dependent assemblies?
- Does SQL Server handle unmanaged resources?
- What is Multi-tasking?
- What is Multi-threading?
- What is a Thread?
- Can we have multiple threads in one App domain?

- What is Non-preemptive threading?
- What is pre-emptive threading?
- Can you explain threading model in SQL Server?
- How does .NET and SQL Server thread work?
- How is exception in SQLCLR code handled?
- Are all .NET libraries allowed in SQL Server?
- How many types of permission level are there for an assembly?
- In order that an assembly gets loaded in SQL Server what type of checks are done?
- Can you name system tables for .NET assemblies?
- Are two version of same assembly allowed in SQL Server?
- How are changes made in assembly replicated?
- Is it a good practice to drop a assembly for changes?
- In one of the projects following steps where done, will it work?
- What does Alter assembly with unchecked data signify?
- How do I drop an assembly?
- Can we create SQLCLR using .NET framework 1.0?
- While creating .NET UDF what checks should be done
- How do you define a function from the .NET assembly?
- Can you compare between T-SQL and SQLCLR?
- With respect to .NET is SQL SERVER case sensitive?
- Does case sensitive rule apply for VB.NET?
- Can nested classes be accessed in T-SQL?
- Can we have SQLCLR procedure input as array?
- Can object data type be used in SQLCLR?
- How is precision handled for decimal data types in .NET?
- How do we define INPUT and OUTPUT parameters in SQLCLR?
- Is it good to use .NET data types in SQLCLR?
- How to move values from SQL to .NET data types?
- What is System.Data.SqlServer?
- What is SQLContext?
- Can you explain essential steps to deploy SQLCLR?
- How do create function in SQL Server using .NET?
- How do we create trigger using .NET?
- How to create User Define Functions using .NET?
- How to create aggregates using .NET?
- What is Asynchronous support in ADO.NET?
- What is MARS support in ADO.NET?
- What is SQLbulkcopy object in ADO.NET?
- How to select range of rows using ADO.NET?
- What are different types of triggers in SQL SERVER 2000?
- If we have multiple AFTER Triggers on table how can we define the sequence of the triggers.
- How can you raise custom errors from stored procedure?

## Chapter 4: ADO.NET

- Which are namespaces for ADO.NET?
- 
- Can you give a overview of ADO.NET architecture?
- What are the two fundamental objects in ADO.NET?
- What is difference between dataset and data reader?
- What are major difference between classic ADO and ADO.NET?
- What is the use of connection object?
- What are the methods provided by the command object?
- What is the use of “Data adapter”?
- What are basic methods of “Data adapter”?
- What is Dataset object?
- What are the various objects in Dataset?
- How can we connect to Microsoft Access, FoxPro, Oracle etc?
- What is the namespace to connect to SQL Server?
- How do we use stored procedure in ADO.NET?
- How can we force the connection object to close?
- Can we optimize command object when there is only one row?
- Which is the best place to store connection string?
- What are steps involved to fill a dataset?
- What are the methods provided by the dataset for XML?
- How can we save all data from dataset?
- How can we check for changes made to dataset?
- How can we add/remove row is in “DataTable” object of “Dataset”?
- What is basic use of “Data View”?
- What is difference between “Dataset” and “Data Reader”?
- How can we load multiple tables in a Dataset?
- How can we add relation’s between table in a Dataset?
- What is the use of Command Builder?
- What is difference between “Optimistic” and “Pessimistic” locking?
- How many way’s are there to implement locking in ADO.NET?
- How can we perform transactions in .NET?
- What is difference between Dataset Clone and Dataset Copy?
- What’s the difference between Dataset and ADO Record set?

## Chapter 5: Notification Services

- What are notification services?
- What are basic components of Notification services?
- Can you explain architecture of Notification Services?
- Which are the two XML files needed for notification services?

- What is Nscontrols command?
- What are the situations you will use “Notification” Services?

## **Chapter 6: Service Broker**

- What do we need Queues?
- What is “Asynchronous” communication?
- What is SQL Server Service broker?
- What are the essential components of SQL Server Service broker?
- What is the main purpose of having Conversation Group?
- How to implement Service Broker?
- How do we encrypt data between Dialogs?

## **Chapter 7: XML Integration**

- What is XML?
- What is the version information in XML?
- What is ROOT element in XML?
- If XML does not have closing tag will it work?
- Is XML case sensitive?
- What is the difference between XML and HTML?
- Is XML meant to replace HTML?
- Can you explain why your project needed XML?
- What is DTD (Document Type definition)?
- What is well formed XML?
- What is a valid XML?
- What is CDATA section in XML?
- What is CSS?
- What is XSL?
- What is Element and attributes in XML?
- Can we define a column as XML?
- How do we specify the XML data type as typed or untyped?
- How can we create the XSD schema?
- How do I insert in to a table that has XSD schema attached to it?
- What is maximum size for XML data type?
- What is Xquery?
- What are XML indexes?
- What are secondary XML indexes?
- What is FOR XML in SQL Server?
- Can I use FOR XML to generate SCHEMA of a table and how?
- What is the OPENXML statement in SQL Server?
- I have huge XML file, which we want to load in database?
- How to call stored procedure using HTTP SOAP?

- What is XMLA?

## **Chapter 8: Data Warehousing / Data Mining**

- What is “Data Warehousing”?
- What are Data Marts?
- What are Fact tables and Dimension Tables?
- What is Snow Flake Schema design in database?
- What is ETL process in Data warehousing?
- How can we do ETL process in SQL Server?
- What is “Data mining”?
- Compare “Data mining” and “Data Warehousing”?
- (What is BCP?
- How can we import and export using BCP utility?
- During BCP we need to change the field position or eliminate some fields how can we achieve this?
- What is Bulk Insert?
- What is DTS?
- Can you brief about the Data warehouse project you worked on?
- What is an OLTP (Online Transaction Processing) System?
- What is an OLAP (On-line Analytical processing) system?
- What is Conceptual, Logical and Physical model?
- What is Data purging?
- What is Analysis Services?
- What are CUBES?
- What are the primary ways to store data in OLAP?
- What is META DATA information in Data warehousing projects?
- What is multi-dimensional analysis?
- What is MDX?
- How did you plan your Data warehouse project?
- What are different deliverables according to phases?
- Can you explain how analysis service works?
- What are the different problems that “Data mining” can solve?
- What are different stages of “Data mining”?
- What is Discrete and Continuous data in Data mining world?
- What is MODEL is Data mining world?
- How are models actually derived?
- What is a Decision Tree Algorithm?
- Can decision tree be implemented using SQL?
- What is Naïve Bayes Algorithm?
- Explain clustering algorithm?
- Explain in detail Neural Networks?
- What is Back propagation in Neural Networks?
- What is Time Series algorithm in data mining?

- Explain Association algorithm in Data mining?
- What is Sequence clustering algorithm?
- What are algorithms provided by Microsoft in SQL Server?
- How does data mining and data warehousing work together?
- What is XMLA?
- What is Discover and Execute in XMLA?

## **Chapter 9: Integration Services / DTS**

- What is Integration Services import / export wizard?
- What are prime components in Integration Services?
- How can we develop a DTS project in Integration Services?

## **Chapter 10: Replication**

- What's the best way to update data between SQL Servers?
- What are the scenarios you will need multiple databases with schema?
- How will you plan your replication?
- What are publisher, distributor and subscriber in "Replication"?
- What is "Push" and "Pull" subscription?
- Can a publication support push and pull at one time?
- What are different models / types of replication?
- What is Snapshot replication?
- What are the advantages and disadvantages of using Snapshot replication?
- What type of data will qualify for "Snapshot replication"?
- What is the actual location where the distributor runs?
- Can you explain in detail how exactly "Snapshot Replication" works?
- What is merge replication?
- How does merge replication work?
- What are advantages and disadvantages of Merge replication?
- What is conflict resolution in Merge replication?
- What is a transactional replication?
- Can you explain in detail how transactional replication works?
- What are data type concerns during replications?

## **Chapter 11: Reporting Services**

- Can you explain how can we make a simple report in reporting services?
- How do I specify stored procedures in Reporting Services?
- What is the architecture for "Reporting Services"?

## **Chapter 12: Database Optimization**

- What are indexes?
- What are B-Trees?

- I have a table which has lot of inserts, is it a good database design to create indexes on that table?
- What are “Table Scan’s” and “Index Scan’s”?
- What are the two types of indexes and explain them in detail?
- What is “FillFactor” concept in indexes?
- What is the best value for “FillFactor”?
- What are “Index statistics”?
- How can we see statistics of an index?
- How do you reorganize your index, once you find the problem?
- What is Fragmentation?
- How can we measure Fragmentation?
- How can we remove the Fragmented spaces?
- What are the criteria you will look in to while selecting an index?
- What is “Index Tuning Wizard”?
- What is an Execution plan?
- How do you see the SQL plan in textual format?
- What is Nested join, Hash join and Merge join in SQL Query plan?
- What joins are good in what situations?
- What is RAID and how does it work?

## Chapter 13: Transaction and Locks

- What is a “Database Transactions “?”
- What is ACID?
- What is “Begin Trans”, “Commit Tran”, “Rollback Tran” and “Save Tran”?
- What are “Checkpoint’s” in SQL Server?
- What are “Implicit Transactions”?
- Is it good to use “Implicit Transactions”?
- What is Concurrency?
- How can we solve concurrency problems?
- What kind of problems occurs if we do not implement proper locking strategy?
- What are “Dirty reads”?
- What are “Unrepeatable reads”?
- What are “Phantom rows”?
- What are “Lost Updates”?
- What are different levels of granularity of locking resources?
- What are different types of Locks in SQL Server?
- What are different Isolation levels in SQL Server?
- What are different types of Isolation levels in SQL Server?
- If you are using COM+, what “Isolation” level is set by default?
- What are “Lock” hints?
- What is a “Deadlock”?
- What are the steps you can take to avoid “Deadlocks”?
- How can I know what locks are running on which resource?

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