Exam Session - Knowledge Check: Architecture (SAA-C03) 2 of 2

#1

What service does Amazon Lex provide?

✓

Develop conversational interfaces using voice and text

✗

Develop voice-to-text translation

✗

Develop Natural language processing (NLP) algorithms for text analysis

✗

Develop time series data processing for predictive analysis

Explanation

Amazon Lex is an AWS service for building conversational interfaces for applications using voice and text. Amazon Lex provides the deep functionality and flexibility of natural language understanding (NLU) and automatic speech recognition (ASR) so you can build highly engaging user experiences with lifelike, conversational interactions, and create new categories of products.

🔗https://docs.aws.amazon.com/lexv2/latest/dg/what-is.html

#2

Which statement below best describes the service Amazon SageMaker provides?

✓

SageMaker helps to build, train, and deploy machine learning models.

✗

SageMaker specializes in pre-trained models to process images and videos.

✗

SageMaker helps developers build conversational applications through voice and text.

✕

SageMaker helps extract insights from text documents.

Explanation

Amazon SageMaker helps to build, train, and deploy machine learning models. The other statements describe Amazon Lex, Amazon Rekognition, and Amazon Comprehend.

🔗 /course/introduction-to-sagemaker-1200/overview-of-amazon-sagemaker/
Covered in this lecture
Overview of Amazon Sagemaker
Course:Introduction to SageMaker

8m
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#3

When is a single-tier design a better fit for an application than a multi-tier design? (Choose 2 answers)

✕

Single-tier design is better suited when a decoupled architecture is critical.

✓

Single-tier design is better suited for Dev/Test environments and simple applications.

✓

Single-tier design is better suited when potentially scaling for burst traffic is not a concern.

✕

Single-tier design is better suited when high availability is a critical factor.

Explanation

So the benefit of a single-tier architecture is that we have everything in one tier. So potentially one instance or group of instances can run our entire application. The three tiers will be sharing the memory, process, and storage of that one machine or group of machines. And that is fine when we just need a simple service, say a Dev or Test environment, or we have a very small application that may not need to scale up or down to meet demand.

Covered in this lecture
When Should We Consider Single-Tier Architecture?
Course:Designing Multi-Tier Architectures

3m

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#4

Which AWS Machine Learning service uses time-series data to predict changes related to business KPIs, such as inventory, pricing, web traffic, or employee staffing?

✓

Amazon Forecast

✗

Amazon Comprehend

✗

Amazon Polly

✗

Amazon Lex

Explanation

Amazon Forecast is a fully managed service that uses statistical and machine learning algorithms to deliver highly accurate time-series forecasts. Based on the same technology used for time-series forecasting at Amazon.com, Forecast provides state-of-the-art algorithms to predict future time-series data based on historical data, and requires no machine learning experience.

Time-series forecasting is useful in multiple fields, including retail, finance, logistics, and healthcare. You can also use Forecast to predict domain-specific metrics for your inventory, workforce, web traffic, server capacity, and finances.

🔗https://docs.aws.amazon.com/forecast/latest/dg/what-is-forecast.html

#5

There are several ways to purchase compute capacity through the Amazon EC2 service. Which orders the On-Demand, Spot, and Reserved instance purchase option in order from lowest cost to highest cost?

✓

1. Spot
2. Reserved
3. On-Demand

✕

1. Spot
2. On-Demand
3. Reserved

✕

1. Reserved
2. Spot
3. On-DemandA, C, B

✕

1. On-Demand
2. Reserved
3. Spot

Explanation

Spot instances are usually many, many times cheaper than on-demand prices. Reserved instances, depending on their term and utilization, can yield approximately 33% to 66% cost savings. On-Demand prices are the baseline price and are the most expensive way to purchase EC2 compute time.

🔗 https://d0.awsstatic.com/whitepapers/Cost_Optimization_with_AWS.pdf

#6

Amazon Rekognition is broadly separated into which two types of processing? (Choose 2 answers)

✕

processing spoken languages

✕

processing music

✓

processing videos

✓

processing images

Explanation

Amazon Rekognition is broadly separated into operations specific to processing images and operations specific for processing videos or video streams. The main difference between these two sets of APIs is that the image processing APIs follow a synchronous pattern, whereas the video processing APIs follow an asynchronous pattern for calling.

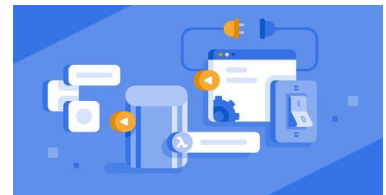🔗 /course/amazon-rekognition/

Covered in this lecture
Amazon Rekognition
Course:Introduction to Amazon Rekognition

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#7

In theory, the machine learning workflow can be broken down into four separate steps. Which of the following choices lists each of those steps in the proper order?

✓

1. Prepare your data
2. Build your model
3. Train and tune your model
4. Deploy and manage your model

✕

1. Prepare your data
2. Train and tune your model
3. Build your model
4. Deploy and manage your model

✕

1. Build your model
2. Train and tune your model
3. Prepare your data
4. Deploy and manage your model

✕

1. Build your model
2. Prepare your data
3. Train and tune your model
4. Deploy and manage your model

Explanation

The general order of the machine learning workflow is:

1. Prepare your data
2. Build your model
3. Train and tune your model
4. Deploy and manage your model

🔗 /course/introduction-to-sagemaker-1200/overview-of-amazon-sagemaker/
Covered in this lecture
Overview of Amazon Sagemaker
Course:Introduction to SageMaker

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#8

What three requirements must be met to launch EC2 spot instances? (Choose 3 answers)

✓

You must have an active spot request.

✓

Your maximum hourly price must exceed the spot price.

✓

There must be available EC2 instance capacity.

✗

You must provide a fixed duration of time to use the spot instances.

Explanation

To launch spot instances, you need an active spot request with a maximum price that exceeds the spot price, and there must be available EC2 capacity to fulfill your request. You can optionally provide a fixed duration of time that you will need the spot instances, but this is not required.

🔗https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-spot-instances.html#spot-features

#9

AWS Lambda is a(n) _____-driven service.

✕

container

✕

security

✕

data

✓

event

Explanation

Lambda is an event-driven service.

🔗/course/survey-serverless-2399/a-survey-of-serverless/

#10

What does Rekognition do?

✕

detects how a user who wrote some text felt about the subject

✓

labels objects in an image

✕

analyzes text to extract information

✕

uses the inputs such as CPU utilization, memory usage, and IOPS from cloud servers to attempt to control the output of cost

Explanation

Rekognition (spelled with a K instead of a C) is Amazon's image processing suite. This service covers both still pictures and videos and is capable of doing actions related to labeling objects in an image.

🔗 /course/introduction-to-machine-learning/01-introduction-to-ai-and-ml-introduction/
Covered in this lecture
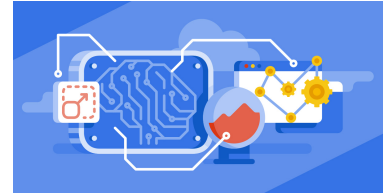Introduction
Course:Introduction to Machine Learning - Part One

4m
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#11

What is a dataset domain in Amazon Forecast?

✓

a pre-defined dataset schema for a common use case

✗

a custom dataset schema for a specific use case

✗

a pre-defined algorithm for a common use case

✗

a custom dataset for a specific use case

Explanation

To train a predictor, you create one or more datasets, add them to a dataset group, and provide the dataset group for training.

For each dataset that you create, you associate a dataset domain and a dataset type. A *dataset domain* specifies a pre-defined dataset schema for a common use case, and does not impact model algorithms or hyperparameters.

🔗 https://docs.aws.amazon.com/forecast/latest/dg/howitworks-domains-ds-types.html
#12

In a standard architecture of a multi-tier application, where are the separate tiers placed in a VPC with a single public subnet and a single private subnet?

✕

The presentation, logic, and data tiers are all placed in the public subnet.

✓

The presentation tier is placed in the public subnet, and the logic and data tiers are placed in the private subnet.

✕

The presentation and logic tiers are placed in the public subnet, and the data tier is placed in the private subnet.

✕

The presentation and logic tiers are placed in the private subnet, and the data tier is placed in the public subnet.

Explanation

We can have an Amazon VPC with private and public subnets and that might suit our multi-tier architectures. Where we want to have our presentation layer available to the internet. And our logic and data tiers are hidden from the internet in a private subnet.

🔗/course/design-multi-tier-architectures/saa-d1-designing-solutions/
Covered in this lecture
Designing a Multi-Tier Solution
Course:Designing Multi-Tier Architectures

5m

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#13

Amazon Comprehend provides which of the following AI services?

✓

Document analysis using natural language processing (NLP)

✕

Image analysis using convolutional neural networks (CNN)

✕

Enables text-to-speech (TTS) conversion

✕

A neural machine translation service for translating text

Explanation

Amazon Comprehend uses natural language processing (NLP) to extract insights about the content of documents. Amazon Comprehend processes any text file in UTF-8 format, and semi-structured documents, like PDF and Word documents. It develops insights by recognizing the entities, key phrases, language, sentiments, and other common elements in a document. Use Amazon Comprehend to create new products based on understanding the structure of documents. For example, using Amazon Comprehend you can search social networking feeds for mentions of products or scan an entire document repository for key phrases.

🔗 https://docs.aws.amazon.com/comprehend/latest/dg/what-is.html

#14

Which types of datasets can users specify in Amazon Forecast? (Choose 3 answers)

✓

Target time series datasets

✓

Related time series datasets

✓

Item metadata datasets

✕

Testing time series dataset

Explanation

Datasets contain the data used to train a predictor. You create one or more Amazon Forecast datasets and import your training data into them. A dataset group is a collection of complementary datasets that detail a set of changing parameters over a series of time. After creating a dataset group, you use it to train a predictor.

Each dataset group can have up to three datasets, one of each dataset type: target time series, related time series, and item metadata.

🔗https://docs.aws.amazon.com/forecast/latest/dg/howitworks-datasets-groups.html#howitworks-dataset
#15

When is a multi-tier design a better fit for an application than a single-tier design? (Choose 2 answers)

✓

Multi-tier design is better suited when a decoupled architecture is critical.

✕

Multi-tier design is better suited for Dev/Test environments and simple applications.

✕

Multi-tier design is better suited when potentially scaling for burst traffic is not a concern.

✓

Multi-tier design is better suited when high availability is a critical factor.

Explanation

Multi-tier applications offer decoupled architecture, which has a host of benefits in terms of each tier being able to scale horizontally to meet demand. This offers an improved capability to handle burst activity, and then scale down in size. It also improves fault tolerance and availability because problems within one tier will not directly (if truly decoupled) affect other app tiers.

🔗/course/design-multi-tier-architectures/saa-d1-3-when-to-use-multi-tier/
Covered in this lecture
When Should We Consider Single-Tier Architecture?
Course:Designing Multi-Tier Architectures

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#16

In Amazon Comprehend, the _____ assigned to each insight measures the likelihood that it is correct.

✓

confidence score

✕

classifier performance

✕

confusion matrix

✕

annotations

Explanation

The service will return a confidence score for each result. Low confidence scores mean that the service's confidence is low that it is correct. Conversely, if the service is highly confident, the score will be closer to 1.

🔗 https://aws.amazon.com/comprehend/faqs/

#17

What are Amazon EC2 Spot Instances?

✕

instances that can scale up or down as needed

✕

instances that are more expensive than regular instances, but which guarantee both 100% uptime and autoscaling

✕

instances that guarantee low latency and high availability, due to servicing requests only from a limited geographical region

✓

instances that can be acquired for large discounts, but which can be terminated whenever spare capacity is needed for standard compute
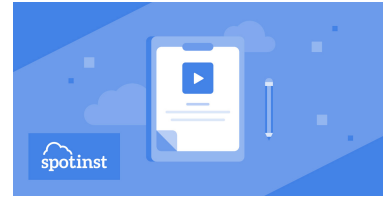
Explanation

In terms of hardware and technical parameters, Spot Instances are exactly the same as regular instances. Only pricing and availability are different. Spot Instances, which can be acquired for large discounts when compared to regular on-demand prices, come with a major caveat. Whenever spare capacity is needed for standard compute, the Spot Instance can be terminated, with a best-effort, two minute notice.

🔗 /course/cutting-cloud-costs-spotinst/overview-what-are-spot-instances/

Covered in this lecture
Overview, Basic Concepts and First Steps
Course:Optimizing Cloud Costs with Spot Instances and
Spotinst

6m

🔖

#18

AWS Device Farm is a(n) _____ service.

✕

fault injection

✓

app testing

✕

container deployment

✕

physical edge computing

Explanation

By definition, AWS Device Farm is an app testing service that lets you test and interact with your Android, iOS, and web apps on many devices at once, or reproduce issues on a device in real time.

🔗 /course/introduction-to-the-amazon-device-farm-service/amazon-device-farm-service/

#19

Which AWS service allows you to manage and synchronize data across multiple mobile devices and users?

✓

AWS AppSync

✕

Amazon SQS

✕

Amazon SNS

✕

Amazon API Gateway

Explanation

AWS AppSync allows you to manage and synchronize data across multiple mobile devices and users.

🔗 /course/survey-serverless-2399/a-survey-of-serverless/
#20

Which AWS service is a fully managed service that assists with building, publishing, monitoring, securing, and maintaining APIs within AWS?

✓

Amazon API Gateway

✕

Amazon S3

✕

AWS AppSync

✕

AWS Lambda

Explanation

AWS has created a fully managed service called Amazon API Gateway that helps deal with building, publishing, monitoring, securing, and maintaining APIs within AWS.

🔗 /course/survey-serverless-2399/a-survey-of-serverless/
#21

What Amazon S3 storage class is ideal for general purpose storage?

✓

S3 Standard

✕

S3 Reduced Redundancy Storage (RRS)

✕

Amazon S3 One Zone Infrequent Access (IA)

✕

Amazon S3 Glacier

Explanation

S3 Standard. This storage class is considered a general-purpose storage class. It is ideal for a range of use cases where you need high throughput with low latency with the added ability of being able to access your data frequently. By copying data to multiple availability zones, S3 Standard offers eleven nines of durability across multiple availability zones, meaning the OData remains protected against a single availability zone failure.

🔗/course/introduction-to-amazon-s3/storage-classes/? context_resource=lp&context_id=954.
Covered in this lecture
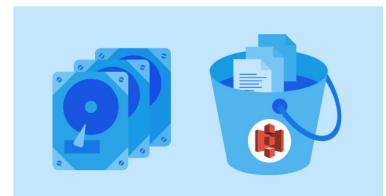Storage Classes
Course:Storage Fundamentals for AWS

13m

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#22

Which AWS service is a serverless event-based service that functions as a serverless event bus?

✕

Amazon Simple Notification Service (SNS)

✓

Amazon EventBridge

✕

AWS Fargate

✕

AWS Step Functions

Explanation

Amazon has a serverless event-based service called Amazon EventBridge that functions as a serverless event bus.

🔗 /course/survey-serverless-2399/a-survey-of-serverless/

#23

When considering a typical three-tier web application's design, which of the following generally operates as a 'backend' that processes incoming end-user requests?

✕

The presentation tier

✓

The logic tier

✕

The data tier

✕

None of these tiers is correct.

Explanation

Now, a business application generally needs three things. It needs something to interact with users, which often is called the presentation layer. It needs something to process those interactions. And that's often called our logic layer, or application layer, and it generally needs some way to store the data from that logic in that interaction. And that's commonly called our data tier.

🔗 /course/design-multi-tier-architectures/saa-d1-2-architecture-basics/
Covered in this lecture
Design Components - EC2 and Elastic Load Balancers
Course:Designing Multi-Tier Architectures

11m

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#24

When considering a typical three-tier application's design, which of the following generally stores transactions data?

✕

The presentation tier

✕

The logic tier

✓

The data tier

✕

None of these tiers is correct.

Explanation

Now, a business application generally needs three things. It needs something to interact with users, which often is called the presentation layer. It needs something to process those interactions. And that's often called our logic layer, or application layer, and it generally needs some way to store the data from that logic in that interaction. And that's commonly called our data tier.

🔗/course/design-multi-tier-architectures/saa-d1-2-architecture-basics/

Covered in this lecture
Design Components - EC2 and Elastic Load Balancers
Course:Designing Multi-Tier Architectures

11m
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#25

Which Amazon S3 storage class is for re-creatable, infrequently accessed data that needs millisecond access?

✓

S3 One Zone - Infrequent Access

✕

S3 Glacier

✕

S3 Standard

✕

S3 Intelligent - Tiering

Explanation

S3 One Zone - Infrequent Access is for re-creatable, infrequently accessed data that needs millisecond access.

🔗 /course/understanding-the-costs-of-amazon-s3-1221/amazon-s3-and-glacier/
Covered in this lecture
Amazon S3 and Glacier
Course:Understanding the Costs of Amazon S3

17m

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#26

Amazon Pinpoint makes it easy to _____.

✕

launch and manage virtual private servers

✕

query data in S3 using SQL

✓

run targeted campaigns to drive user engagement in mobile apps

✕

build a digital content creation studio

Explanation

By definition, Amazon Pinpoint makes it easy to run targeted campaigns to drive user engagement in mobile apps.

🔗 /course/introduction-to-the-amazon-pinpoint-service/amazon-pinpoint-service-1/