DEVELOPING REST APIS AND WEB SERVICES IN JAVA

25 HOURS

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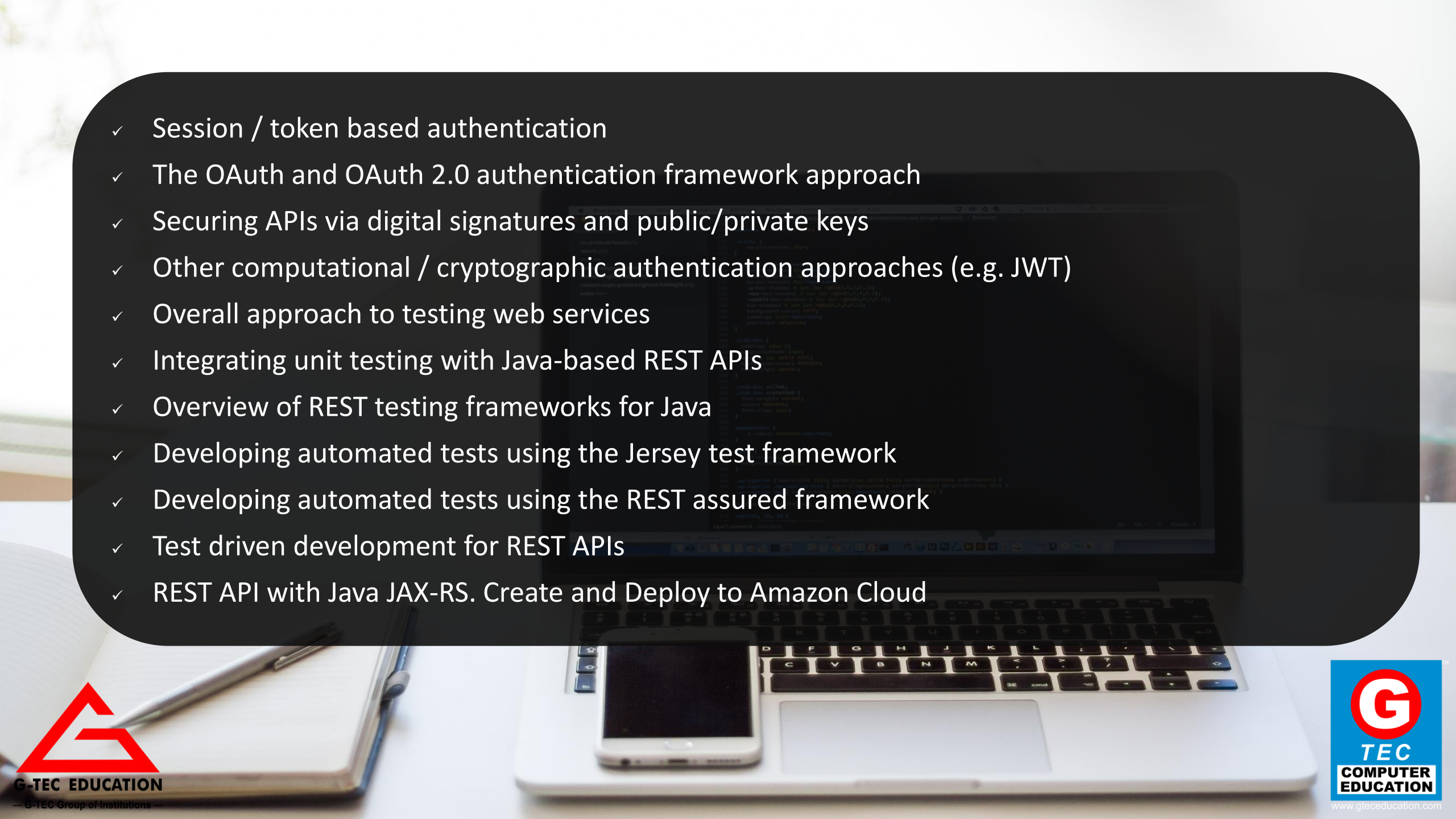
- ✓ Background and introduction to REST
- ✓ HTTP protocol and the different HTTP methods (GET, POST, PUT, DELETE, PATCH)
- ✓ Previous web API paradigms and approaches (SOAP, XML-RPC)
- ✓ The reason for REST to exist: Fundamental principles of the REST approach
- ✓ The common data encoding and transmission formats: JSON, XML
- ✓ Common URL formats, request types, content types, handling binary data and uploaded files
- ✓ Common tools for REST development, testing and debugging
- ✓ Review of existing REST APIs: Consuming REST APIs as a client (from a Java application, from a web page or from a mobile application)

- ✓ Designing and documenting a REST API, following best practices.
- ✓ Web API design considerations: Ease of use of the API, intuitive designs, longevity, maintainability,
- ✓ extensibility, performance, security, concurrency, data integrity.
- ✓ Implementing a REST API by receiving and responding to HTTP requests
- ✓ Introduction to the Java API for RESTful Web Services (JAX-RS)
- ✓ Overview of the different JAX-RS implementations
- ✓ Using the Jersey Framework (JAX-RS reference implementation)
- ✓ Installation and source code integration of Jersey: Possible ways in which it can be used
- ✓ Creating a standalone REST application and/or integrating it with a Java EE application
- ✓ Security considerations and requirements for web services and APIs
- ✓ Application of secure HTTP connections (HTTPS)
- ✓ Authentication and authorization: Different methods and approaches
- ✓ Using the Basic HTTP authentication in REST APIs



- ✓ Session / token based authentication
- ✓ The OAuth and OAuth 2.0 authentication framework approach
- ✓ Securing APIs via digital signatures and public/private keys
- ✓ Other computational / cryptographic authentication approaches (e.g. JWT)
- ✓ Overall approach to testing web services
- ✓ Integrating unit testing with Java-based REST APIs
- ✓ Overview of REST testing frameworks for Java
- ✓ Developing automated tests using the Jersey test framework
- ✓ Developing automated tests using the REST assured framework
- ✓ Test driven development for REST APIs
- ✓ REST API with Java JAX-RS. Create and Deploy to Amazon Cloud