

REST API Interview Questions and Answers

Application Programming Interface, or API, is an interface that sets up the communication medium between multiple software applications or even between mixed hardware and software applications. These days it is important to know about them and to work with them as most technical employers look for these skills while hiring.

REST API is one of the most popular and easy-to-integrate APIs. To help our readers prepare for their interview, here are the top 25 interview questions followed by the most appropriate answer.

What is a web service?

Web services are standard software systems that provide a common platform for various applications (written in different programming languages) to communicate over the network. They help in establishing client-server communication.

What does REST stand for?

REST stands for Representational State Transfer.

Explain REST and RESTFUL.

A software architectural style that defines a set of rules that are to be used for creating web services is known as REST. REST uses the HTTP Protocol. It, itself, is not a protocol or a standard.

Web services that follow the REST architectural style are known as RESTful web services. A RESTful system consists of:

- A client who requests a particular resource
- A server that has all the resources

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Define the architectural style for creating a web API.

The architectural style for creating a web API are:

- HTTP for client-server communication
- XML/JSON as the formatting language
- Simple URI as the address for the services
- Stateless Communication

What are the HTTP methods supported by REST?

The HTTP methods supported by REST are:

- GET: The GET method retrieves specific information from the server according to the specifications made by the URI.
- POST: The POST method modifies data on that particular server from which the request was sent.
- PUT: The PUT method is used to request that the message body that has been returned is stored under the location mentioned in the HTTP message.
- DELETE: The DELETE method is used to delete the specified resources.
- HEAD: The HEAD method is quite similar to the GET method. The only difference is that the HEAD method returns only the meta information and not the message body.

Name the tools that are used to test a web API.

The SOAPUI tool is used for SOAP WS and the Firefox 'poster' plugin for RESTFUL services. These are the two most popular testing tools.

What are some of the key characteristics of REST?

- The REST API is stateless. It does not store data like user credentials and needs to be reminded of it with each new session. This feature helps in increasing scalability.
- It supports both JSON and XML, therefore, catering to the varying expectations of the developer community. Giants like Microsoft have implemented this API in their architecture.
- The REST architecture is simpler to implement as compared to SOAP.
- REST can be operated under limited resources and low network bandwidth.

What is meant by addressing in RESTful web services?

Addressing in RESTful web services refers to locating a resource or multiple resources present on the server. It is similar to locating the postal address of a person.

What is the use of JAXB in RESTful web API?

JAXB stands for Java Architecture for XML Binding. It is an XML-to-Java binding technology that enables the easy transformation of schema to Java objects and vice versa.

List the different application integration styles in real-time systems.

The different integration styles are:

- Directly accessing or sharing the database
- Batch file transfer or sharing
- Invoking remote procedure (RPC)
- Swapping asynchronous messages over a message-oriented middleware (MOM).

What is API Testing?

API testing is quite similar to software testing. It is used to determine if the developed APIs meet the expectations of that particular application's REST On functionality, reliability, performance, and security of that particular application.

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Mention some protocols used in API Testing.

Some commonly used protocols in API Testing are JMS, REST, HTTP, UDDI, and SOAP.

What are the common types of API Testing?

There is no fixed list as there is speciality testing as it depends upon the developer's expectations and requirements. However, most tests can be broadly categorized into 9 types:

- Validation Testing
- Functional Testing
- UI Testing
- Load Testing
- Runtime/ Error Detection
- Security Testing
- Penetration Testing
- Fuzz Testing
- Interoperability and WS Compliance testing

Which are the parameters that must be checked when performing API testing?

In the process of API testing, a request is raised to the API with the known data. It helps in analyzing the response. So, while testing the API, the following parameters must be kept in mind:

- Data Accuracy
- Schema Validation
- HTTP Status Code
- Data type, validations, order, and completeness
- Authorization checks
- Implementation of response timeout
- Error codes in case API returns, and
- Non-functional testing like performance and security testing

List a few testing tools for web services for REST API.

- Spring REST web service using MVC
- Jersey API
- CXF
- Axis
- Restlet

Differentiate between SOAP and REST.

SOAP	REST
SOAP (Simple Object Access Protocol) is a protocol through which two systems communicate by sharing XML documents.	REST (Representational State Transfer) is a service architecture and design for network-based software architectures.
SOAP only supports XML.	REST, on the other hand, supports many different formats of data.
The reads on SOAP cannot be cached.	The REST reads are cachable.
SOAP runs on HTTP but envelopes the message.	REST uses the HTTP headers to hold meta information.
SOAP cannot use REST since it itself is a protocol while REST is an architectural pattern.	On the other hand, REST can make use of SOAP as the underlying protocol for web services.
SOAP is slower than REST	REST is faster than SOAP

Specify the format of a URI in REST architecture.

The format of a URI is as follows:

<protocol>://<service-name>/<ResourceType>/<ResourceID>

Which web services method is available on read-only mode?

The operations under the GET method are read-only and are safe.

What is a “Resource” in REST?

REST considers all types of content as a resource; they can be text files, HTML pages, images, videos, or even dynamic business information. The REST server gives access to the resources and modifies them according to the different HTTP methods specified. Each resource is identified by URIs/ global IDs.

Which is the most popular way of representing a resource in REST?

Different representations are used by the REST architecture to define a particular resource. XML(Extensible Markup Language) and JSON(JavaScript Object Notation) are the most popular representations of resources.

Explain XML and JSON in brief.

XML:

- The Extensible Markup Language is quite similar to HTML. It is designed to store and transport data. One of its biggest advantages over HTML is that it allows users to create their own custom tags. XML is generally used to represent structured information like documents, data, configuration, etc.

JSON:

- JavaScript Object Notation is a lightweight format that has been designed to store and transport data. It represents structured data based on JavaScript object syntax. It is fast and easy to use and understand.

Which are the safe REST operations?

REST works on the HTTP protocol and hence, uses the HTTP methods to carry out its operations. The HTTP methods that do not change or modify the resources at the server are known as safe operations. The GET method returns the resource only in the read-only method, and the HEAD method returns the metadata of the resource and is, therefore, safe. The methods PUT, POST, and DELETE, on the other hand, modify the data at the server and are, therefore, considered unsafe.

Name the method that validates all controls on a page.

The Page.Validate() method validates all controls on a page.

Which library is used for JSON serialization in Web APIs?

The JSON.NET library is used for JSON serialization.

Who are the consumers of Web API?

Web APIs cater to a broad range of clients including browsers, and mobile devices. It is also used along with native applications that require web services but don't support SOAP. Clients that support the HTTP methods like GET, DELETE, POST, can also use Web APIs.

Read Also: [Top 25 .NET Interview Questions and Answers](#)

Conclusion

That is all for REST API Interview Questions for experienced, and if you are a fresher, don't worry if you could not answer some tricky questions. I am sure you will feel confident after preparing for any back-end interview using this series of questions.

I hope you found this post informative.

Thank you for reading 😊