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Final Project 9: Course Project Admin

Handling specific aspects of database management for the project database.

- Backup: Backups should be used for operational recoveries, to recover overwritten files or corrupted databases. There are a series of standards that should be adhered to in the case of backups. The first is to perform daily full backups. Second, perform frequent backups of the transaction log. This is to ensure that there is a full record of the most recent activity. Third, have a plan to regularly backup system databases. Keeping the configuration information and job information for the SQL Server are necessary for a full system restore. Fourth, backup the host OS. This has to do with the fact that SQL Server runs on top of the OS, and any failure that requires a full system restore would begin with the OS. Finally, practicing and testing all recovery operations in the test environment will provide valuable information into the usefulness of any devised strategies.
- Archiving: Archives are to store a more finalized file version than the backup. That is to say that the data in the specific archive should not change. However, selecting an archive medium is a challenge all on its own, since there are many factors to consider. The accessibility, reliability, and scaling of the selected storage system should all be taken into account before selecting a medium. This is a choice that should be engaged in with the primary users, and owners of the data.
- Testing: Keeping prototypes out of the production system is an important aspect of the role of database admin that falls under the definition of testing. Testing new features and programs should occur on an entirely separate system. Even after a new feature has met rigorous standards from the DBA, the programmers involved, and a separate quality assurance team, the

results of these tests must be approved by the users and admin. Once this has been provided, along with detailed documentation, the users are notified of when the new changes will happen. Finally, the administrator adds the new items to the production system and makes all required changes.

- Hardware Failure:
  - Power Failure: Power failure should be addressed by the plans laid out in the backup portion of this paper. What would happen in the case of power failure is the current server, post failure, would be compared to both the daily backups, as well as the most recent transactional backups.
  - Hard Drive Failure: In case of hard drive failure, the database should be able to be restored from the combined OS backup, system backups, daily backups, and transactional data.
  - Complete Server or Database Failure: If this happened, the first step should be to reevaluate the backups in a test environment to determine if there was a critical flaw missed in earlier testing. This should allow for new polices to be developed. If it can be determined that the failure was only tangentially related to the server or database (I.E. hardware or OS failure), then it should be a simple matter to restore the system from the wealth of backup data provided.

Resources:

http://www.itprotoday.com/microsoft-sql-server/sql-server-backup-best-practices

https://online.vitalsource.com/#/books/9781133684374/cfi/280!/4/4@0.00:45.7