

PATİKA.DEV & PAYCORE JAVA SPRING BOOTCAMP HOMEWORK 5

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1 – What are Authentication and Authorization ?

In short terms, authentication is the process of verifying someone is, while authorization is the process that defining who is authorized to do which procedures or activities inside the app or platform. Authorizations take place after the authentication.

2 - What is Hashing in Spring Security ?

Hashing is the process of generating a string , or hash, form a given message using some mathematical cryptographic methods known as cryptographic hash function. To a password to be considered secured four main properties are:

- It should be deterministic
- It's not reversible, it's impractical to generate a message from its hash.
- It has high entropy : a small change to a message should produce a vastly different hash.
- It resists collisions two different messages should not produce the same hash.

3 - What is Salting and why do we use the process of Salting ?

For security reasons, in order to prevent certain type of attacks, programmers use salted passwords. A salt is a sequence of randomly generated bytes that is hashed along with the password. The salt is stored and doesn't need to be protected. Whenever user needs authentication, the user's passwords hashed with salt and result should match the stored password. In order to make it more secure, salt should be long and random enough.

4 - What is "intercept-url" pattern ?

The intercept-url element defines a pattern which is matched against the URLs of incoming requests using an ant path style syntax. The access attribute defines the access requirements for requests matching given pattern.

5 - What do you mean by session management in Spring Security ?

Spring session has the simple goal of free up session management from the limitations of the HTTP session stored in the server. The solution makes it easy to share session data between services in the cloud without being tied to a single container like Tomcat.

6 – Why we need Exception Handling ?

Exception handling is important to maintain the desired flow of the program even when unexpected events occur. If error handling does not handled properly this may result in crashes and failed requests. These would negatively effect program performance, and development quality.

7 - Explain what is AuthenticationManager in Spring security ?

AuthenticationManager is the main strategy interface for authentication. If the principal of the input authentication is valid and verified. AuthenticationManager authenticate returns an Authentication instance with the authenticated flag set to true. Otherwise it will throw an AuthenticationException.

8 - What is Spring Security Filter Chain ?

Spring security maintains a filter chain internally where each of the filters has a particular responsibility and filters are added or removed from the configuration depending on which services are required. The ordering of the filters is important as there are dependencies between them. If namespace configuration is active, filters automatically configured , but there can be times programmer would want full control over the chain.

9 – What are the differences between OAuth2 and JWT ?

OAuth 2 defines a protocol that specifies how that tokens are transferred, JWT stands for JSON Web Token, and by the name of it it can be understand that it is a token format. It is a mechanism to verify the owner of some JSON data. OAuth can use JWT as token.

10 - What is method security and why do we need it ?

Spring Security supports authorization semantics at the method level. Typically, we could secure our service layer by things like restricting which roles are able to execute a particular method and test it using dedicated method level support. In order to enable method security programmer should use GlobalMethodSecurityConfiguration extension. Also some related annotations are @Secured, @RoleAllowed, @PreAuthorize, @PostAuthorize .

11 – What Proxy means and how and where can be used ?

A Proxy server is a bridge between you and the rest of the internet. Normally, when you use your browser to surf the internet, you connect directly to the website you are visiting . Proxies communicate with websites on your behalf. An http Proxy focuses on the connection between web server using http and a client. These proxies are frequently used as safety mechanisms, checking and filtering potentially harmful HTTP content. Proxies can be set up by using Zuul server in the spring boot, a gateway application that handles all the requests and does the dynamic routing of microservice applications.

12 – What is Wrapper Class and where can be used ?

A wrapper class is a class whose object wraps or contains primitive data types. When we create an object to wrapper class, it contains a field and in this field, we can store primitive data types. It can be used when an object needs support synchronization in multithreading . Also in parsing operations java wrapper classes becomes quite useful.

13 – What is SSL ? What is TLS ? What is the difference ? How can we use them ?

SSL stands for Secure Socket Layer, TLS stands for Transport Layer Security. They both have cryptographic protocols that authenticate data between servers, systems, applications and users. SSL is today considered less secure compared to TLS. TLS is a newer and safer option. To enable TLS we create a key pair, it can be done using keytool and stored in the keystore.p12 and to configure SSL and TLS we add necessary properties to application.properties file.

14 - Why do you need the intercept-url ?

In one or two sentence; It is used to define what type of URLs are considered secure. Or define which roles has access to this.