# Detailed Explanation of Dependencies and Plugins in pom.xml

## spring-boot-starter-web

This dependency provides all the necessary components to build a Spring Boot web application. It includes an embedded Tomcat server and simplifies the development of RESTful web services. It also includes Spring MVC for handling HTTP requests and responses.

## spring-boot-starter-test

This dependency includes essential testing libraries and frameworks such as:  
- JUnit (for unit testing)  
- Hamcrest (for writing matchers)  
- Mockito (for mocking objects)  
- Spring Boot Test (for integration testing with Spring context)

## spring-boot-starter-data-jpa

This dependency provides integration with the Java Persistence API (JPA) using Hibernate as the default ORM (Object-Relational Mapping) framework. It allows you to work with relational databases in an object-oriented manner, handling CRUD operations and complex queries.

## spring-boot-starter-security

This dependency adds Spring Security features to the application, including authentication and authorization. It simplifies the configuration of security rules and integrates seamlessly with other Spring components.

## spring-security-core

This dependency is a core part of Spring Security that provides low-level security configurations, including password encoding, authentication providers, and role-based access control.

## jjwt-api

This is part of the Java JWT (JSON Web Token) library used for creating and parsing JWT tokens. JWTs are commonly used for secure authentication and data exchange between services.

## jjwt-impl

This dependency provides the actual implementation of JWT token creation and parsing. It is marked with 'runtime' scope because it is only required when the application is running.

## jjwt-jackson

This dependency integrates Jackson (a popular JSON processing library) with the JWT library. It allows JWT tokens to be serialized and deserialized using Jackson.

## lombok

Lombok is a library that reduces boilerplate code in Java. It automatically generates getter, setter, equals, hashCode, and toString methods using annotations like @Data, @Getter, @Setter, and @NoArgsConstructor. The 'provided' scope means it is only needed at compile time and not at runtime.

## postgresql

This dependency provides the PostgreSQL JDBC driver, which enables communication between the Spring Boot application and a PostgreSQL database.

## spring-boot-maven-plugin

This plugin allows you to package the Spring Boot application as an executable JAR or WAR file. It also provides commands to run the application directly using Maven.

## maven-compiler-plugin

This plugin configures the Java compiler settings. The 'source' and 'target' properties are set to 21, indicating that the application is using Java version 21 for compilation.