S90.09^Q&As

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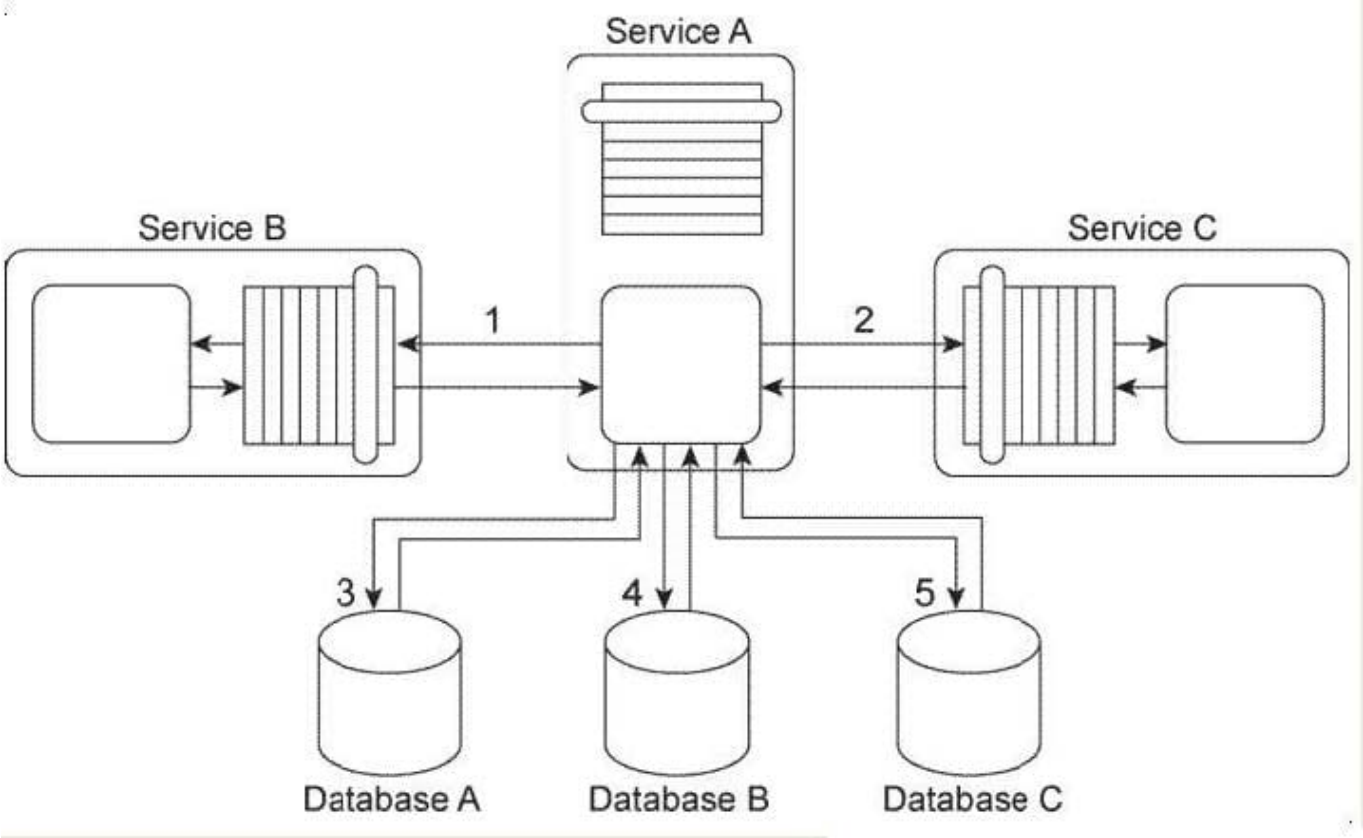
QUESTION 1

You are told that in this service composition architecture, all four services are exchanging invoice-related data in an XML format. The services in Service Inventory A are standardized to use a specific XML schema for invoice data. Design standards were not applied to the service contracts used in Service Inventory B, which means that each service uses a different XML schema for the same kind of data. Database A and Database B can only accept data in the Comma Separated Value (CSV) format and therefore cannot accept XML formatted data. What steps can be taken to enable the planned data exchange between these four services?



A. The Data Model Transformation pattern can be applied so that data model transformation logic is positioned between Service A and Service B, between Service A and Service C, and between Service C and Service D . The Data Format Transformation pattern can be applied so that data format transformation logic is positioned between the Service B logic and Database A and between the Service D logic and Database B.

B. The Data Model Transformation pattern can be applied so that data model transformation logic is positioned between Service A and Service C and between Service C and Service D . The Data Format Transformation pattern can be applied so that data format transformation logic is positioned between

the Service B logic and Database A and between the Service D logic and Database B.

C. The Data Model Transformation pattern can be applied so that data model transformation logic is positioned between Service A and Service C . The Protocol Bridging pattern can be applied so that protocol bridging logic is positioned between Service A and Service B and between the Service C and Service D . The Data Format Transformation pattern can be applied so that data format transformation logic is positioned between the Service B logic and Database A and between the Service D logic and Database B.

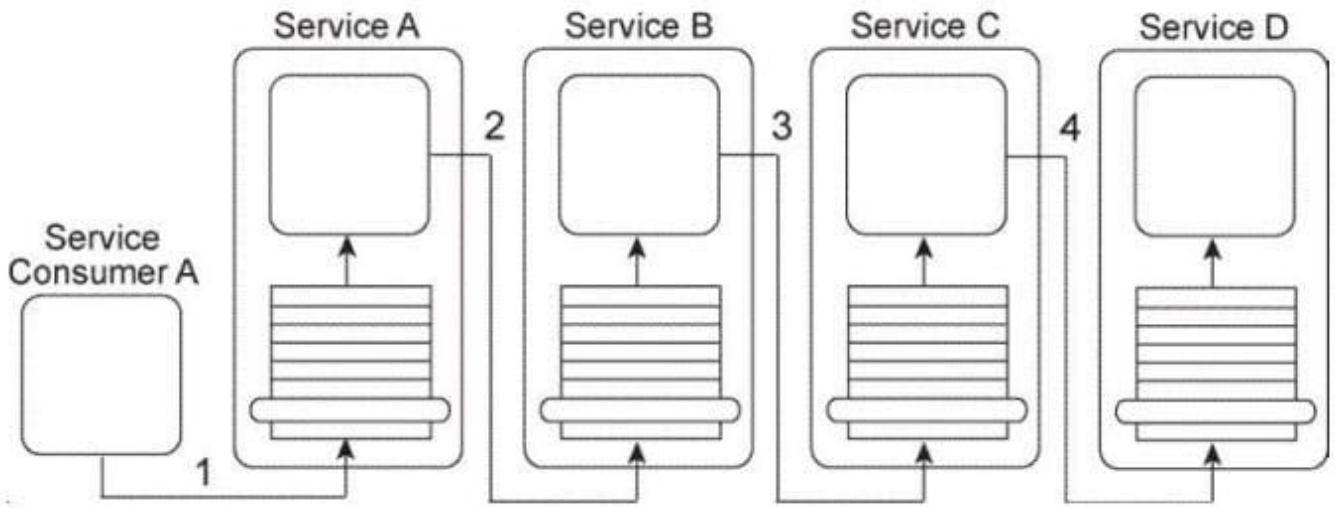
D. None of the above.

Correct Answer: A

QUESTION 2

Service Consumer A sends a message to Service A (1), which then forwards the message to Service B (2). Service B forwards the message to Service C (3), which finally forwards the message to Service D (4).

Services A, B, and C each contain logic that reads the content of the message and, based on this content, determines which service to forward the message to. As a result, what is shown in the Figure is one of several possible runtime scenarios.



Currently, this service composition architecture is performing adequately, despite the number of services that can be involved in the transmission of one message. However, you are told that new logic is being added to Service A that will require it to compose one other service in order to retrieve new data at runtime that Service A will need access to in order to determine where to forward the message to. The involvement of the additional service will make the service composition too large and slow. What steps can be taken to improve the service composition architecture while still accommodating the new requirements and avoiding an increase in the amount of service composition members?

A. The Rules Centralization pattern can be applied to establish a centralized service that contains routing-related business rules. This new Rules service would replace Service B and could be accessed by Service A and Service C in order for Service A and Service C to determine where to forward a message to at runtime. The Service Composability principle can be further applied to ensure that all remaining services are designed as effective service composition participants.

B. The Asynchronous Queuing pattern can be applied together with the Rules Centralization pattern to establish a Rules service that encapsulates a messaging queue. This new Rules service would replace Service B and could be accessed by Service A and Service C in order for Service A and Service C to determine where to forward a message to at runtime. The Service Composability principle can be further applied to ensure that all remaining services are designed as effective service composition participants.

C. The Intermediate Routing pattern can be applied together with the Service Agent pattern by removing Service B or Service C from the service composition and replacing it with a service agent capable of intercepting and forwarding the message at runtime based on predefined routing logic. The Service Composability principle can be further applied to ensure that all remaining services are designed as effective service composition participants.

D. None of the above.

Correct Answer: C

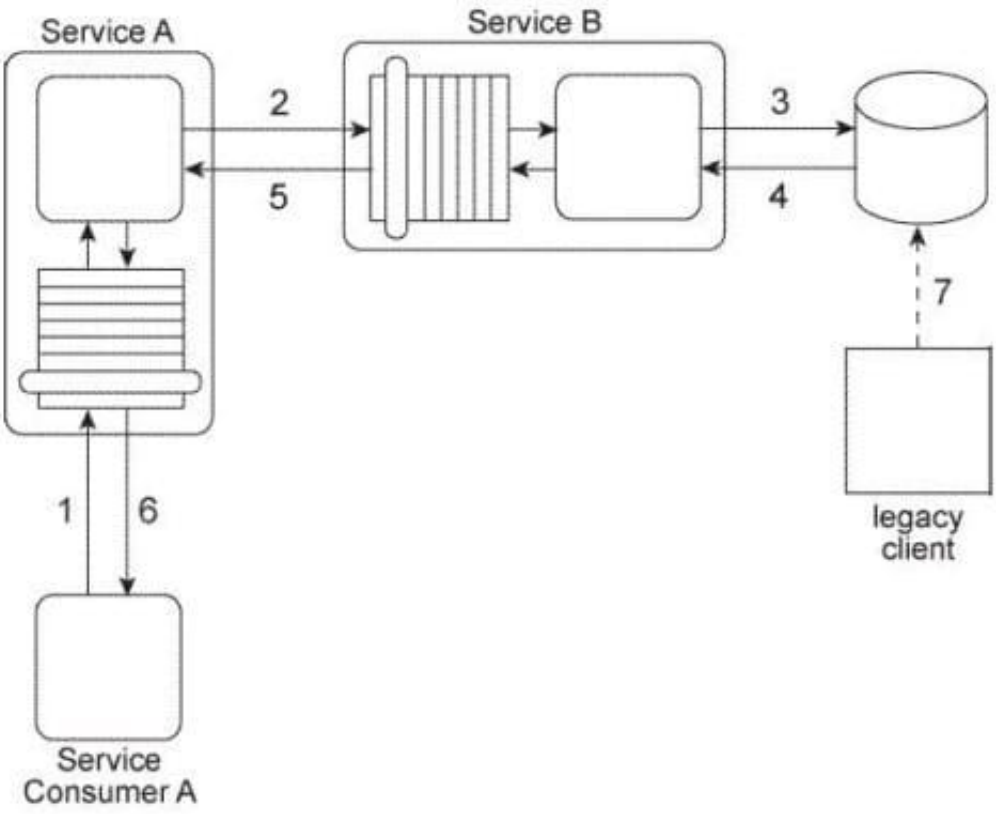
QUESTION 3

Service A is an entity service that provides a Get capability that returns a data value that is frequently changed.

Service Consumer A invokes Service A in order to request this data value (1). For Service A to carry out this request, it must invoke Service B (2), a utility service that interacts (3.4) with the database in which the data value is stored, Regardless of whether the data value changed. Service B returns the latest value to Service A (5), and Service A returns the latest value to Service Consumer A (6).

The data value is changed when the legacy client program updates the database (7). When this change happens is not predictable. Note also that Service A and Service B are not always available at the same time.

Any time the data value changes. Service Consumer A needs to receive it as soon as possible. Therefore, Service Consumer A initiates the message exchange shown in the Figure several times a day. When it receives the same data value as before, the response from Service A is ignored. When Service A provides an updated data value, Service Consumer A can process it to carry out its task.



Because Service A and Service B are not always available at the same times, messages are getting lost and several invocation attempts by Service Consumer A fail. What steps can be taken to solve this problem?

A. The Asynchronous Queuing pattern can be applied so that messaging queues are established between Service A and Service B and between Service Consumer A and Service A . This way, messages are never lost due to the unavailability of Service A or Service B .

B. The Asynchronous Queuing pattern can be applied so that a messaging queue is established between Service A and Service B . This way, messages are never lost due to the unavailability of Service A or Service B . The Service Agent

pattern can be further applied to establish a service agent that makes a log entry and issues a notification when re-transmission attempts by the messaging queue exceeds a pre-determined quantity.

C. The Asynchronous Queuing pattern can be applied so that a messaging queue is established between Service Consumer A and Service A. This way, messages are never lost due to the unavailability of Service A or Service B. The Service Agent pattern can be further applied to establish a service agent that makes a log entry each time a runtime exception occurs.

D. None of the above.

Correct Answer: A

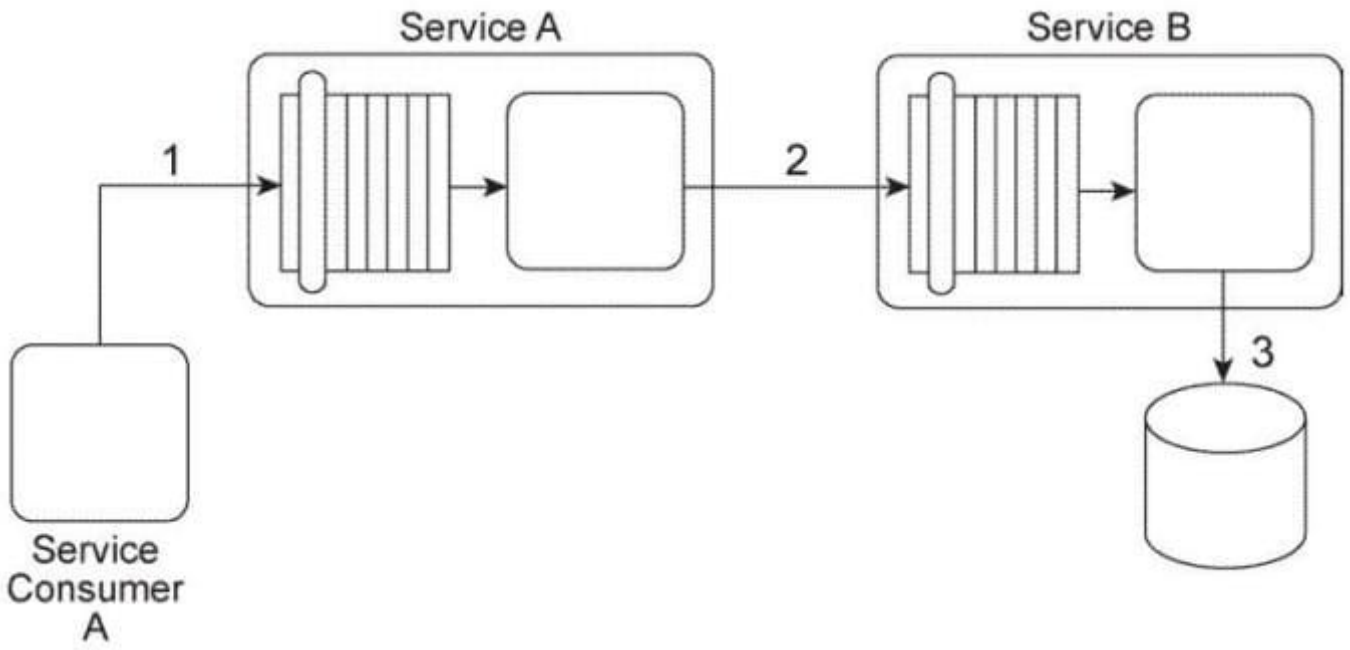
QUESTION 4

Service A is an entity service with a functional context dedicated to invoice-related processing. Service B is a utility service that provides generic data access to a database.

In this service composition architecture, Service Consumer A sends a SOAP message containing an invoice XML document to Service A(1). Service A then sends the invoice XML document to Service B (2), which then writes the invoice document to a database.

The data model used by Service Consumer A to represent the invoice document is based on XML Schema

A. The service contract of Service A is designed to accept invoice documents based on XML Schema B. The service contract for Service B is designed to accept invoice documents based on XML Schema A. The database to which Service B needs to write the invoice record only accepts entire business documents in Comma Separated Value (CSV) format.



Due to the incompatibility of XML schemas used by the services, the sending of the invoice document from Service Consumer A through to Service B cannot be accomplished using the services as they currently exist. Assuming that the Contract Centralization and Logic Centralization patterns are being applied, what steps can be taken to enable the sending of the invoice document from Service Consumer A to the database without adding logic that will increase the runtime performance of the service composition?

A. The Data Model Transformation pattern can be applied so that the invoice document sent by Service Consumer A is transformed into an invoice document that is compliant with the XML Schema B used by Service A . The Data Model Transformation pattern can be applied again to ensure that the invoice document sent by Service A is compliant with XML Schema A used by Service B.

B. The service composition can be redesigned so that Service Consumer A sends the invoice document directly to Service B. Because Service Consumer A and Service B use XML Schema A, the need for transformation logic is avoided. This naturally applies the Service Loose Coupling principle because Service Consumer A is not required to send the invoice document in a format that is compliant with the database used by Service B.

C. The Standardized Service Contract principle can be applied to the service contract of Service A so that it is redesigned to use XML Schema A. This would make it capable of receiving the invoice document from Service Consumer A and sending the invoice document to Service B without the need to further apply the Data Model Transformation pattern.

D. None of the above.

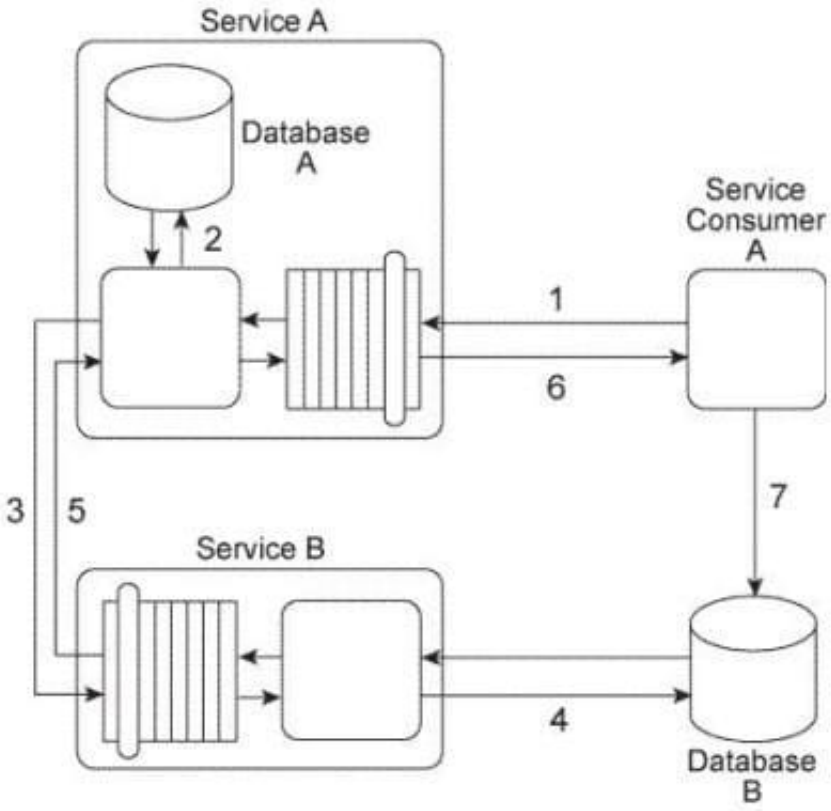
Correct Answer: C

QUESTION 5

Service Consumer A sends a message with a business document to Service A (1), which writes the business document to Database A (2). Service A then forwards the business document to Service B (3), which writes the business document to Database B (4).

Service B then responds to Service A with a message containing a failure or success code (5) after which Service A responds to Service Consumer A with a message containing a failure or success code (6). Upon receiving the message, Service Consumer A updates a log table in Database B (7). The log entry is comprised of the entire business document.

Database A is dedicated to the Service A service architecture and Database B is a shared database.



There are two problems with this service composition architecture that you are asked to address: First, both Service Consumer A and Service B need to transform the business document data from an XML format to a proprietary Comma Separated Value (CSV) in order to write the data to Database B. This has led to redundant data format transformation logic that has been difficult to keep in synch when Database B changes. Secondly, Service A is an entity service that is being reused by several other service compositions. It has lately developed reliability problems that have caused the service to become unavailable for extended periods. What steps can be taken to solve these problems?

A. The Legacy Wrapper pattern can be applied so that data access to Database B is separated into a new wrapper utility service. This way, the Data Format Transformation pattern only needs to be applied within the logic of this new service which will expose a standardized contract that both Service Consumer A and Service B can access. The Asynchronous Queuing pattern can be applied so that messaging queues are established between Service Consumer A and Service A and between Service A and Service B . The Service Autonomy principle can be further applied to Service A in order to establish a more isolated and reliable surrounding infrastructure.

B. The Legacy Wrapper pattern can be applied so that data access to Database B is separated into a new wrapper utility service. This way, the Data Format Transformation pattern only needs to be applied within the logic of this new service which will expose a standardized contract that both Service Consumer A and Service B can access. The Reliable Messaging pattern can be applied so that acknowledgements are passed between Service Consumer A and Service A and between Service A and Service B . The Service Composability principle can be further applied to Service A in order to optimize its service architecture for improved participation in multiple service compositions.

C. The service composition can be redesigned with the application of the Contract Centralization pattern so that instead of writing the business document to Database B, Service Consumer A sends the business document to Service B instead. This way, Service B would provide the only location where data format transformation logic for Database B needs to be carried out, which further supports the application of the Service Reusability principle. The Reliable Messaging pattern can be applied so that acknowledgements are passed between Service Consumer A and Service A and between Service A and Service B . The Service Composability principle can be further applied to Service A in order to optimize its service architecture for improved participation in multiple service compositions.

D. None of the above.

Correct Answer: A