Spring MVC Tutorial (@Java Config.+Servlet 3)

Hello World Example

I will take the previous Gradle + Spring MVC XML example, rewrite it to support @JavaConfig annotation configuration, no more XML files.

Technologies used :

1. Gradle 2.0
2. Spring 4.1.6.RELEASE
3. Tomcat 7 or Jetty 9
4. Eclipse 4.4
5. JDK 1.7
6. Logback 1.1.3
7. Boostrap 3

1. Gradle

1.1 Review the build.gradle file, this should be self-explanatory.

➢ Build.gradle

```
apply plugin: 'java'
apply plugin: 'war'
apply plugin: 'eclipse-wtp'
//apply plugin: 'jetty' //too old, Jetty 6, use gretty plugin
apply plugin: 'org.akhikhl.gretty'

// JDK 7
sourceCompatibility = 1.7
targetCompatibility = 1.7

repositories {
    mavenLocal()
    mavenCentral()
}

dependencies {
    compile 'ch.qos.logback:logback-classic:1.1.3'
    compile 'org.springframework:spring-webmvc:4.1.6.RELEASE'
    compile 'javax.servlet:jstl:1.2'

    //include in compile only, exclude in the war
    providedCompile 'javax.servlet:servlet-api:2.5'
}

//Gretty Embedded Jetty
```

```
buildscript {
  repositories {
    jcenter()
  }

  dependencies {
    classpath 'org.akhikhl.gretty:gretty:+'
  }
}

// Don't use Jetty8, even it's a servlet 3.0+ container,
// but not support non-jar WebApplicationInitializer scanning.
// It will cause "No Spring WebApplicationInitializer types detected on
classpath"
gretty {
  port = 8080
  contextPath = 'spring4'
  servletContainer = 'jetty9' //tomcat7 or tomcat8
}

//For Eclipse IDE only
eclipse {

  wtp {
    component {

      //define context path, default to project folder name
      contextPath = 'spring4'

    }

  }
}
```

1.2 Make this project supports Eclipse IDE. Now, you can import the project into Eclipse IDE.

```
your-project$ gradle eclipse
```

2. Spring @Configuration

Spring @Configuration and its XML equivalent.

2.1 Spring annotation configuration to scan the service classes.

SpringRootConfig.java

```
package com.mkyong.helloworld.config;

import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;




@Configuration
@ComponentScan({ "com.mkyong.helloworld.service" })
public class SpringRootConfig {
}
```

XML equivalent.

spring-core-config.xml

```
<beans xmlns="http://www.springframework.org/schema/beans"
        xmlns:context="http://www.springframework.org/schema/context"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:mvc="http://www.springframework.org/schema/mvc"
        xsi:schemaLocation="
       http://www.springframework.org/schema/beans
       http://www.springframework.org/schema/beans/spring-beans.xsd
       http://www.springframework.org/schema/context
       http://www.springframework.org/schema/context/spring-context.xsd ">

        <context:component-scan base-package="com.mkyong.helloworld.service" />

</beans>
```

2.2 Extends abstract class WebMvcConfigurerAdapter.

SpringWebConfig.java

```
package com.mkyong.helloworld.config;

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;
import org.springframework.web.servlet.config.annotation.EnableWebMvc;
import
org.springframework.web.servlet.config.annotation.ResourceHandlerRegistry;
import
org.springframework.web.servlet.config.annotation.WebMvcConfigurerAdapter;
import org.springframework.web.servlet.view.InternalResourceViewResolver;
import org.springframework.web.servlet.view.JstlView;

@EnableWebMvc //<mvc:annotation-driven />
@Configuration
@ComponentScan({ "com.mkyong.helloworld.web" })
public class SpringWebConfig extends WebMvcConfigurerAdapter {

        @Override
        public void addResourceHandlers(ResourceHandlerRegistry registry) {
                registry.addResourceHandler("/resources/**")
                        .addResourceLocations("/resources/");
        }

        @Bean
        public InternalResourceViewResolver viewResolver() {
                InternalResourceViewResolver viewResolver
                        = new InternalResourceViewResolver();
                viewResolver.setViewClass(JstlView.class);
                viewResolver.setPrefix("/WEB-INF/views/jsp/");
                viewResolver.setSuffix(".jsp");
                return viewResolver;
        }

}
```

XML equivalent.

spring-web-config.xml

```
<beans xmlns="http://www.springframework.org/schema/beans"
        xmlns:context="http://www.springframework.org/schema/context"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:mvc="http://www.springframework.org/schema/mvc"
        xsi:schemaLocation="
        http://www.springframework.org/schema/beans
        http://www.springframework.org/schema/beans/spring-beans.xsd
        http://www.springframework.org/schema/mvc
        http://www.springframework.org/schema/mvc/spring-mvc.xsd
        http://www.springframework.org/schema/context
        http://www.springframework.org/schema/context/spring-context.xsd ">

        <context:component-scan base-package="com.mkyong.helloworld.web" />

        <bean
class="org.springframework.web.servlet.view.InternalResourceViewResolver">
                <property name="viewClass"
value="org.springframework.web.servlet.view.JstlView"/>
                <property name="prefix" value="/WEB-INF/views/jsp/" />
                <property name="suffix" value=".jsp" />
        </bean>

        <mvc:resources mapping="/resources/**" location="/resources/" />

        <mvc:annotation-driven />

</beans>
```

3. Servlet 3.0+ Container

Create a ServletInitializer class, Servlet 3.0+ container will pick up this class and run it automatically. This is the replacement class for web.xml

```
package com.mkyong.helloworld.servlet3;

import
org.springframework.web.servlet.support.AbstractAnnotationConfigDispatcherServle
tInitializer;

import com.mkyong.helloworld.config.SpringRootConfig;
import com.mkyong.helloworld.config.SpringWebConfig;

public class MyWebInitializer extends
                AbstractAnnotationConfigDispatcherServletInitializer {

        @Override
        protected Class<?>[] getRootConfigClasses() {
                return new Class[] { SpringRootConfig.class };
        }

        @Override
        protected Class<?>[] getServletConfigClasses() {
                return new Class[] { SpringWebConfig.class };
        }
        @Override
        protected String[] getServletMappings() {
                return new String[] { "/" };
        }

}
```

XML equivalent.

web.xml

```
<web-app xmlns="http://java.sun.com/xml/ns/javaee"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
        http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
        version="2.5">

        <display-name>Gradle + Spring MVC Hello World</display-name>
        <description>Spring MVC web application</description>

        <!-- For web context -->
        <servlet>
                <servlet-name>hello-dispatcher</servlet-name>
                <servlet-class>
                        org.springframework.web.servlet.DispatcherServlet
                </servlet-class>
                <init-param>
                        <param-name>contextConfigLocation</param-name>
                        <param-value>/WEB-INF/spring-mvc-config.xml</param-
value>
                </init-param>
                <load-on-startup>1</load-on-startup>
        </servlet>

        <servlet-mapping>
                <servlet-name>hello-dispatcher</servlet-name>
                <url-pattern>/</url-pattern>
        </servlet-mapping>

        <!-- For root context -->
        <listener>
                <listener-class>
                        org.springframework.web.context.ContextLoaderListener
                </listener-class>
        </listener>

        <context-param>
                <param-name>contextConfigLocation</param-name>
                <param-value>/WEB-INF/spring-core-config.xml</param-value>
        </context-param>

</web-app>
```

4. Demo

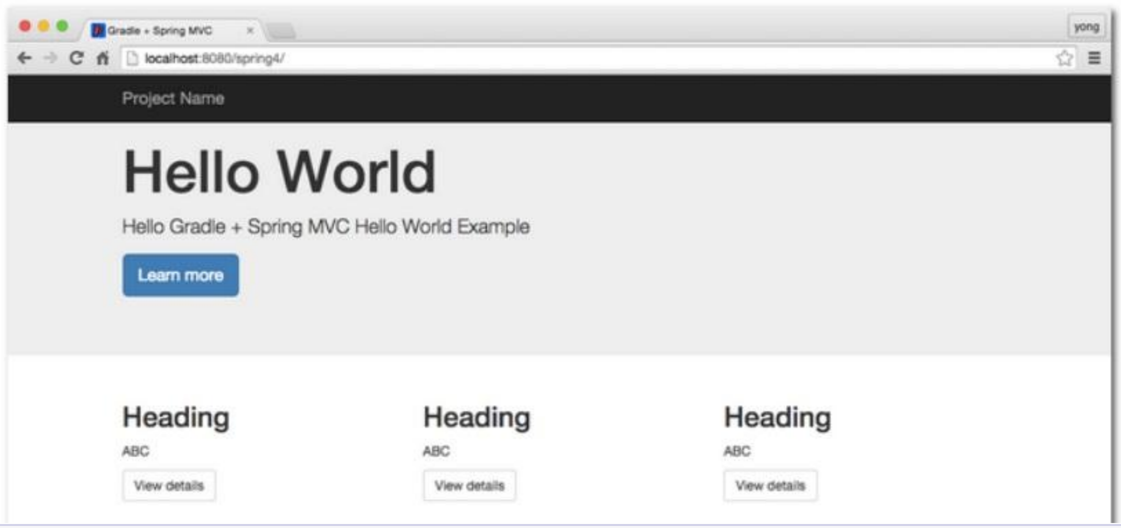
4.1 To run this project. Issues gradle jettyRun to start the embedded Jetty container.

Terminal

```
your-project$ gradle jettyRun

21:56:34 INFO  Jetty 9.2.10.v20150310 started and listening on port 8080
21:56:34 INFO  spring4 runs at:
21:56:34 INFO    http://localhost:8080/spring4
Press any key to stop the server.
> Building 87% > :jettyRun
```

4.2 http://localhost:8080/spring4/



Hello World

Hello Gradle + Spring MVC Hello World Example

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