Possible Topics For Virtual Classes

Virtual Class Topics

Any of the following topics are available for the virtual classroom.

- **Beginning SQL Server**
    - Introduction
    - What is SQL Server?
    - Installing SQL Server 2008
    - SQL Server Management Studio
    - Differences between SQL Server 2005 and SQL 2008
    - Introduction to SQL Books Online
    - AdventureWorks Database Diagram
    - Simple Selects
    - Simple Inserts
    - Simple Updates
    - Simple Delete
    - Aggregating Data
    - Querying Related Tables
    - Join Syntax
    - Inner Joins
    - Left / Right Outer Join
    - Cross Joins
    - Unions
    - Sub-Queries
    - Overview Of Database Design
    - 1st, 2nd and 3rd Normal Form
    - Creating Tables
    - Creating Relationships

- SQL Server Databases
    - master
    - tempdb
    - model
    - msdb
    - AdventureWorks
- Creating Database Objects with TSQL
    - Databases
    - Tables
    - Views
    - Synonyms

    - Stored Procedures
    - Functions
    - Triggers
    - Security

Ideas from Craigslist job postings

To compile the following list I scanned many craigslist jobs posting searching for SQL Server DBA's and Programmers, and created a list of the topics and buzz words that people are looking for when hiring today.

Here is the list, any of these are open to be covered in the virtual classroom.

- Backups
    - Manage backups and disaster recovery process for both SQL Server and Analysis Services
    - Recoverability - Creating and testing Backups

- Security
    - Extensive knowledge of installation, configuration and securing of SQL - roles creation, user accounts, NTFS, registry, etc
    - Security - Defining and/or implementing access controls to the data
    - Design and implement secure environments and control and monitor user access and activity levels
    - Plan, coordinate, and implement database security
    - Maintain database security roles and permissions
- Tuning and Performance
    - Demonstrated proficiency using SQL Profiler
    - Maintain and tune indexes
    - Tune databases for optimal performance
    - Performance - Ensuring maximum performance given budgetary constraints
    - Optimization of stored procedures
    - Ability to develop indexing strategies
    - Analyze database performance and recommend improvements

- H/A
    - Design and implement 24x7 uptime database solution

    - Familiarity with various High Availability strategies
    - Day to day maintenance and support of multiple SQL server clusters and sites
    - Implementation of database mirroring
    - Availability - Ensuring maximum uptime
    - Design and implementation of transactional replication for reporting and alerting

- Capacity / Growth
    - Analyze database performance and recommend improvements
    - Plan, recommend and implement capacity, growth and changes for the SQL Server architecture
    - Scale and monitor database and transaction log growth
- Upgrades
    - Responsible for improvement and maintenance of the databases to include rollout and upgrades.
- Ongoing Maintenance
    - Monitor disk space and allocate accordingly
    - Accountable for monitoring, troubleshooting, fixing database issues
    - Participate in around the clock on-call support rotation
    - Script and monitor nightly maintenance
    - Proactively monitor and resolve any database issues as they arise
    - Script and monitor nightly maintenance
    - Troubleshoot database issues
    - Coordinate database server maintenance and patching and implement infrastructure changes in accordance with IT configuration and change management policies
    - Day to day maintenance and support of multiple SQL server clusters and sites
    - Monitor and maintain appropriate disk storage requirements for all databases

- Configuration
    - Expert knowledge of SQL Server 2005 & 2008 administration and configuration
- Integrity
    - Responsible for the performance and integrity of the databases
    - Integrity - Verifying or helping to verify data integrity

- Integration with Development and Testing environements
    - Development and testing support - Helping programmers and engineers to efficiently utilize the database.
    - Consult with application developers regarding optimal use of SQL Server and related technologies and assist in recommending and overseeing database enhancements

- Monitor system event and error logs as well as disk drive space available to databases and transaction logs
- Prepare documentation manuals, perform cost and benefit analyses and prepare project status reports where required
- Provide consultation and advice to application development groups to ensure that development efforts do not negatively affect production systems
- Assure compliance with corporate IT standards through participation in design and code reviews
- Create and maintain SQL objects for development, test and production environments
- Extensive experience troubleshooting issues in SQL Server including performance problems and connectivity issues
- Work with Development team to design long-term strategies for scalability, redundancy, high availability to support Phreesia applications
- Responsible for implementation and release of database changes according to agreed timescales
- Design and implementation of transactional replication for reporting and alerting
- Primarily responsible for Microsoft SQL Server Administration.
- Develop and deploy standard maintenance jobs for all databases
- Support application testing, ensuring proper database operation
- Monitor disk utilization stats and database fragmentation on a periodic basis
- Maintain an ongoing configuration design and documentation for the databases.
- Perform routine tasks such as purging old files and checking disk space
- Maintain database security
- Create and maintain SQL queries and stored procedures as needed
- Run diagnostics as required
- Administer SQL Reporting Services and create/maintain SQL reports
- Experience writing SQL queries, stored procedures and triggers
- Strong Experience with configuring systems for Clustering and backup/restore processes
- Knowledge of SQL Data Transformation Services (DTS)
- Experience performing database analysis and design for tuning efforts
- Work with Development team to design long-term strategies for scalability, redundancy, high availability to support Phreesia applications
- Responsible for implementation and release of database changes according to agreed timescales
- Design and develop ETL processes to move client data.
- Develop automated database applications, where necessary, using the applicable database packages.
- Identify inefficiencies in current databases and leverage database architecture solutions.