

Microsoft

Exam 70-441

Designing Database Solutions by Using MS SQL Server 2005

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[Total Questions: 89]

Topic 1, A. Datum Corporation

BACKGROUND

Company Overview

A.Datum Corporation provides online survey services. These services include creation, survey execution, and survey reporting.

The company sells aggregated survey results to third-party subscribers. These results do not contain any personally identifiable information.

Physical Locations

A.Datum corporation is an international company that has offices in London, Seattle, and Sydney. Customers and survey participants are located worldwide.

Planned Changes

The company will be migration all existing applications to SQL Server 2005.

A survey application named APP1 will be modified to provide automatic customer notification when survey results are available.

A new application named APP2 will be created to enable analysis of demographics of survey participants. This application must allow filtering based on a variety of criteria. One specific criterion that must be used for filtering is the participant's age at the time of survey completion.

SQL Server 2005 will be the database system that must be used for all new development.

Problem Statements

Creating new reports for customers is a time-consuming process that currently requires custom development, because developers must understand the underlying database design.

Customers do not currently have the ability to create ad hoc reports on their survey data. Customers want to be able to perform minor changes to reports; they do not want to wait for A.Datum Corporation developers to make those changes.

EXISTING ENVIRONMENT

Existing Application Environment

A.Datum Corporation is currently running SQL Server 2000 Enterprise Edition with Service pack 3a. SQL Server is hosted on computers that run Microsoft Windows Server 2003 with Service Pack 1.

APP1 is a Web-based application that is used by customers and survey participants.

Internal analysts view data by using a smart client application named APP3 to perform their analyses.

Existing Supporting Infrastructure

A.Datum Corporation purchases information about potential survey participants from multiple business partners. These partners use File Transfer Protocol(FTP) to send XML files that contain the information.

The current database server is named Server3.It is utilizing 25 percent of its allocated disk space.

The **Participant** table in the current database contains approximately 15 million rows.

BUSINESS REQUIREMENTS

General Requirements

Individual customers must receive and view only their own data.

APP2 must allow viewing and analysis of demographic data on survey participants.

Reports

Customers might want to see their reports in multiple formats, including HTML, PDF, Microsoft Excel ,comma-se[arated values (CSV),and TIFF.

In customer reports, dates should be displayed in the calendar format that is native to the user of the report. This formatting should not affect the time needed to produce the report.

Reports must be available on demand or run as a scheduled service. Customers might want A.Datum Corporation to send reports to them automatically by e-mail

Customers must not be required to understand the underlying database design in order to perform ad hoc reporting on their survey data.

Customers have requested a new report named Results that lists each survey question and the names of the first five participants who selected each answer. The desired output display is shown in the following table.

Question number	Answer choice	Participant
1	A	Allison Brown,Wendy Kahn
1	B	Amy Rusko,Paul Koch
1	C	Anton Kirilov,Matthew Carroll
1	D	Kevin Kennedy,Alan Shen

Running the report must consume as few CPU cycles as possible on the A.Datum

Corporation servers.

Internal analysts need to view customer reports in APP3. Analysts must not be able to modify these reports. Analysts must not be granted unnecessary privileges.

Aggregated survey results must be made available to subscribers in XML file format. The files will be transmitted to the subscribers by using FTP. The results will contain both element-centric and attribute-centric data.

Views

The company's marketing department wants to measure the value of the data on potential participants that is purchased from business partners. The marketing department requires a view of the data that contains all potential participants to whom surveys were distributed and the names of surveys that the participants have submitted. Some potential participants might not have submitted any surveys, but they should be included in the view. The **Participant** table should contain all potential participants. The Survey table should contain all surveys that were submitted.

Performance

Queries must return data in three seconds or less. This performance metric must be met even in cases where the database exceeds one terabyte in size.

As part of the upgrade to SQL Server 2005, baseline database performance metrics must be developed. A performance monitoring process must be established that will allow the company to track database performance over time against the baseline measurements.

Availability

APP1 must be available to customers and survey participants 24 hours per day, seven days per week. A monthly two-hour downtime will be scheduled for maintenance activities.

TECHNICAL REQUIREMENTS

Security

Aggregate data files that are produced for third-party subscribers will contain a unique subset of the data for each subscriber. A history of the data that was distributed to each subscriber must be maintained.

Maintainability

The upgrade must fulfill the following requirements:

- ✍ All SQL Server 2005 functionality must be enabled.
- ✍ All stored procedures must continue to function as designed
- ✍ The test team must validate the migration within a two-day test period.
- ✍ The test team is familiar with Transact-SQL test execution; however, they are not trained on the new SQL Server management tools
- ✍ The test results after the upgrade must be compared to the test results that

occurred prior to the upgrade.

- ✍ The database control strategy must ensure that authorized changes are applied to all the databases only during the monthly maintenance periods.
- ✍ The database control strategy must minimize any permission resets that occur as a result of changes that are made to the production database.

Data

- ✍ The XML files that contain data on potential survey participants often contain duplicate records that vary slightly. An example of this variation is shown in the table below. This data must be standardized to minimize the number of duplicate participant records. The XML representation of the data must be stored in the database. when any of the data is updated, the XML representation of the data must be kept up-to-date.
- ✍ The data on potential survey participants must be imported into a staging database named DB1.
- ✍ Historical survey data must be retained for an indefinite period.

An example of duplicate data for a single participant is shown in the following table.

Surname	Given name	Street	City	Postal code
Anderson	Thomas	12 West 2 nd St.	New York	01224
Anderson	Tom	12 W Second St.	NYC	01224
Anderson	T	12 West 2 nd St.	New York	01224-1234

The **Participant** table in the database must be modified to add three new columns and the data for those columns. The data for these columns will require lookups from existing tables in the database. This one-time modification must occur during a monthly maintenance period.

Question No : 1 - (Topic 1)

You are designing a performance monitoring plan for the database that supports APP1. You need to monitor only necessary indicators. Which indicator or indicators should you include in the baseline? (Choose all that apply.)

- A. response times for frequently used queries
- B. database backup and restore completion times
- C. disk I/O
- D. CPU utilization
- E. network packet size
- F. SOAP requests failed
- G. HTTP authenticated requests

Answer: A,C,D

Question No : 2 - (Topic 1)

You need to ensure that survey customers are automatically notified when their survey results are available. You must also ensure that customers can manage their own recipient lists. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Create a Subscription Management interface that will allow customers to modify their recipient lists.
- B. Create a custom Notification Services Content Formatter to send an e-mail message to customers when their survey results are available.
- C. Create a custom Notification Services Event Provider to send an e-mail message to customers when their survey results are available.
- D. Create a Notification Services custom delivery protocol to send an e-mail message to customers when their survey results are available.
- E. Create Notification Services Event rules to send an e-mail message to customers when their survey results are available.

Answer: A,C

Explanation:

You use Notification Services Event Provider to send emails out.

By exclusion: there is no such thing as Notification Services Event Rules

Question No : 3 - (Topic 1)

You need to cleanse and standardize the data on potential survey participants prior to inserting it into the staging database. What should you do?

- A. Import the data into a staging table by using the OPENROWSET BULK statement. Execute a Transact-SQL stored procedure to cleanse the data and to insert the data into the database.
- B. Import the data into a staging table by using the BULK INSERT statement. Execute a Transact-SQL stored procedure to cleanse the data and to insert the data into the database.
- C. Create a SQL Server Integration Services (SSIS) package to import, standardize, and cleanse the data.

D. Create a CLR stored procedure to import the data into a staging table, to cleanse and standardize the data, and to insert the data into the database.

Answer: C

Question No : 4 - (Topic 1)

You need to provide ad hoc reporting capabilities to fulfill business requirements. What should you do?

- A. Create a SQL Server Reporting Services (SSRS) report. Enable customers to modify the report by using Report Builder.
- B. Create an ASP.NET application that will enable customers to view and modify reports by calling the SQL Server Reporting Services (SSRS) API.
- C. Create an ASP.NET application that will enable customers to view and modify reports by using a SQL Server Reporting Services (SSRS) ActiveX control.
- D. Create a SQL Server Reporting Services (SSRS) Report Model. Enable customers to modify reports based on the model by using Report Builder.

Answer: D

Question No : 5 - (Topic 1)

You are upgrading the database servers that are used by all of the company's applications. As the first step in the upgrade, you upgrade the development database servers. You need to verify that the upgrade of the database servers did not introduce any errors into the databases. What should you do?

- A. Execute unit test scripts for each stored procedure in each database.
- B. Execute the stored procedures in the SQL Server Management Studio debugger, and verify the results.
- C. Set the database compatibility level on the database servers to 80.
- D. Execute the application user interface test scripts to verify proper operation.

Answer: A

Question No : 6 - (Topic 1)

You need to provide analyst reporting capabilities that fulfill the business requirements. What should you do?

- A. Add a Report Viewer control to APP3.
- B. Add an Internet Explorer ActiveX control to APP3. Set the controls URL to the A. Datum Corporation Report Manager.
- C. Create a hyperlink in APP3 that references the Report Manager.
- D. Create a proxy class to the Report Server Web service.

Answer: A

Question No : 7 - (Topic 1)

You receive updates to data on potential survey participants. You need to create a stored procedure to synchronize the updated information with the XML representation of the data on potential survey participants that is stored in the database. What should you do?

- A. Update the XML representation by using the nodes() method.
- B. Update the XML representation by using the OPENXML statement.
- C. Update the XML representation by using the value() method.
- D. Update the XML representation by using the modify() method.

Answer: D

Question No : 8 - (Topic 1)

You need to design a view to fulfil the marketing department requirements. What should you do?

- A. Join the Participant table to the Survey table by using a full outer join operator.
- B. Join the Participant table to the Survey table by using a left outer join operator.
- C. Join the Participant table to the Survey table by using an inner join operator.
- D. Join the Participant table to the Survey table by using a join operator.

Answer: B

Question No : 9 - (Topic 1)

You need to design a database object for APP2 that returns demographic data. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Create a user-defined function that calculates and returns the participants age on the date of the survey.
- B. Create a view that includes a computed column named Age that is calculated from the participants date of birth and the date of the survey.
- C. Create a parameterized stored procedure that returns the participants age on the date of the survey.
- D. Create an index on the Age column.
- E. Create a computed column named Age that is calculated from the participants date of birth and the date of the survey.

Answer: D,E

Question No : 10 - (Topic 1)

You need to design the new report named Results. What should you do?

- A. Create a user-defined aggregation to produce a report that has concatenated respondent names.
- B. Create a table-valued function to produce a report that has concatenated respondent names.
- C. Create a common table expression (CTE) query to produce the report.
- D. Create a correlated subquery to produce a report that has concatenated respondent names.

Answer: A

Question No : 11 - (Topic 1)

You need to control inadvertent changes to the database objects on the production database servers. What should you do?

- A. Create DDL triggers to roll back changes to database objects. Disable the DDL triggers during maintenance activities.
- B. Maintain all source code in a source code management tool.
- C. Script all database objects to individual text files.

D. Revoke all CREATE, ALTER, and DROP permissions in the databases.

Answer: A

Topic 2, Woodgrove Bank

BACKGROUND

Company Overview

Woodgrove Bank is a large consumer bank that has one million customers in 10 cities.

Planned Changes

The company is developing a system for remote banking. Dedicated PC terminals that customers can use to perform many of their banking functions, such as paying bills and applying for loans, will be placed throughout the cities where Woodgrove Bank is active.

Problem Statement

The company wants a solution to be designed that will use SQL Server 2005 to manage the data that is used by the customer terminals.

EXISTING ENVIRONMENT

Existing Application Environment

The company's main banking system is a proprietary application. The new terminal personal banking system will use SQL Server 2005 to host all information about the accounts.

BUSINESS REQUIREMENTS

Terminals

The company has the following requirements for the new terminals:

- ✍ The terminals need to support third-party advertisements that will be displayed while a customer is using the terminals.
- ✍ The advertisers must be able to retrieve real-time statistics on the display of their ads any time, directly from their own systems.
- ✍ The entire terminal application must support more than one language, and it must be possible to add more languages without changing the database structure.

Multiple Language Support

The company has the following requirements for the new application's user interface (UI) elements:

- ✍ Each UI textual element will have only one description of the element's purpose, and it will be in English. For example, the text Save, regardless of language, should have the following description: The text displayed on buttons used to save changes.
- ✍ The text for every element can exist in one or more languages.