# Spring Boot – framework for micro services

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# whoami

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bottega
IT SOLUTIONS

confitura'14

# History

- 1999 J2EE 1.2
- 2001 xDoclet 1.0
- 2004 Spring Framework 1.0
  - Injection
  - POJO oriented
  - AOP & transactions
- 2006 Java EE 5

# 'Classic' way

- hundreds of thousands LOC
- thousands of tests  ... or not
- hundreds of issues in jira
- and a lot of design patterns

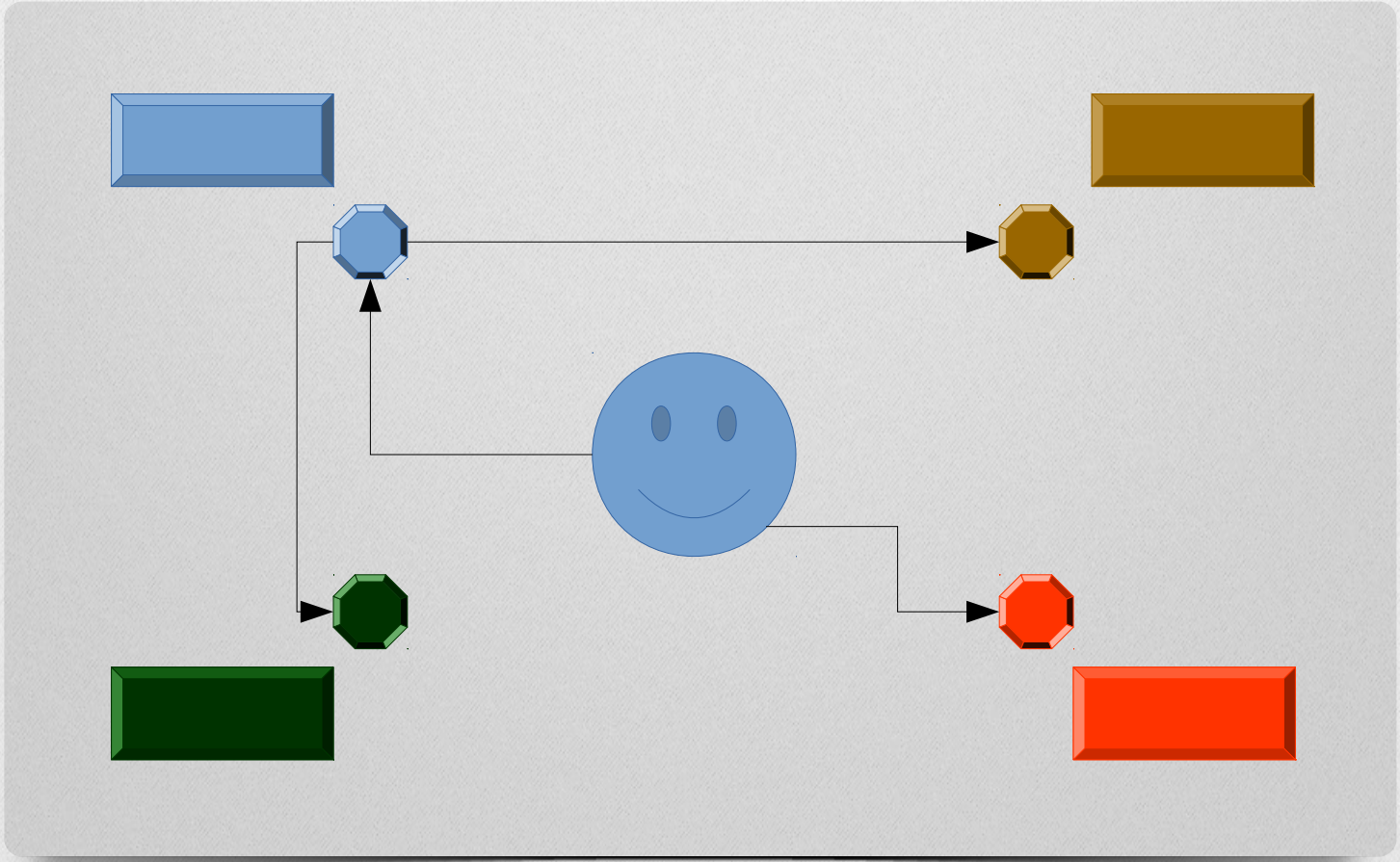
... lava flow, big ball of mud, orgy, yo-yo

# 'Classic' way

# Micro way

- Single responsibility
- Loosely coupled
- Reliable
- Small, light

# Micro way



# Hard?

- Versioning
- Integration testing
- Boilerplate bootstrap code

# History

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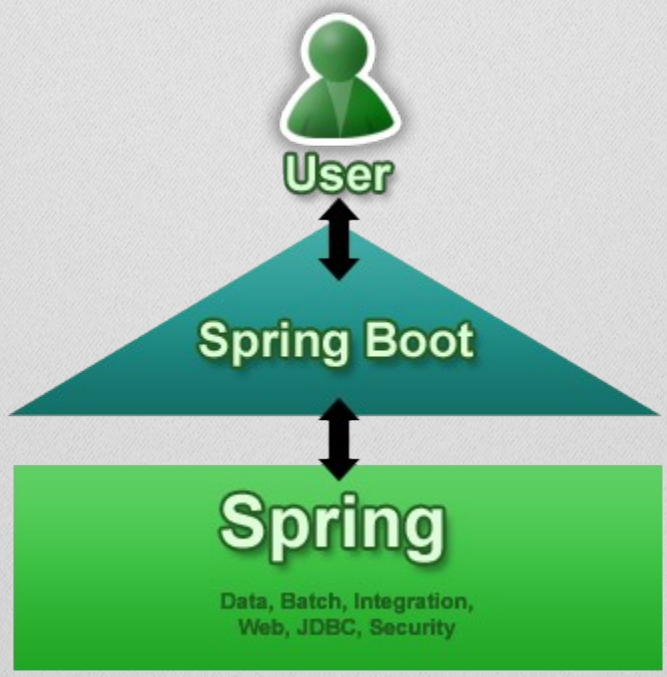
- 2006 Java EE 5
- 2013 Spring Boot!

# Focus




source: spring.io

# Revolution

```
@RestController
@EnableAutoConfiguration
public class HelloWorld {

  @RequestMapping("/")
  public String helloWorld() {
    return "Hello World!";
  }

  public static void main(String[] args) {
    SpringApplication.run(HelloWorld.class, args);
  }

}
```

# Key features

- Stand-alone Spring applications
- Embedded Tomcat or Jetty
- Starter dependencies
- Automatic configuration
- Production-ready environment
- No code generation / no XML config

# Blocks

- SpringApplication
- @EnableAutoConfiguration
- @ConditionalOnClass
- @ConditionalOnBean
- @ConditionalOnExpression

# Sample auto-configuration

```
@Configuration
@ConditionalOnClass({ MBeanExporter.class })
@ConditionalOnMissingBean({ MBeanExporter.class })
@ConditionalOnExpression("${spring.jmx.enabled:true}")
public class JmxAutoConfiguration {
  ...
}
```

# Starters

- spring-boot-starter
- spring-boot-starter-web
- spring-boot-starter-test
- spring-boot-starter-actuator

# Starters

```
<dependency>
  <groupId>org.springframework.boot</groupId>
  <artifactId>spring-boot-starter-web</artifactId>
</dependency>

<plugin>
   <groupId>org.springframework.boot</groupId>
   <artifactId>spring-boot-maven-plugin</artifactId>
</plugin>
```

# Production ready

- Monitoring endpoints
  - /health
  - /info
  - /metrics
  - /mappings
- JMX / SSH
- Auditing

# Properties

```
@ConfigurationProperties(prefix=”mail”)
public class MailProperties {
  private InetAddress serverAddress;
  private Resource template;
}

mail.serverAddress : 84.123.456.32
mail.template : classpath:mail.vm
```

# Profiles

- spring.profiles.active = production,mysql
- configuration per profile:
  - application-production.properties
  - conference-test.properties

# Logging

- log4j
- logback
- java.util.Logging

# Security

- spring-boot-starter-security
- @SecurityAutoConfiguration
- @SecurityProperties
  - security.requireSsl = true

# WAR

```
public class WebInit extends SpringBootServletInitializer {

    @Override
    protected SpringApplicationBuilder
         configure(SpringApplicationBuilder application) {
        return application.sources(SampleApplication.class);
    }

}
```

# Tests

```
@SpringApplicationConfiguration(classes =
    Application.class)

@ContextConfiguration(classes = Application,
    loader = SpringApplicationContextLoader)

@IntegrationTest
```

# It's Spring

# How it helps?

- Dramatically reduces boilerplate code
- Enables polyglot
- Simplifies integration testing
- Simplifies environment maintenance

# You have questions

I (probably) have answers

END! THANK YOU