

Kod szkolenia: **SPRING/EN**

Tytuł szkolenia: **Spring Framework EN**

Dni: 5

Opis:

Addressees of the training:

The training is addressed to Java programmers wishing to develop scalable and easy to maintain applications using Spring framework in the 5.x version.

Objective of the training:

The main objective of the training is the introduction and thorough learning about framework capacities, as well as understanding the idea of programming using interfaces, dependency injections, and aspects. The training has the workshop nature. During the entire week, the participants and the trainer will develop one applications with hands-on experience related to consecutive framework components.

The participants will learn about:

- opportunities provided and applications of the framework
- the idea of control inversion / dependency injections and related benefits
- how to develop and configure own components, and how to use services provided within Spring
- how to separate business logic from auxiliary functionalities, such as logging in, security, or transaction handling using aspects
- how to test applications at unit level and integration level
- how to integrate with JEE solutions

Requirements:

Training participants are required to be able to programme in Java at intermediate level, to have elementary knowledge on technologies forming part of the JEE platform, and to have basic knowledge of SQL and relational databases.

Training parameters:

5*7 hours of lectures and workshops (with clear majority of workshops).

Program szkolenia:



1. Introduction
 - Framework characteristics
 - Programming using interfaces
 - Dependency injection
 - Separation of duties using AOP
 - Project configuration
 - Application structure scheme
2. Spring container
 - Review of available implementations
 - Configuration (XML, annotations, JavaConfig)
 - Dependency injection
 - Conflict solving
 - Bean range and lifecycle
 - Postprocessors
 - Converters
 - Event bus and event programming
 - Spring Expression Language
3. Aspect programming
 - Introduction to AOP concept
 - Terminology
 - Aspect development, configuration and linking
 - Capturing arguments and results returned from methods
 - Context and execution sequence
4. Data access layer
 - Configuration of base connection (standalone, pool, jndi)
 - JDBC templates
 - Transaction manager
 - Configuration of transaction mechanism
 - Transaction approval and withdrawal
 - Introduction to object-relational mapping and JPA standard
 - Integration with JPA and Hibernate framework
 - Development of record layer using Spring Data
5. Presentation layer
 - Model-View-Controller template
 - Introduction to Spring MVC
 - Request processing cycle
 - Configuration of web application (XML, annotations, JavaConfig)
 - Controller structure and mapping
 - Form support
 - Validation
 - Internationalization
 - Integration with other web frameworks
6. Services based on REST architecture
 - Controller mapping
 - Header and cookies support
 - Response statuses



- Exception mapping and support
- Converters and transfer objects
- 7. Reactive programming
 - Introduction
 - Reactive Streams
 - WebFlux framework
- 8. Spring Security
 - Architecture, components and basic security mechanism services
 - Security configuration (authentication, access authorisation, logout, remember-me, csrf filter)
 - Session management
 - Customisation of selected security mechanism components
 - Integration with Spring OAuth2
- 9. Selected issues (optional)
 - Project configuration using Spring Boot
 - Unit and integration tests
 - Task management
 - Use of cache
 - Integration with Java EE
 - Functional programming with Kotlin

