There are various types of attacks:

- CSRS (Cross-Site Request Forgery)
- CORS (Cross-Origin Resource Sharing)
- SQL Injection
- XSS (Cross-Site Scripting)

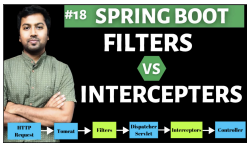
And we need to protect our resources from these attacks, and for that we need proper:

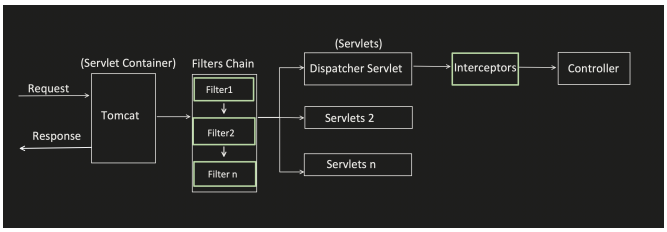
- **Authentication** : Verify who you are
- **Authorization** : Checks what you are allowed to do

That's where Spring boot Security comes into the picture.

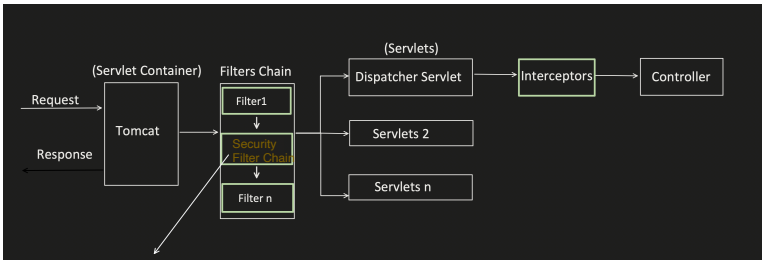
Architecture of Spring Boot Security

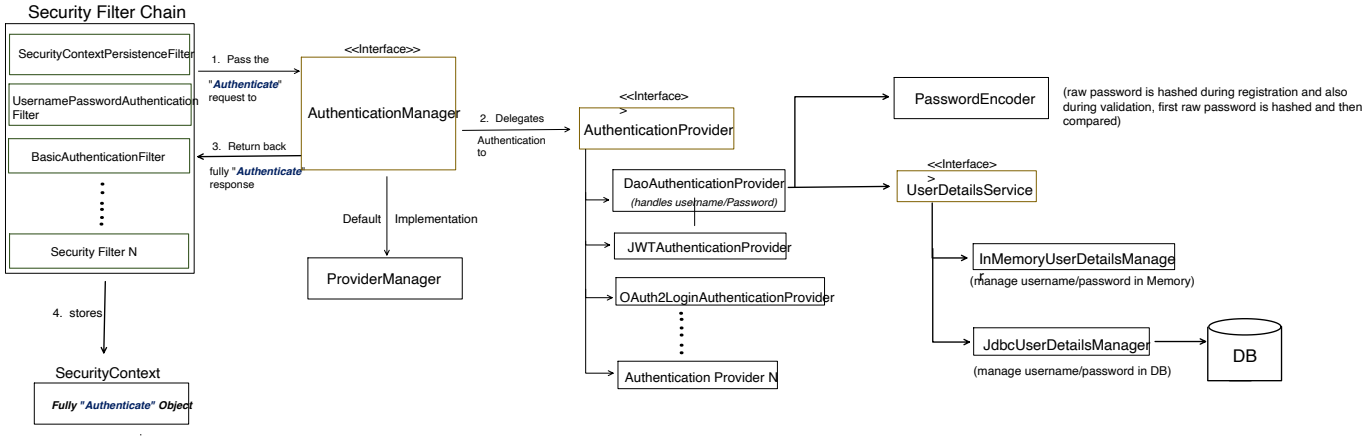
In video no ***#18***, we have already seen, what are filters and where exactly they fit.





Now, lets enhance it for understanding Spring Security





If spring boot project is already present, add below dependencies:

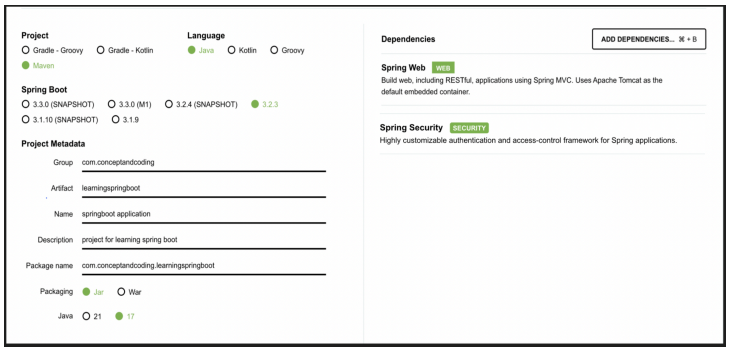
```
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-security</artifactId>
</dependency>
<dependency>
    <groupId>org.springframework.session</groupId>
    <artifactId>spring-session-jdbc</artifactId>
</dependency>
```

→ Provides core feature like:
- Authentication
- Authorization
- Security filters etc.

→ Enable persistent session management
Using relational DB.

If setting up new Spring boot project:

Go to spring initializer i.e. "start.spring.io"



And if we want to persist the session in relational DB, then we need to add below dependency in pom.xml

```
<dependency>
    <groupId>org.springframework.session</groupId>
    <artifactId>spring-session-jdbc</artifactId>
</dependency>
```

Now, lets understand the end to end flow with an example for each individual Authentication and Authorization mechanism:

1. Form Login (Stateful)
2. Basic Authentication (Stateless)
3. JWT (Stateless)
4. OAuth2
    i. Authorization Code (Stateful or Stateless)
    ii. Client Credentials (Stateless)
    iii. Password Grant (Stateless)
5. API Key Authentication (Stateless)

Etc..