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Exam :070-100

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Seven Case Studies

Set 1: Hanson, Contoso, Fabrikam, and Woodgrove
Set 2: Hanson, Duluth Mutual, Enchantment Lakes, and General Business Consultants

There is also a set of multiple choice questions.

MULTIPLE CHOICE QUESTIONS.

Q. 1
A system expects to be deployed for 100 users but within a year will be deployed to 5000 users. What will be most affected by the increase in users?

A. Extensibility
B. Securability
C. Availability
D. Scalability
E. Maintainability

Answer: D.
Explanation: The application must be scalable in order to function when the number of users is increased drastically.

Incorrect Answers:
A: Extensibility is the capacity to extend or stretch the functionality of the development environment — to add something to it that didn't exist there before. This will not be the main concern when the number of users increase drastically.
B: Security would not normally be affected way when the users are increased.
C: The system must be available for all users, but this is only dependant on the scalability in this question since the system works very well with 100 years.
E: Maintainability, keeping the system running, is not major concern here. The major concern is how well the system works with the increased number of users.

Q. 2
Lanhoo has added features to an ActiveX control that is used by a networked client application to access data on the company Intranet. How can Lanhoo ensure backward compatibility between the client application and the modified control?

A. Creating a new Interface and assigning it a new Interface ID that exposes all features
B. Creating a new Interface and assigning it a different Class ID that exposes only the new features
C. Creating a new Interface and assigning it the same Interface ID that exposes both the old and the new features
D. Creating a new Interface and assigning it the same Class ID that exposes only the new features

Answer: A.
Explanation: If you make a new version of your component, using the Binary Compatibility (VB6) option, the new version will contain the class IDs and interface IDs the old client needs to create objects and use their properties and methods, as well as class IDs and interface IDs of the enhanced versions of the classes. This would ensure backward compatibility.

Incorrect Answers:
B: The new Interface must have a new Interface ID.
C: If the new interface would be assigned the same Interface ID as the old control, the old control would no longer be used.
D: The new Interface must have a new Interface ID.

Q. 3
You need a secure site for an online magazine. Users should have access through a secure connection, what security mechanism should you use?

A. NT Challenge Response
B. SSL
C. Digital Signing
D. Basic Authentication

Answer: D
Internet Information Services (IIS) can be configured for Basic Authentication. This would provide secure connections to the online size.

Incorrect Answers:

A: NT Challenge response can only be used within a Windows NT 4.0 domain, not for public use on the Internet.

B: Secure Socket Layer (SSL) is a security mechanism that has to build into the application. It would only make an application secure not the connection.

C: Digital signing is used to verify software components such as drivers and Active-X controls. They are not used to create a secure connection.

Q. 4

You write an application for 2 to 200 clients with VB. Which database access method should you use to simplify coding?

A. ADO with DBLIB to access SQL
B. DAO with DBLIB to access SQL
C. ADO Only
D. DAO and RDO

Answer: C.

Explanation: ActiveX Data Objects (ADO) is the preferred interface. DAO and RDO should only be used for backward compability.

Incorrect Answers:

A: DBLIB is a Pearl interface for SQL Server databases. We are using Visual Basic not Pearl here.

B: DAO should only be used for backward compatibility.

D: DAO or RDO should only be used for backward compatibility.

Q. 5

A user has about 20 exclusive options to select, what user interface to use?

A. Drop-down list
B. Multi-select list
C. 20 grouped checkboxes
D. 20 grouped option-buttons

Answer: A.

Explanation: The number of choices is large so a drop-down list should be used. If only a few choices are present option buttons would be preferred.

Incorrect Answers:
B: The choices are exclusive. We should not use multi-select lists.
C: 20 grouped checkboxes would clutter the user interface.
D: If only a few choices are present option buttons would be preferred.

Q. 6
You are developing direct mail application with a database that contains the mail recipients. The database does not change frequently. Business rules do change frequently. There will be three different applications that use the data. How best to set up this system?

A. Database, business rules, UI on client.
B. DB, rules on server and UI on client
C. DB on server and rules, UI on client
D. UI on client, rules on one server, db on another server.

Answer: D
The take advantage of the three-tier model we should implement the User Interface, the Business Rules, and the Data services on separate machines. Typically the User Interface is implemented on the client computer, the Data Services on a SQL Server computer, and the Business Rules on a separate server.

Incorrect Answers:
A: Putting all three components on the client would not be a flexible solution.
B: It would be better to separate the Database and the business rules to two different servers.
C: It would be easier to change the business rules if they were running on a server.

Q. 7
You are developing an application that performs two complex calculations. How should you implement the system for the best performance?

A. Single Processor, Single Threaded
B. Single Processor, Multithreaded
C. Multiprocessor, Single Threaded
D. Multiprocessor, Multithreaded

Answer: D.

Explanation: The performance of an application with two or more complex calculations would be increased with multiple processors. The application must be multithreaded to be able to take advantage of the processors.

Incorrect Answers:
A: The performance of an application with two or more complex calculations would be increased with multiple processors.
B: The performance of an application with two or more complex calculations would be increased with multiple processors.
C: A single threaded application would only be able to use one processor.

Q. 8
You have an application that will store data in an Access DB and a SQL-Server DB. Which is the best data model to employ for easy maintenance?

A. DAO
B. DB Library
C. ADO
D. DAO and ADO combination

Answer: C.
Explanation: ActiveX Data Objects (ADO) is the preferred interface. DAO and RDO should only be used for backward compability.

Incorrect Answers:
A: DAO should not be used in new application, just to support legacy applications.
B: DB Library is a legacy interface to SQL Server. ADO is the preferred choice.
D: DAO should not be used in new application, just to support legacy applications.

Q. 9
Which of the following are attributes of a normalized database?

A. A table has Non-key attributes dependant on non-key attributes
B. A table has repeating groups
C. A table has multi-value columns
D. A table has all non-key columns dependant on the primary key
E. A table has a primary key dependant on other columns

Answer: D.
Explanation: In a normalized database all non-key columns dependant on the primary key in every table.

Incorrect Answers:
A: Non-key attributes must depend only on the primary key, not on a non-key attribute, in a normalized database.
B: Repeating groups of columns in a table is not allowed in a normalized database.
C: Multiple values in a column make it awkward to access data and cannot exist in a normalized database design.
E: The primary key column cannot be dependant on other columns. All columns must only be dependant of the primary key column.

Q. 10
Choi is designing a wizard to automatically generate Entity Relationship Diagrams. What type of interface should be used?

A. Design the wizard using a different secondary window for each wizard page
B. Design the wizard using a single secondary window for each wizard page
C. Design the wizard using a different primary window for each wizard page
D. Design the wizard using a single secondary window for all wizard pages

Answer: D.
Explanation: The Wizard should not close the primary window. The Wizard should start and run in a single secondary Window for all wizard pages.

Incorrect Answers:
A: The Wizard should run in a single secondary Window. Different secondary windows for every wizard page would be unnecessary.
B: All wizard pages should use a single secondary window.
C: The primary windows should not be changed. The user must be returned to the Windows from where he started the Wizard.

Q. 11
You are designing an application that displays information on publicly traded stocks. You want the information to include the latest closing price, the price change, and the 52-week high.

Which control should you use to display this information?

A. list box
B. tree view control
C. list view control
D. multiple-row text box

Answer: C.
Explanation: A list view would be able to present the required information in a user-friendly format.

Incorrect Answers:
A: This would not be best way to present the data. List box are used to present choices not to present data.
B: The user doesn't have to browse the information. A tree view control is not required.
D: A list view would present the data in a more readable format.

Q. 12
You are designing a distributed application that will run on Microsoft NT. You want your client application to communicate with another component that is hosted on a computer running Windows NT Server 4.0 or later. All client computers and servers are on the same network. You want to expend the least amount of development effort.

Which technology should you use for application-to-application communication?

A. Named pipes
B. Remote procedure call (RPC)
C. Mailslots
D. Dynamic Data Exchange(DDE)
E. Distributed COM (DCOM)

Answer: E.
Explanation: DCOM is the preferred choice for networked applications.

Note: DCOM is an object protocol that enables ActiveX components to communicate directly with each other across a network.

Incorrect Answers:
A: Using named pipes would require more programming than is necessary.
B: It would awkward to develop and maintain functionality with Remote Procedure Calls.
C: Using mailslots would require more programming than is necessary.
D: DDE is a legacy interface. DCOM

Q. 13
You are designing a business object. You want the business object to abstract an existing patient-tracking database. The database includes a Patients table and a Doctors table. There is also a PatientDoctors junction table that tracks which patients have visited which Doctors.

Which object design best represent the information stored in the database?

A. A Patients collection of Patient objects that each contain a Doctors collection of Doctor objects, and a Doctors collection of Doctor objects that each contain a Patients collection of Patients objects
B. A Patients collection of Patient objects that each contain a single PatientDoctor object, and a Doctors collection of Doctor objects that each contain a single PatientDoctor object
C. A Patients collection of Patient objects that each contain a single Doctor object, and a Doctors collection of Doctor objects that each contain a single Patient object
D. A Patients collection of Patient objects that each contain a PatientDoctors collection of PatientDoctor objects, and a Doctors collection of Doctor objects that each contain a PatientDoctors collection of PatientDoctor objects

Answer: A.
Explanation: The only objects of interest are the Patient Objects and the Doctors objects. We don't have to construct any further objects. We don't need any object for the PatientDoctors junction table. This table is only used to map patient and doctors through two one-to-many relations.

Each Patient object must each contain a Doctors collection, since each patient can have several doctors.

Each Doctor object must each contain a Patient collection, since each doctor can have several patients.

Incorrect Answers:
B: Collections should map to the objects of interest. The PatientDoctors is only an auxiliary table and no collection should be created for it.
C: A patient object that only contains a single doctor object would only allow a patient to have one doctor.
D: Collections should map to the objects of interest. The PatientDoctors is only an auxiliary table and no collection should be created for it.

Q. 14
You program a web-based application, which has to access a SQL Server. It has to be accessed from any browser. The HTML is to be produced by ASP.
What technology do you use for data-base access?

A. ADO
B. RDO
C. RDS
D. ISAPI
E. DAO

Answer: A.
Explanation: ActiveX Data Objects (ADO) is the preferred interface. DAO and RDO should only be used for backward compability.
ADO could be used to access a SQL Server. ASP can use ADO.

Incorrect Answers:
B: RDO should only be used for backward compability
C: Remote Data Service (RDS) is used to transport Active Data Object recordsets from a server to a client computer. The resulting recordset is cached on the client computer and disconnected from the server. It is a service which can be used from within the ADO. It would not be possible to use RDS from within ASP without using ADO.
D: ISAPI (Internet Server Application Programming Interface) is a set of functions for Internet servers. It would be awkward to use a programming interface directly.
E: DAO should only be used for backward compability

Q. 15
You are to program an automaton component for an insurance company containing statistical functions. How would you implement it for maximum performance?

A. In-process remotely
B. In-process locally
C. Out-of-process remotely
D. Out-of-process locally

Answer: B.
Explanation: There is no need to run the process remotely and access to in-process objects is faster.
Access to in-process objects is much faster than to out-of-process server objects because Automation does not need to make remote procedure calls across the process boundary.

Incorrect Answers:
A: There is not any need to run in remotely. Performance would suffer somewhat from the extra remote communication.
C: There is not any need to run in remotely.

Access to in-process objects is much faster.

D: Access to in-process objects is much faster

Q. 16

You program a wizard-type application that allows users to design HTML pages. How would you implement it?

A. SDI
B. MDI
C. Dialog-box
D. Tabbed dialog-box

Answer: C.

Explanation: A dialog box would allow the user to make selections but to do nothing further.

Incorrect Answers:

A: The wizard could be implemented as a single document interface (SDI). But the user only needs to interact by specific choices. A dialog box supplies that functionality.
Note: SDI applications allow only one open document frame window at a time.

B: It would unnecessary to allow multiple windows in the Wizard.
Note: Multiple Document Interface (MDI) applications allow multiple document frame windows to be open in the same instance of an application.

D: A tabbed dialog-box is not needed. The user makes some choices and then goes to the next step in the wizard. It would be better to put more steps into the wizard.

Case Study No: 1

HANSON BROTHERS EXECUTIVE INFORMATION SYSTEM

Background:
Hanson Brothers is a corporation that sells hair products. Hanson Brothers has its headquarters (HQ) in the States, and has major subsidiaries (subs) in 10 different countries throughout the world.

Hanson Brothers wants to implement an executive information system (EIS). The EIS should let management at HQ and at all of the subs monitor the sales progress of all divisions of the company, across all subs.

Current System:

Management Information Systems (MIS) Manager:
Once a month, an administrative assistant at HQ spends a couple of days producing a sales report by copying the data from each of the subsidiaries systems and pasting the data into spreadsheet. The spreadsheet is then mailed to managers throughout the company.

Business Analyst:
The lowest level of the product hierarchy is the SKU. SKUs often represent the type of packaging used on a product SKUs roll up in to products, products roll up into product families, and product families roll up into product lines. HQ sales projections can be done at any of three levels line, families, or product. Sales projections are not done at the SKU level, but SKU sales are tracked to measure the success of a particular packaging concept.

Systems Analyst:
There are three problems that we would like to rectify.
All systems are localized to the native language of the country, so the spreadsheet contains product names in various languages. To avoid language problems, querying across all systems must be done by ID numbers rather then by product names.
Currency is stored in the denomination that is local to each sub, making it impossible to do comparisons, across subs, of sales price or cost of goods sold (SOGS).
Receiving feedback only once a month is a big strategic disadvantage for our corporate planners. We need a system that provides daily information. The hair products market is very volatile, often experiencing unexpected sales surges and shortfalls, so receiving rapid feedback crucial.

New System:

Business Analyst:

We would like the system to show the data in as much detail as possible. Differences in detail levels of the subs do not matter as long as the totals are comparable. Accuracy is much more important. Besides needing correct data, we need to understand what information we don't have. We do not want the system to make guesses in order to hide data issues.

Systems Analyst:
We want to develop an EIS that will consolidate all data into a single repository, which can be queried flexible by sales managers throughout the company. This system will consolidate the data from servers at the various subsidiaries to a server here at HQ. We've identified three critical features to be implemented.

Localization of Text
Text strings, such as product names and division names, should be localized into three different languages (English, Spanish, and French). SKUs, product families, and product lines will start out with the English descriptions filled in. A separate utility will allow representatives from a couple of the larger subs to fill in localized descriptions where they do not already exist. Most employees in our subsidiaries can speak and read English, so finding somebody to perform the localization should not cause a problem.

Currency Conversion
In order to provide meaningful comparisons, the figures must be shown in both native currency an U.S. dollars. Because of fluctuations in currency values, the currency conversions must be done on a per-day basis. Sales made for a given day are converted to U.S. dollars based on the exchange rate for that particular day. For example, the formula to determine the U.S. dollar value for a peseta can be represented as "USD=pesetas ExchangeRate". The exchange rates must be applied consistently across all locations within a given day.

Sales Projection
We are creating a sales projection system that will work in conjunction with the sales reporting system. We are developing a front end in which managers at each level will enter their month-by month projections for the region and products that they are responsible for. These projections will be integrated into the sales reports, allowing for comparisons between projected and actual sales. The accuracy of the projections will be a contributing factor when management allocates pay bonuses.
The sales projection system will allow regional managers to set sales projections for their regions. The managers for the territories within a given region will then enter their projected sales forecasts. The sales totals for the territories do not have to be consistent with the totals of the region.

QUESTIONS ***Hanson Brothers Executive Information System***

Q. 1
Which business rule should be applied to the sales projection systems?

A. The sum of the territory projections for a given region must be greater than the projections for that region.
B. The sum of the territory projections for a given region must equal the projections for that region.
C. The sum of the territory projections for a given region must be less than the projections for that region.
D. Projections must be positive and nonzero.
E. No business rule should be applied.

Answer: E.
Explanation: There are no business rules that should be applied to the sales projection application.

Note: The system analyst describes how the projection application would work: "The managers for the territories within a given region will then enter their projected sales forecasts. The sales totals for the territories do not have to be consistent with the totals of the region."

Incorrect Answers:
A, B, C: The sales totals for the territories do not have to be consistent with the totals of the region.
D: There is no requirement that the projections should be positive and nonzero.

Q. 2
Which business rule is to be applied to correlate the territory and regional sales projections?

A. Territorial sales predictions should be equal to or greater than regional sales predictions.
B. Territorial sales must be equal to regional sales predictions.
C. Territorial sales should be less than or equal to regional sales predictions.
D. No business rule should be enforced
E. Values should not be zero

Answer: D.
Explanation: There are no business rules that should be applied to the sales projection application.

Note: The system analyst describes how the projection application would work: "The managers for the territories within a given region will then enter their projected sales forecasts. The sales totals for the territories do not have to be consistent with the totals of the region."

Incorrect Answers:
A, B, C: The sales totals for the territories do not have to be consistent with the totals of the region.
E: There is no requirement that the projections should be positive and nonzero.

Q. 3
Which business rule is to be applied if a territory manager fails to enter sales projection values?

A. The values are to be noted as missing.
B. Extrapolate values from previous month.
C. Record zeroes.
D. Use sales values if available.

Answer: A.
Explanation: The system shouldn't make assumptions or extrapolations from the data. Accuracy is of primary concern.

This requirement forces the data enter system either to accept the null data or require input. The system shouldn't approximate or extrapolate any input.

Note: The business analyst makes the following points: "Accuracy is much more important. Besides needing correct data, we need to understand what information we don't have. We do not want the system to make guesses in order to hide data issues."

Incorrect Answers:
B: The system shouldn't extrapolate any input.
C: The system shouldn't make assumption on the input.
D: The system must record accurate data. Using the estimated sales values instead of the actual data would be a bad idea.

Q. 4
Which business rule is to be applied if a territory manager fails to enter sales projection values?

A. Use actual figures.

B. Use last months projected figures.
C. Report that values are missing.
D. Insert zero values.

Answer: C.
Explanation: The system shouldn't make assumptions or extrapolations from the data. Accuracy is of primary concern.

This requirement forces the data enter system either to accept the null data or require input. The system shouldn't approximate or extrapolate any input.

Note: The business analyst makes the following points: "Accuracy is much more important. Besides needing correct data, we need to understand what information we don't have. We do not want the system to make guesses in order to hide data issues."

Incorrect Answers:
A: The system must record accurate data. We cannot use approximations.
B: The system shouldn't extrapolate any input.
D: The system must record accurate data. Using the estimated sales values instead of the actual data would be a bad idea.

Q. 5
At a non English-speaking subsidiary, localized text for an SKU's may be missing sometimes. What should the system do? (Choose two.)

A. Hide the record.
B. Substitute the string with the ID.
C. Log an error to the administrative system.
D. Cancel the processing until the problem is rectified.
E. Show the English string.

Answer: C, E.
Explanation: The localization of text starts out with English descriptions filled in. The subsidiaries will eventually make localization to their native languages.

When the system recognize that English text and not the native language is used it should log an error and show the already present English text string.

Incorrect Answers:

A: Hiding the record would be unwise. The information in the record can still be used.
B: An English text string is already present. There is no need to substitute the localized string with the ID.
D: An English text string is already present. The system will function even though a localized string isn't present.

Q. 6
All of the locations report their financial data in local currency. This presents a problem for the Financial Analyst. How should the exchange rate be provided?

A. Convert using a daily rate for all at same time once a day at HQ.
B. Convert using a weekly average.
C. Convert using a monthly average.
D. Convert using the year-to-date average.

Answer: A.
Explanation: The exchange rate must be applied on a daily basis.

Note: The Business Analyst makes the following requirement of the new system: "Because of fluctuations in currency values, the currency conversions must be done on a per-day basis."

Incorrect Answers:
B, C, D: The exchange rate must be applied on a daily basis.

Q. 7
How should the currency conversion system establish the exchange rate for each sub?

A. Exchange rate for each sub should be established when data is aggregated.
B. Exchange rate for all subs should be established simultaneously.
C. Exchange rate for each sub should be established at the beginning of the sub.
D. Set the exchange rate at the end of the day obtained from office.

Answer: D.
Explanation: Because of fluctuations in currency values Hanson Brother requires that currency conversions must be done on a per-day basis.

Incorrect Answers:
A, B; C: Currency conversions must be done on a per-day basis.

Q. 8
If data for any item is not entered, what should be done?

A. A value of 0 should be used
B. A value of 1 should be used
C. Data values should be extrapolated from previous months
D. Send the data back to the sub until it is complete

Answer: D.
Explanation: The system shouldn't make assumptions or extrapolations from the data. Accuracy is of primary concern.

This requirement forces the data enter system either to accept the null data or require input. The system shouldn't approximate or extrapolate any input.

Note: The business analyst makes the following points: "Accuracy is much more important. Besides needing correct data, we need to understand what information we don't have. We do not want the system to make guesses in order to hide data issues."

Incorrect Answers:
A: The data entry system should not make assumptions. Accuracy of the data is more important.
B: The data entry system should not make assumptions. Accuracy of the data is more important.
C: The system shouldn't make guesses to hide data issues.

Q. 9
If data for a particular region cannot be attained what should be done?

A. Zeros should be inserted
B. User should be notified
C. All data should be leveled
D. Data should be extrapolated

Answer: B.
Explanation: The system shouldn't make assumptions or extrapolations from the data. Accuracy is primary concern.

Note: The business analyst makes the following points: "Accuracy is much more important. Besides needing correct data, we need to understand what information we don't have. We do not want the system to make guesses in order to hide data issues."

Incorrect Answers:
A: The system shouldn't make assumptions or extrapolations from the data
C: The system shouldn't make assumptions or extrapolations from the data
D: The system shouldn't make extrapolations from the data

Q. 10
When should the exchange rate be applied to currency values?

A. When each sub's data is loaded
B. All the data daily at the same time at HQ
C. Weekly
D. Monthly

Answer: B.
Explanation: The exchange rate must be applied on a daily basis.

Note: The Business Analyst makes the following requirement of the new system: "Because of fluctuations in currency values, the currency conversions must be done on a per-day basis.".

Incorrect Answers:
A: This level of accuracy is not required. It would be a unnecessarily complex and costly solution.
C: The exchange rate must be applied on a daily basis.
D: The exchange rate must be applied on a daily basis.

Q. 11
A set of sales data for a sub might be unavailable because of system or network failure. How should the data consolidation subsystem resolve this situation?

A. All other data should be leveled appropriately.
B. Missing data should be noted to the user.
C. Zeros should be recorded.
D. Missing data should be extrapolated.

Answer: B.
Explanation: The system shouldn't make assumptions or extrapolations from the data. Accuracy is of primary concern.
The data consolidation subsystem should not make any assumptions or try to extrapolate the data.

Note: The business analyst makes the following points: "Accuracy is much more important. Besides needing correct data, we need to understand what information we don't have. We do not want the system to make guesses in order to hide data issues."

Incorrect Answers:
A: The data consolidation subsystem should not make changes to the existing data. This would destroy its accuracy.
C: Recording zeroes would make the data inaccurate.
D: The data consolidation subsystem should not extrapolate the data.

Case Study No: 2

CONTOSO INVENTORY SYSTEM

Background:
Contoso is a document archive company that stores boxes of documents and business papers for its customers. Contoso has created a logical design for an inventory control system that will be used to track the location of these boxes of documents. In this case study, a box of documents will be referred to as an Item. Contoso hopes to sell this inventory control system to other document archive companies; consequently, Contoso has placed restrictions on the technology that can be used to construct the inventory control system.

System requirements:

Background:
Contoso or the document archive companies who purchase its inventory control system will maintain the system. Contoso cannot attract, hire or retain highly skilled professional developers. The system architecture must be kept simple.
The inventory control system consists of three major functional components: the Database, the warehouse component, and the Business Office component.

Requirements:

- The inventory control system must use the Microsoft SQL Server DBMS.
- The bar code processing application and the business office application must both be written in Microsoft Visual Basic.
- Contoso does not want transaction management software or Web systems.
- Business rules must be stored in a single location as much as possible.

Inventory Requirements:

- The inventory control system must track the location of each Item in the Warehouse.
- Each Item must have one or more bar codes, each of which will have a unique number.
- The inventory control system must manage 10 Million Items.
- An Item will average five Location changes while it is in the Warehouse.
- Each shelf must be labeled with a unique location number.
- Each shelf can hold one or more Items.
- The inventory control system must provide quick access to the shelf location for each Item.

- The inventory control system must provide a history of all changes in the location of an Item while the Item is in the Warehouse.

Warehouse Requirements:

- A bar code reader must be used to track the movement of Items within the Warehouse.
- The physical structure of the Warehouse makes radio-frequency bar code readers impractical.
- The bar code Reader must store the Item Number, the Location Number and the Date and Time of the last move.
- The bar code reader must store the Item Information and the Location Information until the information is uploaded into the Database.
- The bar code Processing Application must support up to 20 concurrent bar code Readers.
- The database must record all movements of an Item in the Warehouse

Business Office Requirements:

Background:
The Business Office user processes orders from Contoso's customers. Customer orders consist of request for the pickup of Items from the customer, delivery of Items to the customer, and an inventory of the customer's Items in the Warehouse.

Requirements:

- The Business Office Application must provide an on-screen or printed inventory of Items for each customer.
- The Application must provide an on-screen or printed physical location of the items for each customer.
- The Application must provide a method of scheduling the return of an Item from the Warehouse to the customer.
- The Application must support up to 10 concurrent users.

Proposed Database Tables:

Customers: contains information about the owner of item.
Items: contains information about an Item in Warehouse.
Locations: contains information about the various shelves in the Warehouse.
ItemNumbers: contains information about the bar codes assigned to an Item.
I**temLocationHistory**: contains information about the history of an Item's Location.

QUESTIONS ***Contoso Inventory System***

Q. 1
Specify the primary key, foreign key or keys, and other attributes of each entity.

Answer:

Specify the primary key, foreign key or keys, and other attributes for each entity. Move the appropriate attributes to each each entity. (Use only attributes that apply. You might need to reuse attributes.)

Entities

- Customer
  - Primary Key
    - CustomerID
  - Foreign Key(s)
  - Other Attributes
    - Name
- Item
  - Primary Key
    - ItemID
  - Foreign Key(s)
    - CustomerID
    - LocationID
  - Other Attributes
    - ContentsDescription
- Locations
  - Primary Key
    - LocationID
  - Foreign Key(s)
  - Other Attributes
    - LocationBarcode
    - Location
- ItemNumbers
  - Primary Key
    - ItemNumberID
  - Foreign Key(s)
    - ItemID
  - Other Attributes
    - BarCodeNumber
- ItemLocationHistory
  - Primary Key
    - ItemLocationHistoryID
  - Foreign Key(s)
    - ItemID
    - LocationID
  - Other Attributes

Collapse

<<Move

Remove>>

Attributes

- Location
- Name
- ItemNumberID
- BarCodeNumber
- ContentsDescription
- LocationID
- ItemID
- LocationBarcode
- CustomerID
- ItemLocationHistoryID

Comments:

To answer this question drawing an entity-relationship diagram helps.

Usually the first step in a logical database design is to identify the entities, or tables, of the database. This is already done in this scenario.

We are required to do the following:

1. Identify the Primary Key of each table.
   This is not so hard since mostly the name of primary key is similar to the name of table and often ends with **ID**. In the diagram above the primary keys are in bold, for example CustomerID.
2. Identify relationship between the tables. In this question this translates to finding the correct foreign keys.
   In the diagram above the relations are denoted with 1-to-many lines. The foreign key is found at many-side of the line.
3. Decide in what table, if any, other attributes (or fields or columns) should be placed.

Foreign keys. We analyze one relation at a time.

Customer and Item

Customer orders Items. Each customer can order several items. There is a one to many relation between the Customer table and the Item table. We must add a foreign key constraint on the Item table referencing the Customer table. We use an attribute (field/column) with the same name as the primary key in the Customer table, customerID, to the Item table.

Item and Itemnumber

Every item can have several item numbers. There is a one-to-many relation between item and item numbers. We add a column ItemID to the ItemNumbers table as a foreign key to the Item table.

Item, Locations and ItemLocationHistory

First we consider the two tables Item and Locations with no time factor. Every location can contain many item, but one item can only be located at location. We must use one-to-many relation from the Location table to the Item table.
Next we consider the time factor as well. Every item can have been located at many locations during its history. Every location can contain many Items. There is a many-to-many relation between the Item table and the Locations table when the time factor is consider. Most Relational Database Management Systems (RDBMs) don't support many-to-many relations. A many-to-many relation can be implemented by two one-to-many relations. A new table is also required.

In our scenario we solve this by:
1. Adding a new table ItemLocationHistory
2. Add a new column LocationID to this table with a foreign key constraint to Location table.
3. Add a new column ItemID to this table with a foreign key constraint to Item table.

Note: we cannot use a composite primary key of the LocationID and the ItemID, since an item could be present at allocation at different times.

There is a one-to-many relation between the Item table and the ItemLocationHistory history table. We must add a column ItemID to the ItemLocationHistory with a foreign key constraint referencing the Item table.

Other attributes
We analyze attributes one by one.
Location Each location should be named. Add the location attribute to the Locations table.
Name Each customer has a name. It should be added to the Customer Table.
ItemNumberID Already used as primary key in the Item Number Table
BarCodeNumber The ItemNumber table contains information about the bar codes assigned to an Item. This attribute should be added to the ItemNumber table.
ItemDescription Describes the item and should be placed in the Item table.
LocationID Already used as primary key in the Location Table
ItemId Already used as primary key in the Location Table
LocationBarcode. Each shelf must be labeled with a unique location number. Using a LocationBarcode, stored in the Location table, would help automate the handling of the items.
CustomerID Already used as primary key in the CustomerID Table
ItemLocationCustomerID This attribute is not needed.

Q. 2
Construct a high level database model for the inventory control system

Answer:

Comments:

To answer this question drawing an entity-relationship diagram helps.

We must identify relationship between the tables. In this question this translates to finding the correct foreign keys.

In the diagram above the relations are denoted with 1-to-many lines. The foreign key is found at many-side of the line.

We analyze one relation at a time.

Customer and Item
Customer orders Items. Each customer can order several items. There is a one to many relation between the Customer table and the Item table.

Item and Itemnumber
Every item can have several item numbers. There is a one-to-many relation between item and itemNumbers.

Item, Locations and ItemLocationHistory
First we consider the two tables Item and Locations with no time factor. Every location can contain many item, but one item can only be located at location. We must use one-to-many relation from the Location table to the Item table.
Next we consider the time factor as well. Every item can have been located at many locations during its history. Every location can contain many Items. There is a many-to-many relation between the Item table and the Locations table when the time factor is consider. Most Relational Database Management Systems (RDBMs) don't support many-to-many relations. A many-to-many relation can be implemented by two one-to-many relations. A new table is also required.

In our scenario we solve this by:
1. Adding a new table ItemLocationHistory
2. Add a new column LocationID to this table with a foreign key constraint to Location table.
3. Add a new column ItemID to this table with a foreign key constraint to Item table.

Note: we cannot use a composite primary key of the LocationID and the ItemID, since an item could be present at allocation at different times.

There is a one-to-many relation between the Item table and the ItemLocationHistory history table. We must add a column ItemID to the ItemLocationHistory with a foreign key constraint referencing the Item table.

Q. 3
Construct a Data Flow Diagram for the Inventory Control System

Answer:

Comments:

Item and location bar code data: First flows from the Bar Code Reader to the Bar Code Processing Application. It then flows from the Bar Code Processing Application to the Inventory Database where it is stored.
Customer Inventory: Flows from the Inventory Database to the Business Office Application.
Item Location: Flows from the Inventory Database to the Business Office Application.
Item Return: This is returned goods from customers. It flows from the Business Office Application to the Inventory Database.

Case Study No: 3

FABRIKAM, INC.'S COST TRACKING SYSTEM

Background:
Fabrikam wants to automate the way it tracks lumber manufacturing costs, from the time the lumber is purchased until it is sold. These costs include the purchase price of the raw material, along with machine and labor costs accrue in processing the lumber.

Business Overview:
Fabrikam buys green board lumber from lumber mills, then receives, moves, stacks, dries, planes, rips, and chops the lumber. After each process, the resulting pieces of lumber are given new inventory part numbers and can be sold.

Buying:

Fabrikam buys all lumber directly from lumber mills. Purchase orders are created that indicate:

- the lumber mill address.
- the Fabrikam ship to address,
- the Fabrikam bill to address,
- the date of the purchase order, and
- the employee placing the purchase order.

A purchase order must be created prior to recieving any lumber. Apurchase order includes one or more purchase order lines. Each purchase order line indicates:

- the total number of board feet
- the species of lumber being purchased
- an expiration date of the line

Job Overview:

Overview:

Once lumber arrives at a Fabrikam receiving dock, the lumber has many jobs performed on it. Each job performs one process on the lumber.

All jobs note:

- the type of process performed,
- the part number of the lumber going into the job,
- the date of the job, and
- the part number of the lumber coming out of the job.

Job Costs:
Each time the lumber has a job performed on it, the lumber accrues many costs that stay with it until it is sold.

Receiving yard workers note the purchase price of the lumber on a receiving ticket line when the lumber arrives.

Each job adds additional machine run time and labor costs, both of which are tracked in detail. All jobs require labor, but not all jobs require machines.

Job cost details note:

- the employees and any machines used in the job,
- the minutes used for each employee and any machines used in the job, and
- the per-minute rate for each employee and any machines used in the job.

Job Example:
The following describes an actual job. Job number 14566 performs a stacking process on part number G9684RO, which becomes part number S9684RO after the job is completed.

The following resources are used on the job:

- Joe spends five hours at rate of $13.00 per hour
- Bob spends two hours at a rate of $24.00 per hour
- Forklift number one is used for two hours at a rate of $.60 per hour
- Stacker Machine number five is used for five hours at a rate of $.25 per hour.

Processes:
Currently Fabrikam has receiving, moving, stacking, drying, planning, ripping, and chopping processes. From time to time, Fabrikam adds or drops processes, depending on market demand for different product types.

All processes are identified by:

- unique process code,
- description,
- purpose, and
- status of the process, indicating whether it is an active or inactive process.

Many locations within the Fabrikam plant receive purchased lumber.

Upon receipt, a receiving ticket is created that notes:

- the date of receipt.
- the person receiving.
- the lumber mill received from.
- the Fabrikam location received to, and
- the Fabrikam purchase order number that the lumber was ordered from.

Lumber cannot be received unless a purchase order for the lumber exists. Workers might receive many shipments before a purchase order is filled. Also, a receiving ticket includes one line per species of lumber that notes the total board feet and the total price for each species. Receiving lumber accrues costs on a receiving ticket line. Receiving costs consists of the employees used and the labor costs incurred to create the receiving ticket. No machine costs or run-time costs are incurred in the process of receiving lumber

Other processes begin with lumber begin moved out of inventory and into the process. All processes end with lumber begin moved out of the process and back into inventory, so moving lumber is considered a process in itself. Moving any lumber records the location that the lumber is moved from and the locations that the lumber is moved to. Moving lumber accrues costs on a receiving ticket line. Costs consist of the machines, run-time costs, employees, and the labor costs involved in the moving process.

Machines:
Fabrikam uses many machines in processing lumber. Many of the machines are multifunctional and can be used for different processes. The cost of using a machine can differ depending on the process for which it's used. All run-costs are allocated on a per-minute basis to the jobs in which the machines are used. Fabrikam has calculated the cost associated with each minute of use for each of the machines at Fabrikam when used for a specific process.

Each machine is also described by:

- a unique machine number,
- manufacturer,
- purchase date,
- serial number,
- model number
- description, and
- status, indicating whether the machine is available for use.

Labor:

Fabrikam has more than 1,000 employees. When employees participate in a job, their pay rate is convicted to a per-minute rate and allocated as a cost to the job.

Each employee is also described by:

- a unique employee number,
- full name,
- address,telephone number,
- date of hire, and
- a status to indicate whether they are active, retired, fired, or temporary unavailable.

The team has determined that there are 8 critical tables:

Purchase Order,
Purchase Order Line,
Job,
Job Machine Cost,
Job Employee Cost,
Process,
Machine Process Cost,
Machine.

There are some other tables that will need to be created but are not as critical to the process. They are Employee, Lumber Mill, Bill to Address, and Ship to Address.

QUESTIONS ***Fabrikam, Inc.'S Cost Tracking System***

Q. 1

Answer:

Comments

To find the answer to this question we should draw an entity-relationship diagram.
Here is a diagram of the three tables and the related tables.

The lines are one-to-many relations. The many side ends on a foreign key.

Note: The complete diagrams would look something like:

Diagram 8 main tables.

Diagram all tables

Job Machine Costs
Job Machine Cost Key
Job Key
Machine Key
Rate per minute
Minutes Used
Receiving Ticket Line
Receiving Ticket Line Key
Employees
Employee Key
Job Employee Costs
Job Employee Cost Key
Employee Key
Job Key
Rate per minute
Minutes Used
Jobs
Job Key
Process Key
Receiving Ticket Line key
Part Number out of Job
Part Number into Job
Date
Machines
Machine Key
Seriel Number
Manufacturer
Purchase Date
Model Number
Status
Description
Processes
Process Key
Status
Description
Purpose
Lumber Mill
Lumber Mill
PurchaseOrder
Purchase Order Key
Lumber Mill Key
Ship to Adress Key
Bill to Address Key
Employee Key
Purchase Date
Purchase Order Number
Ship to Address
Ship to Address Key
Bill to Address
Bill to Address Key
PurchaseOrderLines
Purchase Order Line Key
Purchase Order Key
Total Number of Board Feed
Lumber Species
Line Experiation Date
Machine Process Cost
Machine Process Cost key
Process Key
Machine Key
Per-minute cost

Q. 2

Specify the primary key, foreign key or keys, and other attributes for each entity. Move the appropriate attributes to each each entity. (Use only attributes that apply. You might need to reuse attributes.)
Entities
Attributes
Collapse
Processes
Primary Key
Foreign Key(s)
Other Attributes
MachineProcess Rates
Primary Key
Foreign Key(s)
Other Attributes
Machines
Primary Key
Foreign Key(s)
Other Attributes
<<Move
Remove>>
Serial Number
Manufacturer
Status
Purchase Date
Machine Process Rate Key
Description
Purpose
Process Key
Per-minute Cost
Model Number
Machine Key

Answer:

To find the answer to this question we should draw an entity-relationship diagram.
Here is a diagram of the three tables.

For a diagram over all the tables see note to first question.

Q. 3

Specify the primary key, foreign key or keys, and other attributes for each entity. Move the appropriate attributes to each each Entity. (Use only attributes that apply. You might need to reuse attributes.)
Entities
Attributes
Collapse
PurchaseOrder
Primary Key
Foreign Key(s)
Other Attributes
PurchaseOrderLines
Primary Key
Foreign Key(s)
Other Attributes
<<Move
Remove>>
Line Experiation Date
Purchase Order Line Key
Purchase Order Key
Employee Key
Lumber Mill Key
Total Number of Board Feed
Ship to Address Key
Bill to Address Key
Lumber Species
Purchase Date
Line Sequence
Purchase Order Number

Answer:

Comments:

To find the answer to this question we should draw an entity-relationship diagram.
Here is a diagram of the two tables. The related tables are shown as well.

For a diagram over all the tables see note to first question.

Case Study No: 4

WOODGROVE BANK

Background:
Woodgrove Bank is a small regional bank that runs most of its financial applications on a mainframe computer. The current Accounts Payable (AP) application is a packaged client/server application that must use MS Windows 3.1 as the client operating system.

The current AP application uses an older version of MS SQL Server as the database software. The old version of MS SQL Server is not certified to run on MS Windows NT 4.0. The current client computers have 8MB of memory. The AP department receives paper invoices from many different vendors. The format of the paper invoices varies widely.

Problem Statement:
Woodgrove Bank wants to upgrade and enhance its Account Payable (AP) application.

Proposed Solution:
Woodgrove Bank will upgrade the packaged client/server application to the new version, 5.0. Version 5.0 is certified to operate on only a 32-bit MS Windows client computer operating system, and on the latest release of MS SQL Server. Version 5.0 will also require more memory on the client computers. Both the current and new versions (5.0) of the Accounts Payable (AP) application use ODBC to connect to the database.

Interfacing Systems:

General Ledger (GL):
The new Accounts Payable (AP) application must feed transactions to the General Ledger (GL) system on a monthly basis.

Purchase Order (PO):
The Purchase Order (PO) system tracks the status of each purchase order. A purchase order's status can be either open or closed. The new Accounts Payable (AP) application must validate that the invoice has an open purchase order. The AP application must close the purchase order on the PO system when the full amount of the purchase order has been paid.

Check Issuance:
Once an invoice is approved for payment, the new Accounts Payable (AP) application must transfer data to the Check Issuance system.

Data Warehouse:
The new Accounts Payable (AP) application must update the Data Warehouse system on a daily basis.

Users:

User Profile:
Typical users have minimal exposure to the MS Windows environment. They are bit temperamental, and their willing acceptance of this new system will strongly impact the success of the implementation.

Resource Requirements:
Twenty Accounts Payable (AP) processors each handle an average of 15 invoices per day. They can barely keep up with the invoice activity for the existing business load. A new branch that is opening soon will increase the workload by 50 percent. The average AP processor earns $40,000 per year.

Security Requirements:
There are three job types in the Accounts Payable (AP) department: supervisor, proofer and processor. The processors enter the invoice data into the AP system. Managers outside of the AP department approve the invoices. The processors must make sure the manager has approved the invoice prior to processing the invoice. The proofers and supervisors review the invoices and data for accuracy. Only supervisors can post the invoices in the AP system.

Requested Accounts Payable (AP) Enhancements:

Payment Term Saving:
Some of Woodgrove Bank's vendors discount the invoice amount if the invoice is paid early. The Accounts Payable (AP) department manager estimates that 30 of the vendors offer these terms. Each vendor bills an average of $25,000 per year to Woodgrove Bank. In almost all cases the discount is five percent. The AP department manager suggested adding a feature that would allow the early payment of these invoices.
Cost to implement: $40,000

Invoice Approval by E-Mail:
This feature would automate the approval of invoices. When an invoice is first entered into the system, the system will automatically send e-mail message to the appropriate manager requesting approval to pay the invoice. The manager will respond via e-mail and the system will update the invoice automatically as approved for payment. Currently, the Accounts Payable (AP) processors send a fax to the manager for approval, and update the invoice manually once it is approved. This feature would double the number of invoices an AP processor could handle in a day.
Cost to implement: $100,000

Audit Control for Lost Invoices:
This feature would virtually eliminate the problem of invoices being lost. Currently, about one percent of invoices are lost. As a result, these invoices are paid late. The average late fee is $10.
Cost to implement: $20,000

QUESTIONS *Woodgrove Bank*

Q. 1
Which factors are most important to consider for the maintainability of this system?

A. number and location of client computers, and location of technicians who configure client computers
B. location of servers, and location of network administrators
C. location of database, and location of database administrators
D. location of Web server, and location of Web server administrators

Answer: A.
Explanation: The availability of the client computers is the most crucial factor in this project.

Incorrect Answers:
B: The location of the database and the database servers is the main concern. Not the physical location of servers and network administrators. This is a database project.
C: The location of the database and the database administrators is not the most crucial part of this project.
D: No Web server will be used in this scenario.

Q. 2
Which of the following are most important when merging the new accounts payable system with the General Ledger System?

A. General Ledger data format
B. Platform of General Ledger
C. Location of General Ledger
D. System requirements of the accounts payable system
E. ODBC requirements

Answer: A, B.
Explanation: The single most important factor when merging the new and the old system is interoperability. Transactions from the new AP application must be transferred to the General Ledger system. In order to implement this the General Ledger data format and platform are crucial.

Note: The new Accounts Payable (AP) application must feed transactions to the General Ledger (GL) system on a monthly basis.

Incorrect Answers:

C: The physical location of the General Ledger application is less important. The transactions from the AP application will only be run on the General Ledger system once a month.

D: System requirement for the AP system is import for the operation of the AP system itself but is not important for the General Ledger System.

E: The transactions from the AP application will only be run on the General Ledger system once a month. ODCB interoperability might not be required.

Q. 3

Which AP enhancement should be implemented first based on return of investment?

A. Invoice approval by e-mail
B. Payment term savings
C. Audit control for lost invoices

Answer: A.

Explanation: Invoice approval through E-Mail would double the number of invoices an Account Payable Processor can handle in a day. This cost 40,000$ to implement but the average AP Processor earns 40,000$ a year so the benefit is substantial.
The workload will increase by 50% in the near future.

Incorrect Answers:

B: Early payment term savings would save: $25,000 (average bill per vendor and year) * 30 (number of vendors) * 5% (discount for early payment) which equals 37,500$ per year. Invoice approval by e-mail would save more per year if at least two AP Processor workers are employed, which seems more than likely.

C: Audit control for lost invoices would only 10$ would be saved on every invoice that are paid late. Only 1% of the invoices are lost and this enhancement costs 20,000$ so this will not save as much money as invoice approval by e-mail enhancement.

Q. 4

Which of the existing systems requires data to be sent both to and from the new Accounts Payable system?

A. General Ledger
B. Purchase Order
C. Check Issuance
D. Data Warehouse

Answer: B.
Explanation: The Purchase Order (PO) system tracks the status of each purchase order. It must use information from the Account Payable system.
Accounts Payable (AP) application must validate that the invoice has an open purchase order. The AP application must close the purchase order on the PO system when the full amount of the purchase order has been paid.

Incorrect Answers:
A: The General Ledger system will just be feed transactions from the Accounts Payable system once a month. This is only one-way communication.
C: Once an invoice is approved for payment, the new Accounts Payable (AP) application must transfer data to the Check Issuance system. The Check Issuance system will not send data to the Accounts Payable system.
D: The new Accounts Payable (AP) application must update the Data Warehouse system on a daily basis. Information from the Data Warehouse system will not be copied to the Accounts Payable system.

Q. 5

Select only the actions that should be included in a feasible, safe deployment of the new system. Move the tasks from the Deployment Tasks pane to the Ordered List of Tasks pane, and arrange them in the appropriate order (Use only tasks that apply)

Ordered List of Tasks

Deployment Tasks

- Upgrade the old MS SQL Server to the new server version.
- Enable the new features of the AP application.
- Install MS Internet Explorer on the client computers.
- Deploy both the upgraded AP applications into production with the new features disabled.
- Install the new version of MS SQL Server on a new server.
- Copy the database object from the old server to the new server.
- Install MS IIS on a new server.
- Upgrade the memory on the client computers.
- Upgrade the client computers to MS Windows 95.
- Update the Data Source Name to point to the new server.
- Deploy both the upgraded AP application and the new features into production

<<Move

Remove>>

Answer:

Comments:
First we should upgrade the SQL Server in a secure way.

1. Install the new version of MS SQL Server on a new Server
2. Copy the database object from the old server to the new server

Then we must upgrade the clients.

3. Upgrade the memory on the client computer
   The client's hardware must be upgraded so they can run the software.
4. Upgrade the client computer to MS Windows 95

We must set up an ODBC data source. We use a Data Source Name.
5. Update the Data Source Name to point the new server

Finally we deploy the new AP application in a safe way.

6. Deploy both the upgraded AP application into production with new features disabled
7. Enable the new features of the AP application

Incorrect Answers:
IIS and Internet Explorer are not used in this database application.
There is no requirement to use the old SQL Server computer. We don't have to upgrade it.

Case Study No: 5

DULUTH MUTUAL POLICY MANAGEMENT SYSTEM

Background:
Duluth Mutual Life is an insurance company that sells personal automobile insurance. Duluth Mutual Life manages its personal automobile insurance data on a mainframe computer.

Problem Statement:
Duluth Mutual Life's policy management system has outgrown its mainframe computer. The system working about three times per week, causing downtime for the users. Duluth Mutual Life wants to replace the mainframe computer with a new system that uses relational database technology.

The budget for this project is set and cannot be increased. The design of the system should solve the business requirements stated here, and should not include any extra data elements or features.

Business Analyst:
The policy is our main piece of data. Each policy can cover multiple vehicles. For example, a policyholder might own two vehicles. Both of these vehicles would be covered by one policy. A policy can also cover multiple drivers. For example, a husband and wife might own one car. Both the husband and wife would be covered by one policy.

To take this even further, a family of three might share two cars. The family of three and the two cars would be covered by one policy. The system will need to validate that only one active policy exists for each driver and vehicle. In other words, a vehicle cannot be insured under more then one active policy, and a driver cannot be insured under more than one active policy.

We also need to track the effective date and the termination date for each policy, as well as the current status of the policy. When the user has entered all of the data, the user should have to direct the system to calculate the premium. Once all of the data is entered and the premium is calculated, the user should direct the system to generate a confirmation letter to the policyholder. The confirmation letter should include all of the information that we have in file.

Business Rule Number One:
Duluth Mutual Life charges the customer a premium for the insurance policy. The policy premium is calculated based on the number of drivers per vehicle, and on specific characteristics for each driver. The driver characteristics that are used to calculate the premium include the number of driving violations, the number of years licensed, and the age of the driver.

We will need to keep track of the specific violations that a driver has committed. The insurance agent enters the violation data for each driver when the policy is set up. A specific violation counts against a driver until three years after the violation date. The motor vehicle registration office sends Duluth Mutual Life a master file of all the possible violation codes, along with a description of each violation.

The number of insured vehicles affects the policy premium. The vehicle characteristics that affect the policy premium include the vehicle's value, year, make, and model. The vehicle manufacturer assigns a unique identification number to each vehicle. The identification number is common called the VIN or Vehicle Identification Number. The VIN is different from the vehicle's license number.

Business Rule Number Two:
Drivers can be excluded from driving a specific vehicle. Suppose a wife, husband, and 16-year-old son own a station wagon, a truck, and an expensive sports car, but the son has two speeding violations. The policyholder might want to exclude the son from driving the sports car. The policyholder would be decreasing the number of drivers on one car, and excluding a high-risk driver from driving an expensive car. All drivers must be explicitly associated with cars that they can drive and cars that they are excluded from driving.

QUESTIONS *Duluth Mutual Policy Management System*

Q. 1
Choose the tasks that must be included in the user interface for creating a new policy, and place them in most logical order.

Initiate the entry of policy information.
Assign drivers to vehicles, and exclude drivers from vehicles.
Add a policy to a vehicle.
Initiate calculation of the premium.
Enter the vehicle information.
Enter the violation data for drivers.
Add additional equipment to a policy.
Enter the driver information.
Assign violations to policies.
Generate a confirmation letter.
Send the violation data to the motor vehicle registration office.
Assign violations to vehicle.

Answer:

1. Initiate the entry of policy information
2. Enter Driver Information
3. Enter Vehicle Information
4. Enter the violation data for drivers. Enter Driver Violations
5. Add drivers to vehicles and exclude drivers from vehicles
6. Initiate calculation of premium
7. Generate confirmation letter

Comments:
When the user has entered all of the data, the user should have to direct the system to calculate the premium. Once all of the data is entered and the premium is calculated, the user should direct the system to generate a confirmation letter to the policyholder. The confirmation letter should include all of the information that we have in file.

The actual task of assigned the policy is implicitly performed when the calculation of the premium is made. It doesn't have to be done explicitly as a task.

Q. 2
Specify the primary key, foreign key or keys, and other attributes for each entity.

Entities	Attributes
Driver	Date Licenced
.. ■ Primary Key	Violation Code
.. ■ Foreign Key(s)	Excluded Driver First Name
.. ■ Other Attributes	Excluded Driver Flag
Violation Code Master List	Driver Violation Key
.. ■ Primary Key	Violation Description
.. ■ Foreign Key(s)	Violation Code Master List Key
.. ■ Other Attributes	Last Name
Driver Violations	First Name
.. ■ Primary Key	Number of Driver Violations
.. ■ Foreign Key(s)	Vehicle Driver Key
.. ■ Other Attributes	Policy Key
Vehicle Driver	Birthdate
.. ■ Primary Key	Driver Key
.. ■ Foreign Key(s)	Violation Date
.. ■ Other Attributes	Number of Vehicle
	Vehicle Key

Answer:

Driver
- Primary Key
  - Driver Key
- Foreign Key(s)
  - Policy Key
- Other Attributes
  - Date Licensed
  - Last Name
  - First Name
  - Birthday

Violation Code Master List
- Primary Key
  - **Violation Code Master List Key**
- Foreign Key(s)
- Other Attributes
  - Violation Code
  - Violation Description

Driver Violations
- Primary Key
  - **Driver Violation Key**
- Foreign Key(s)
  - Driver Key
  - Violation Code Master List Key
- Other Attributes
  - Violation Date

Vehicle Driver
- Primary Key
  - **Vehicle Driver Key**
- Foreign Key(s)
  - Driver Key
  - Vehicle Key
- Other Attributes
  - Excluded Driver Flag

Comments:

To find the answer to this question start by writing an entity-relationship diagram. Here is one over the four tables of this question.

Here is diagram over the whole database. It would like something like this.

Violation Code Master List
Violation Code Master List Key
Violation Code
Violation Description
Driver Violations
Driver Violation Key
Driver Key
Violation Code Master List Key
Violation Date
Driver
Driver Key
Policy Key
Date Licensed
Last Name
First Name
Birthday
Vehicle Driver
VehicleDriver
Driver Key
Vehicle Key
Excluded Driver Flag
Policy
Policy Key
Policy Effective Date
Policy Expiration Date
Policy Status
Policy Number
Premium
Number of Vehicle
Vehicle
Vehicle Key
Policy Key
Value of Vehicle
Year
Make
Model
VIN

Q. 3
Specify the primary key, foreign key or keys, and other attributes for each entity.

Entities	Attributes
Policy	Claim Date
.. ■ Primary Key	Policy Number
.. ■ Foreign Key(s)	Driver Key
.. ■ Other Attributes	Excluded Driver First Name
Vehicle	Policy Key
.. ■ Primary Key	Vehicle Driver Key
.. ■ Foreign Key(s)	Year
.. ■ Other Attributes	Model
Driver	Policy Expiration Date
.. ■ Primary Key	Vehicle Key
.. ■ Foreign Key(s)	Last Name
.. ■ Other Attributes	First Name
Vehicle Driver	Number of Vehicle
.. ■ Primary Key	Policy Status
.. ■ Foreign Key(s)	Excluded Driver Flag
.. ■ Other Attributes	Value of Vehicle
	Date Licensed
	Birthdate
	Make
	Policy Effective Date
	VIN
	Premium
	Claim Status

Answer:

Policy
- Primary Key
  - **Policy Key**
- Foreign Key(s)
- Other Attributes
  - Policy Effective Date
  - Policy Expiration Date
  - Policy Status
  - Policy Number
  - Premium
  - Number of Vehicle

Vehicle
- Primary Key
  - **Vehicle Key**
- Foreign Key(s)
  - Policy Key
- Other Attributes
  - Value of Vehicle
  - Year
  - Make
  - Model
  - VIN

Driver
- Primary Key
  - Driver Key
- Foreign Key(s)
  - Policy Key
- Other Attributes
  - Date Licensed
  - Last Name
  - First Name
  - Birthday

Vehicle Driver
- Primary Key
  - **Vehicle Driver Key**
- Foreign Key(s)
  - Driver Key
  - Vehicle Key
- Other Attributes
  - Excluded Driver Flag

Comments:

Make an entity-relationship of the four tables in the questions. The lines denotes one-to-many relations. The many-side denotes a foreign key.

You could also add any tables linked to this table For a complete diagram check the comments on Q. 2.

Case Study No: 6

ENCHANTMENT LAKES CORPORATION'S TRAVELER DATABASE

Background:

Line of Business:
Enchantment Lakes Corporation provides a variety of corporate travel services. These include booking services for individual travelers, management of corporate meetings, and management of travel expenses.

This Project:
The company wants to consolidate information about reservation and invoicing into a Traveler database, in order to provide consolidated reports. Reservation information must be collected from three different computerized reservation systems (CRSs). Invoice information is stored in an accounting system that is named Travel Data System (TDS), which runs on a Unix-based minicomputer. Information must be collected from each CRS and from TDS, checked for completeness and accuracy, and consolidated in the Traveler database.

Current Business Process:

VP Sales
We need to provide reports that succinctly summarize important data. Data accuracy and completeness are of utmost importance.

Chief Information Officer (CIO):
When a traveler makes a reservation, a travel agent enters details into the CRS. A reservation typically includes two flights, outbound and return, and each flight includes at least one segment. When a traveler changes reservations, a travel agent updates the reservation in the CRS, issues a new ticket. Many customers want specific information stored with each reservation. For example, a consulting firm might want a project number associated with each flight segment.

A CRS provides complete access to data about individual reservations, but does not support queries across reservations. For example, we cannot query a CRS to get total spending by customer for flights from New York to London in the past three months.

Customer Travel Director:
Often somebody will book a trip and receive the tickets, but cancel the trip at the last minute. The tickets need to be refunded or exchanged, but they just end up in a file folder somewhere.

Current Environment:

Chief Information Officer (CIO):
The CRSs do not maintain historical data. 24 hours after a traveler's last flight,, all information about the reservation is discarded. Each CRS uses a different coding scheme to identify airlines, airports, hotels, and car rental agencies.

Database Administrator:
The company has implemented an enterprise database that runs on Microsoft SQL Server. All company applications use the same tables for common data customers, airlines, hotels, car rental agencies, airport locations, etc.

Director of Application Development:
Travel agents are rather inconsistent about entering reservation data. They often omit important items, or put terms into a comment field in the CRS. Because the data is in TDS originates from entries that were made in the CRS, the TDS data will reflect those same inaccuracies.

Proposed System:

Director of Application Development:
We need a system that will:

1- Capture data from each CRS and from TDS.
2- Transform the data to a standard data model.
3- Validate the data for completeness and accuracy.
4- Load the validated data into a Microsoft SQL Server database.
5- Match invoices to reservations.
6- Generate reports.

For each CRS, we will build a data collector application that will extract reservation data from the CRS and load it into a traveler-centered staging database. We will build another data collector application that will extract invoice data from TDS and load it into the same staging database.

A validation engine will read data from the staging database and check for accuracy and completeness. The validation engine will also translate CRS-specific codes for airlines, airports, hotels and car rental agencies to database keys from our Traveler database. Transactions and validations will be based on rules that are read from a rules database. Validation rules vary by customer and change frequently. We will need a rule editor.
The validation engine will pass invalid data to an exception handler. The exception handler will route invalid CRS data back to travel agent for correction at the host CRS. The exception handler will also route invalid TDS data to an accounting manager for correction in TDS. The validation engine will pass validated data to a data loader. The data loader will merge validated data into the Traveler database, matching invoices to reservations. Only validated data will be loaded into the Traveler database. Reports will be generated from data in the Traveler database.

QUESTIONS ***Enchantment Lakes Corporation's Traveler Database***

Q. 1
Associate business requirements with components that implement a solution to the requirements.

Components
- CRS Data Collector
- TDS Data Collector
- Data Validation Engine
- Data Validation Rule Editor
- Data Validation Exception Handler
- Data Loader
- Reports

Business Rules
Refund or exchange unused information
Ensure data accuracy and completeness
Get total spending by a customer for flights from New York to London over the past Three days
Route CRS data that fails validation back to a travel agent for correction
Provide reports that summarize important data
Support cusytomer-specific data validation rules which change frequently
Translate CRS-specific codes from airlines, airports, hotels, and car rental agencies to database keys from our Traveler database
Merge validated reservations data and invoicing data

Answer:

- CRS Data Collector
- TDS Data Collector
- Data Validation Engine
  Translate CRS-specific codes from airlines, airports, hotels, and car rental agencies to database keys from our Traveler database
  Ensure data accuracy and completeness
- Data Validation Rule Editor
  Support cusytomer-specific data validation rules which change frequently
- Data Validation Exception Handler
  Route CRS data that fails validation back to a travel agent for correction
- Data Loader
  Merge validated reservations data and invoicing data
- Reports
  Provide reports that summarize important data
  Get total spending by a customer for flights from New York to London over the past Three days

Business Rules
Refund or exchange unused information

Comments:
"Refund or exchange unused tickets" is not a business rule.

Q. 2
Draw a data flow from the CRS/TDS to the staging database.

Answer:

Comments:

CRS-->(CRS Data)-->**CRS Data Collector-->(**CRS Data)-->**Staging Database**
Reservation information is collected from three different computerized reservation systems (CRSs). For each CRS, the company will use a data collector application that will extract reservation data from the CRS and load it into a traveler-centered staging database.

TDS-->(TDS Data)-->**TDS Data Collector-->(**TDS Data)-->**Staging Database**
Invoice information is stored in an accounting system that is named Travel Data System (TDS). Another data collector application, the TDS Data Collector, will extract invoice data from TDS and load it into the same staging database.

Q. 3
Draw a data flow from the staging database to the generation of month end reports, including validation and exceptions.

Answer:

Comments:
From the staging database TDS data and CRS data is flowing to the Data Validation Engine:
Staging Database-->(TDS Data)-->Data Validation Engine
Staging Database-->(CRS Data) -->Data Validation Engine

Data Validation Rules are copied from the Data Validation Rules Database to the Data Validation Engine.
Data Validation Rules Database--> (Data Validation Rules) -->Data Validation Engine

Validated data flows from the Data Validation Engine to the Data Loader
Data Validation Engine --> (Validated Traveler Data) --> Data Loader

The validated data flows from the Data Loader to the Travelers Database
Data Loader --> (Validated Traveler Data) --> Traveler Database

Report data is produced by the Travelers Database and flows to the Monthly Reports
Traveler Database-->(Report Data)-->Monthly Reports

Exception Data flows from the Data Validation Engine to the Exception Handler
Data Validation Engine --> (Exception Data) --> Exception Handler

The Exception Handler forwards Non-validated to the TDS and the CRS.
Exception Handler--> (Non-Validated Data) -->TDS
Exception Handler--> (Non-Validated Data) -->CRS

Q. 4
Draw a data flow from the CRS/TDS to the generation of month end reports, including validation and exceptions.

Answer:

Comments: This is combination of the answers in **Q.** 3 and **Q.** 4.

Q. 5
Split business rules into the three categories.

Answer:

Comments:
A Domain in the relational database terminology is a column. Domain rules are column constraints.
Translation rules transform data.
Relational rules are more complex rules where data from different (at least two) tables are used to enforce the rule.

Case Study No: 7

GENERAL BUSINESS CONSULTANTS

Background:

Line of Business:
General Business Consultants provides customized marketing programs to customers.

This Project:
The scope of the Budgeting Tool project includes:

- Specifying a detailed description of a marketing program.
- Providing the customer with a price quote for the marketing program.
- Estimating the company's cost of producing the marketing program.

Company Organization:
Recently, the company has been aligned by major product line, by sales region, and by business unit. Within each alignment, each of the specification, price quoting, and cost estimating processes has varied from centralizing functions to assembling a team for each new customer. Each reorganization can drastically change the total number of users on the system, but the overall system functionality remains unchanged. This organizational structure is likely to change before the project is completed.

Current Business Process and Environment:

Specifications:
The sales organization communicates with customers to assess their needs. These needs are entered into the Work Order system. The marketing programs are then described in detail within the Work Order system. The system provides output to those who produce price quotes, cost estimates, and customer presentations. The output is provided in paper form.

Price Quotes:
Details of marketing programs are printed from the Work Order system and used as a basic for formulating price quotes. Price quotes are started within spreadsheet that are designed by the person who is doing the price quote. The price quote spreadsheets are printed, manually entered into the Price Quote system on a mainframe computer, and refined based on current market conditions.

Cost Estimates:

Details and price quotes of marketing programs are printed and used to formulate cost estimates. Cost estimates are organized in three categories labor, materials, and outside vendor purchases. Cost estimates within each category are created in detail. Cost estimating is done in spreadsheet applications with auto-calculation turned off. The person doing the cost estimating designs these spreadsheets. Cost estimates are then summarized by category printed and manually entered into the Actual Tracking system.

Actual Costs:
Detailed cost estimates from cost estimating spreadsheets are summarized by category, printed, and manually entered into the Actuals Tracking system. The Actuals Tracking system has the ability to store and track at a detailed level both cost estimates and price quotes, but currently it is used only for cost estimates. Labor, materials, and outside vendor costs incurred to produce a marketing program are entered into the Actuals Tracking system at the summary level.

Customer Presentations:
Marketing program details and price quotes are printed, typed up, organized, and consolidated by clerical staff to produce a customer presentation. The accounting staff reviews the first presentation and cost estimate for financial feasibility before the presentation goes to the customer. Through a series of customer presentations, the sales staff and the customer negotiate a complete marketing program. The complete program includes detailed specifications, price quotes, and scheduled delivery.

Negotiants:
During later stages of negotiations with a prospective customer, the sales organization often requests and expects to receive price quotes during a single phone conversation. These are commonly referred to as phone quotes. Many times a team works day and night when in final negotiations with the customer.

Employee Base Affected:
The geographic spread of company employees involved in this business process includes three regions. The Northern region is based in the Eastern time zone. The Midwest region is based in the Central time zone. The Western region is based in the Pacific Time zone. Each region has flex time for its employees, allowing normal start times no earlier than 6:00 a.m. and end times no later than 8:00 p.m.

Business Problem:

VP Sales:
Our slow response to a customer's Request for Proposal (RFP) causes us to lose opportunities. Our competitors are taking market share through faster responses to prospective customers. Many times competitors respond to customers and complete a business contract before we finish the first presentation.

Consolidation and formatting of information from different systems takes time. The format varies depending on which individual assembles the presentation, and does not always yield a consistent look to a pre-existing customer. Customers expect consistency and lose confidence when the presentations vary.

When we get to negotiations, we cannot get accurate phone quotes fast enough. We have the right products and know how to produce them, but we are having trouble selling them.

VP Finance:
Inaccurate cost estimating is causing much of our business to fall short of our profitability standards price quotes without estimating cost does not allow an early business analysis of profitability. Inaccurate sales price quotes result in bad revenue projections. The inaccuracy of phone price quotes is a major problem. Phone quotes are usually low and result in low profitability. The sales staff continues to use phone quotes, and customers expect them to be binding.

Detailed cost estimates and details of actual costs incurred, along with revenues, are not entered into the Actuals Tracking system. Finally, no change management practices are in place. This results in customers not being billed for changes and additions to marketing programs.

Chief Information Officer:
The systems that are now used for work orders and price quotes are not year 2000 compliant, and must be replaced. All new systems will use a client/server architecture, We do not have current staff to create client/server systems, but we have excellent relational DBMS skills.

Assessment of User Community:
Entry of cost estimates into the Actuals Tracking system at a detailed level is extremely difficult and time-consulting. Users need more support for developing advanced functionality into the spreadsheets that are used for price quotes and cost estimates.

With so many applications involved, phone quotes are next to impossible. Phone quotes are really just educated guesses instead of price quotes. Users did not mention response times of individual applications as an issue.

Target Business Environment:

VP Finance:
The company wants an application that will be used to standardize processes, practices, procedures, and outputs where cost estimating, price quotes, and specification are concerned. The company wants to develop the applications in phases:

- cost estimates, price quotes, and specification, and standardized customer presentations;
- standardized internal reports and change management;
- production workflow, and
- a customer communications repository.

VP Sales:
The company wants to deploy the application by sales region as each phase is completed;

- Midwest region, 600 users, 250-300 concurrent;

- Northern region, 400 users, 200-250 concurrent;
- Western region, 45-55 users, all concurrent.

Chief Information Officer:
The company would like to have an integrated tool that brings together cost estimates, price quotes, and specifications. This tool needs to feed information automatically into the existing Actuals Tracking system, and reuse as much of the existing relational DBMS as possible. The company will own the developed system after the first phase, maintain the current release, and develop further releases, all without external expertise.

QUESTIONS ***General Business Consultants***

Q. 1
What is the maintainability requirement?

A. The solution will need to be maintained by internal staff who have client/server expertise.
B. The solution will need to be maintained by internal staff who have minimal client/server experience.
C. The solution will need to be maintained by external consultants who have client/server expertise.
D. The solution will not need to be maintained.

Answer: B.
Explanation: According to the Chief Information Officer the company does not have current staff with experience of client/server systems. The company will after the first phase maintain the current release.

Incorrect Answers:
A: The Company does not have current staff with experience of client/server systems.
C: The Company will after the first phase maintain the current release.
D: The system would have to be maintained and further developed.

Q. 2
Which two business needs does this project address?(Choose two)

A. more accurate marketing program specifications.
B. faster responses to customer RFPs and negotiations.
C. more functionality in spreadsheets that are used for price quotes and cost estimates.
D. more accurate financial assessment of customer proposals.
E. more detailed marketing program specifications.

Answer: B, D.
Explanation:
B: Slow response to a customer's Request for Proposal (RFP) causes the company to lose opportunities.
D: Inaccurate cost estimating is causing much of the companies business to fall short of their profitability standards price quotes.

Incorrect Answers:
A: Improved marketing program specifications are not addressed as a requirement to this project.

C: They want to use spreadsheets less.
E: Improved marketing program specifications are not addressed as a requirement to this project.

Q. 3
Why are details of cost estimates missing from the Actuals Tracking system?

A. The Actuals Tracking system does not store and track cost estimates at a detailed level.
B. Entering cost estimates into the Actuals Tracking system at a detailed level is too difficult and time-consuming.
C. Cost estimates are not created at a detailed level.
D. Actuals Tracking system does not track cost estimates.

Answer: B.
Explanation: Detailed cost estimates and details of actual costs incurred, along with revenues, are not entered into the Actuals Tracking system. The reason is that entry of cost estimates into the Actuals Tracking system at a detailed level is extremely difficult and time-consuming.

Incorrect Answers:
A: The Actuals Tracking system would be able to store and track cost estimates at a detailed level if the appropriate data have been entered.
C: Actuals Tracking system is able to create cost estimates at a detailed level if the appropriate data has been entered.
D: Actuals Tracking system is able to track cost estimates.

Q. 4
Which business problems contribute to the company's low profitability?(Choose all that apply)

A. inability to create detailed cost estimates.
B. inaccurate cost estimates.
C. inaccurate price quotes.
D. inaccurate specifications.
E. inconsistent customer presentations.
F. lack of advanced spreadsheet functionality.
G. lack of change management practices.
H. lack of qualified client/server developers.
I. lack of year 2000 compliant systems.
J. slow response to customer RFPs.
K. slow system response time.

Answer: B, C, E, G, J.
Explanation:
B: Cost estimates are inaccurate since the current system doesn't have the data available to produce these estimates.
C: Price cost is inaccurate since they are often done over the phone. And the quote is based in inadequate information.
E: General Businesses Consultants doesn't use standardized customer presentations.
G: No change management practices are in place. This results in customers not being billed for changes and additions to marketing programs.
J: Slow response to requests for price information from the customers is a major problem. Often competitors are reported to be much faster.

Incorrect Answers:
A: Detailed cost estimates could be created if the appropriate data is entered into the system.
D: Specifications are good, but they cost estimates must be improved.
F: Advanced spreadsheet functionality does already exist.
H: The company doesn't have any qualified client/server developers but this does not contribute to the low profitability.
I: The current system is not year 2000 compliant and will be replaced. However, it doesn't contribute to the low profitability.
K: Slow response time is not a problem.

Q. 5
What are the business problems that will be addressed by the new system? (Choose all that apply.)

A. inability to create detailed cost estimates.
B. inaccurate cost estimates.
C. inaccurate price quotes.
D. inaccurate specifications.
E. inconsistent customer presentations.
F. lack of advanced spreadsheet functionality.
G. lack of change management practices.
H. lack of qualified client/server developers.
I. lack of year 2000 compliant systems.
J. slow response to customer RFPs.
K. slow system response time.

Answer: B, C, E, G, J.

Explanation:

B: Cost estimates are inaccurate since the current system doesn't have the data available to produce these estimates. The new system will address be able to accurately estimate costs.

C: Price cost is inaccurate since they are often done over the phone. And the quote is based in inadequate information. The new system will be able to accurately quote prices.

E: General Businesses Consultants doesn't use standardized customer presentations. The new system will provide a standardized presentation included in the integrated in the new tool.

G: No change management practices are in place. This results in customers not being billed for changes and additions to marketing programs. Standardized change management will be included in the new system.

J: Slow response to requests for price information from the customers is a major problem. Often competitors are reported to be much faster. The new system will be able to provide accurate price quote quickly.

Incorrect Answers:

A: Detailed cost estimates could be created if the appropriate data is entered into the system.

D: Specifications are good, but they cost estimates must be improved.

F: Advanced spreadsheet functionality does already exist.

H: The company doesn't have any qualified client/server developers but this does not contribute to the low profitability.

I: The current system is not year 2000 compliant and will be replaced. However, it doesn't contribute to the low profitability.

K: Slow response time is not a problem.

Q. 6

Which constraints affect the implementation schedule? (Choose two.)

A. Immediate remote access is needed
B. The current systems aren't Y2K compliant.
C. The information systems staff has a low level of experience in developing client-server applications.
D. The customers have needs for new product lines.
E. The current systems have slow response times.

Answer: B, C.

Explanation: The current system is not Y2K compliant and must be upgraded as a part of this project.
The staff at the company has no experience in developing client/server applications. A client/server solution would therefore require external personal. This restricts the implementation schedule.

Incorrect Answers:

A: The scenario doesn't mention remote access.

D: The implementation of the application will not be influenced by any new product lines.

E: The response time of the current system is not a problem.

Q. 7
Which is the most important performance requirement?

A. The speed of data entry.
B. The response time of the applications.
C. The time required for generating price quotes.
D. The use of network resources.

Answer: C.
Explanation: When they negotiate they cannot get accurate phone quotes fast enough. They have the right products and know how to produce them, but we are having trouble selling them.

Incorrect Answers:
A: The speed of the data entry is not a problem.
B: The response time of the applications are not reported to be a problem.
D: Use of network resources is not a problem.

Q. 8
What is the price quote problem?

A. Sales representatives do not have online access to price quotes.
B. The current applications have slow response times.
C. Generating a price quote requires too many applications.
D. Price quotes are a non-essential business practice.

Answer: C.
Explanation: Price quotes are started within spreadsheet that are designed by the person who is doing the price quote. The price quote spreadsheets are printed, manually entered into the Price Quote system on a mainframe computer, and refined based on current market conditions.
This is an awkward procedure which involves two applications and the manually entering the output of the first application into the second application.

Incorrect Answers:
A: They have online access if they appropriate data is entered.
B: The application doesn't have slow response time.

D: Price quotes are essential in giving customers business offers.

Q. 9
Which processes are needed for generating a price quote?

Processes

*Refine the price quotes based on current market conditions.
*Create a customer presentation.
*Start formulating cost estimates for the marketing program.
*Enter cost estimates for the marketing program into the Actuals Tracking system.
*Assess the customer's needs.
*Describe the marketing program in detail.
*Start formulating customer price quotes.
*Review the customer presentation for financial feasibility
*Enter the customer's needs into the Work Order system.
*Enter price quotes into the Price Quote system.
*Summarize cost estimates for the marketing program.
*Present the marketing program to the customer.

>> Move

Remove<<

Select Items

Answer:

Comments:
1. Access the customer's needs
2. Enter the customer's needs into the Work Order system
3. Describe the marketing program in detail

Now the Price Quotes can be generated.

4. Start formulating customer price quotes
5. Enter the price quotes into the Price Quote system

The price Quote has been generated.

Note: Be careful which result is required.
Further steps to generate a Cost Estimate

6. Refine the price quotes based on current market conditions
7. Start formulating cost estimates for the marketing program
8. Summarize cost estimates for the marketing program

Now a cost estimate has been produced. Go further for a presentation.

9. Enter cost estimates for the marketing program into the Actuals Tracking system.
10. Create a customer presentation
11. Review the customer presentation for financial feasibility
12. Present the marketing program to the customer

Q. 10
A price quote has been generated Select and arrange chronologically the current business processes that are needed to present the marketing program to the customer.

Answer:

Comments:

The Price Quote is already generated. Next step is to get a Cost Estimate.

1. Refine the price quotes based on current market conditions
2. Start formulating cost estimates for the marketing program
3. Summarize cost estimates for the marketing program

The Cost Estimate has been generated. Next step is the Presentation.

4. Enter cost estimates for the marketing program into the Actuals Tracking system.
5. Create a customer presentation
6. Review the customer presentation for financial feasibility
7. Present the marketing program to the customer

Note: The following steps are used to generate a price quote.
First the Price Quote

1. Access the customer's needs
2. Enter the customer's needs into the Work Order system

3. Describe the marketing program in detail
4. Start formulating customer price quotes
5. Enter the price quotes into the Price Quote system