

# MVC 1.0

**Endlich am Ziel**

Christian Kaltepoth / @chkal

# MVC 1.0

~~Endlich~~ Fast am Ziel

Christian Kaltepoth / @chkal

# Über mich...



**Christian  
Kaltepoth**  
chkal

Block or report user

Senior Developer @ ingenit in  
Germany, open source guy, speaker,  
JSR 371 spec lead, JAX-RS  
committer and more...

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 Duisburg, Germany  
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 <http://blog.kaltepoth.de/>

## Organizations



Overview

**Repositories** 111

Projects 0

Stars 108

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Type: All ▾

Language: All ▾

## krazo

Forked from eclipse-ee4j/krazo

● Java 9 Apache License 2.0 Updated 5 days ago



## mvc-tck

Forked from mvc-spec/mvc-tck

Technology Compatibility Kit for JSR 371

● Java 7 Apache License 2.0 Updated 13 days ago



## mvc-spec

Forked from mvc-spec/mvc-spec

MVC 1.0 API

● Java 12 Other Updated 16 days ago



## jaxrs-api

Forked from eclipse-ee4j/jaxrs-api

Jaxrs

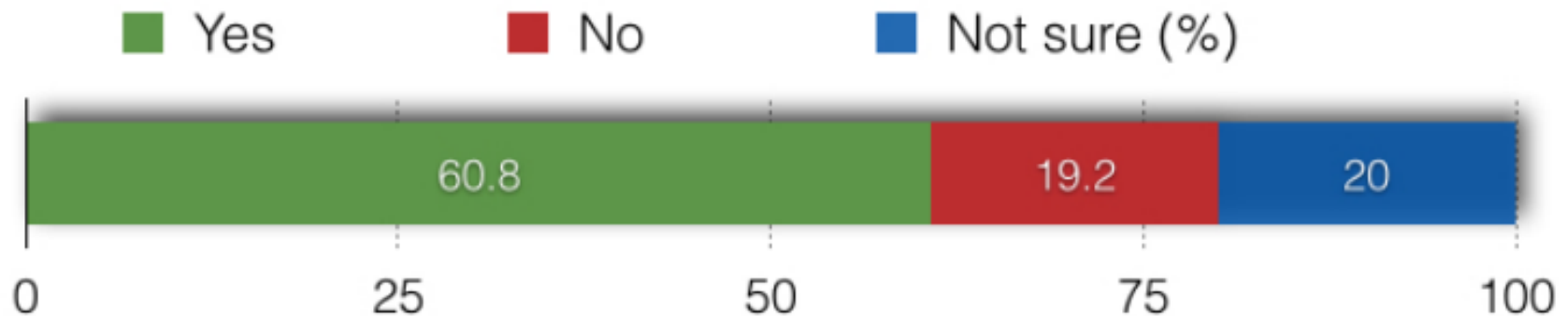
● Java 37 Other Updated on 5 Mar



**Warum  
MVC 1.0?**

# Java EE 8 Community Survey

Should Java EE provide support for MVC, alongside JSF?



[https://java.net/downloads/javaee-spec/JavaEE8\\_Community\\_Survey\\_Results.pdf](https://java.net/downloads/javaee-spec/JavaEE8_Community_Survey_Results.pdf)

**JavaServer Faces**

**vs.**

**MVC 1.0**

**JavaServer Faces**

**=**

**Component Oriented**

**MVC 1.0**

**=**

**Action Oriented**



**Component Oriented**

**vs.**

**Action Oriented**

# **Das MVC Entwurfsmuster**



```
graph TD; C[Controller] --- M[Model]; C --- V[View]; M --- V;
```

Controller

Model

View

Web Browser

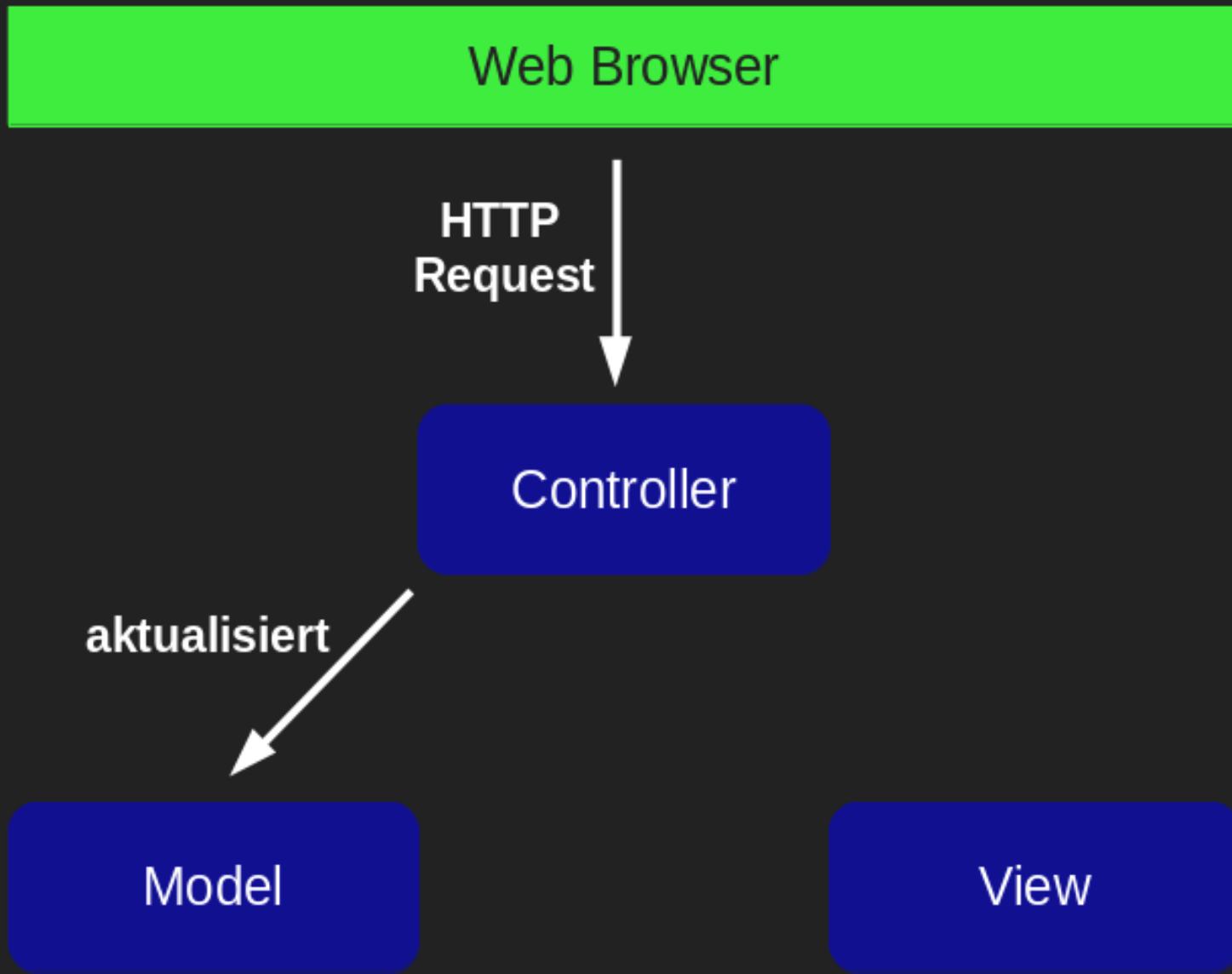
HTTP  
Request

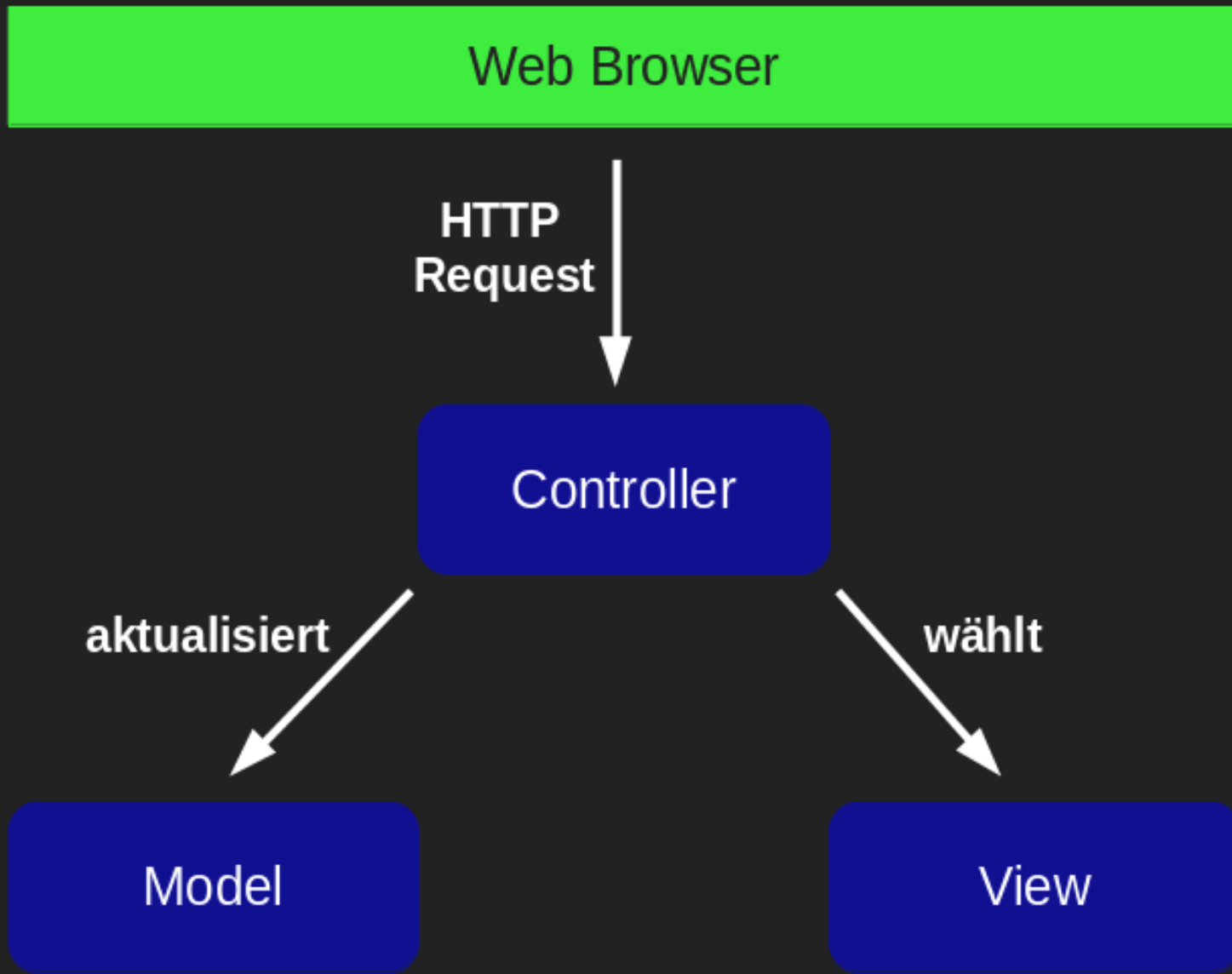


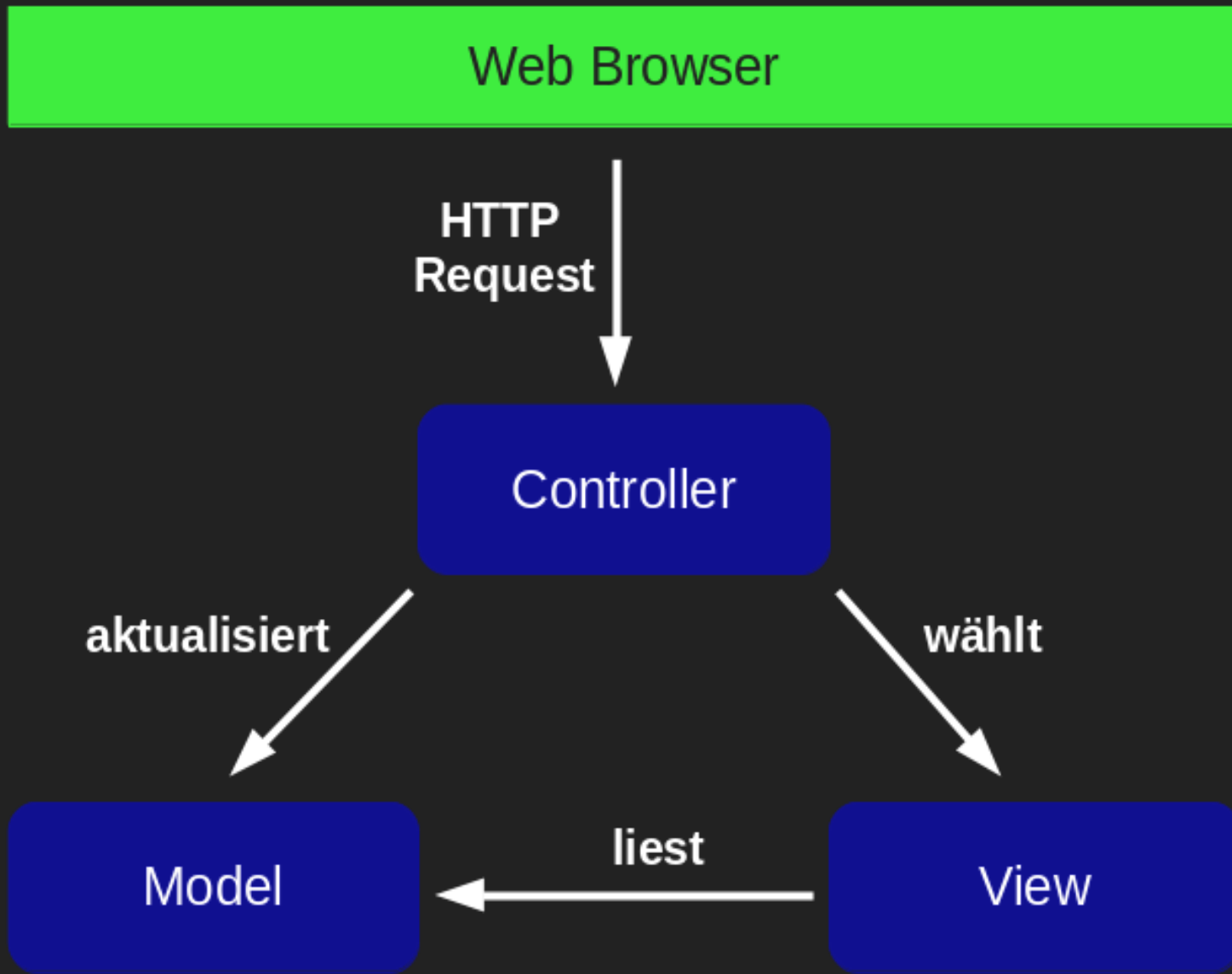
Controller

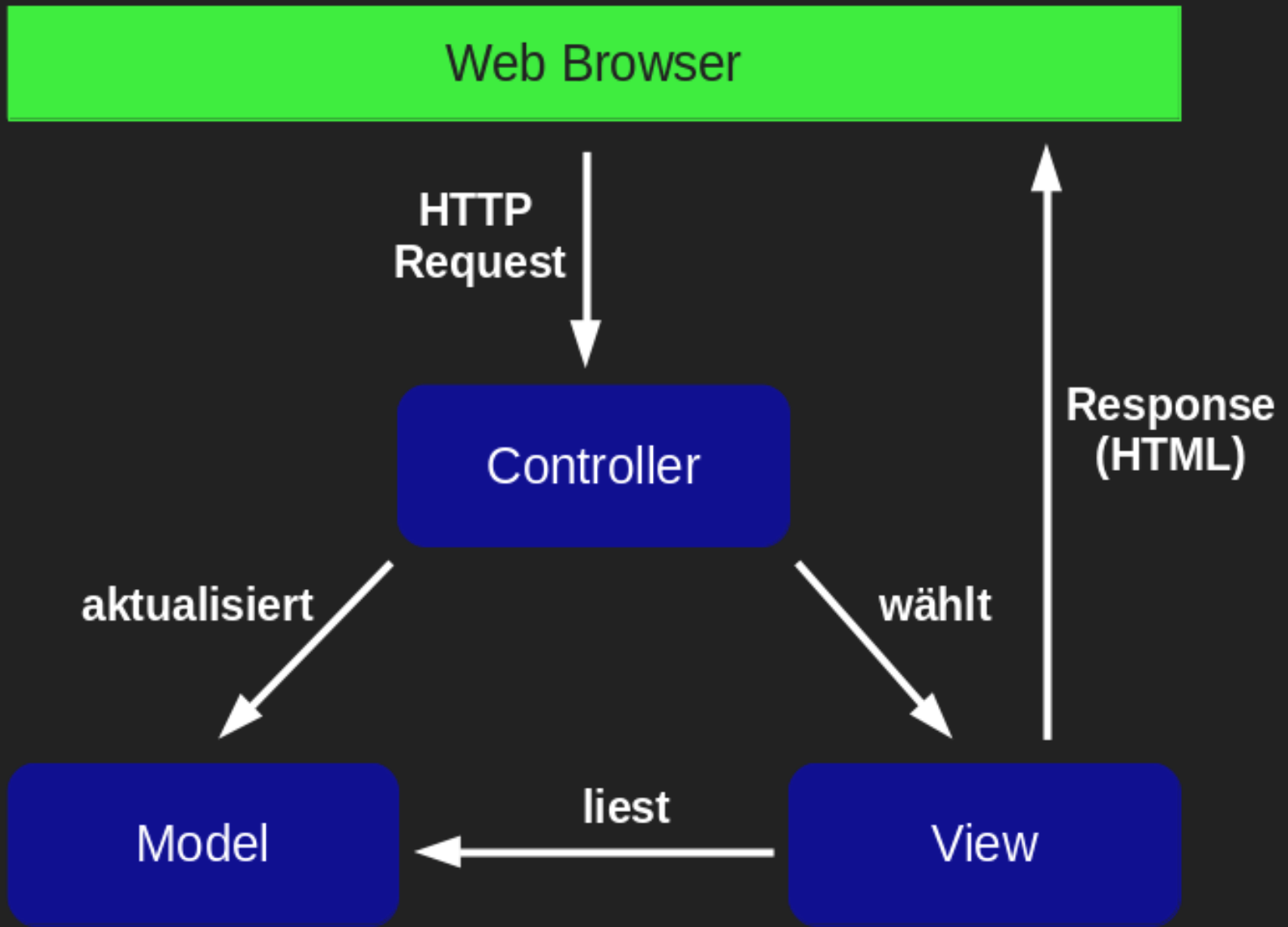
Model

View



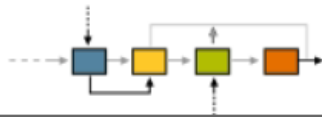








# JSR 371



Community Development of Java Technology Specifications

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## JSRs



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## JSRs: Java Specification Requests

### JSR 371: Model-View-Controller (MVC 1.0) Specification

Stage	Access	Start	Finish
Proposed Final Draft	<a href="#">Download page</a>	28 Sep, 2018	
Public Review Ballot	<a href="#">View results</a>	06 Feb, 2018	12 Feb, 2018
Public Review	<a href="#">Download page</a>	05 Jan, 2018	04 Feb, 2018
Transfer Ballot	<a href="#">View results</a>	17 Jan, 2017	30 Jan, 2017
JSR Renewal Ballot	<a href="#">View results</a>	29 Nov, 2016	12 Dec, 2016
Early Draft Review 2	<a href="#">Download page</a>	08 Oct, 2015	07 Nov, 2015
Early Draft Review	<a href="#">Download page</a>	31 Mar, 2015	30 Apr, 2015
Expert Group Formation		23 Sep, 2014	02 Feb, 2015
JSR Review Ballot	<a href="#">View results</a>	09 Sep, 2014	22 Sep, 2014
JSR Review		26 Aug, 2014	08 Sep, 2014

Status: **Active**

JCP version in use: 2.10

Java Specification Participation Agreement version in use: 2.0

# JavaOne 2016

## Rationale for Proposed Changes



### New Functionality

- Cloud apps make many remote REST calls. Need a **client-side circuit breaker** added to JAX-RS
- Need a **secret vault** because there's no way to do this today using **standards**
- **Need OAuth and OpenID** support because those technologies have rapidly emerged as standards
- Need **externalized configuration store** to make applications retargetable across environments
- Need basic **multi-tenancy** support to accommodate needs of more complex apps and offer higher density
- **Need standard way of health checking** Java-based apps

### Dropped Functionality

- **JMS** is no longer very relevant in cloud. Proposed to stay at JMS 2.0 standard (vs. upgrading to JMS 2.1 ).
- Cloud apps often ship headless, making **MVC** largely irrelevant
- Current **Management** JSR not widely used



# Oracle → Community

## JSR #371

### Model-View-Controller (MVC 1.0) Specification

#### Transfer Ballot

Ballot duration: 2017-01-17 to: 2017-01-30
























#### Special Vote Instructions:

Santiago Pericasgeertsens, and Manfred Riem, Co-Sped. Leads, representing Oracle, request a JSR Transfer Ballot of JSR 371: Model-View-Controller (MVC 1.0) Specification, to Ivar Grimstad, an individual.


These are the final results of the Transfer Ballot for JSR #371. The EC has approved this ballot.

#### Votes

##### EC

Azul Systems, Inc. 	Credit Suisse 	Eclipse Foundation, Inc. 	Fujitsu Limited 
Gemalto M2M GmbH 	Goldman Sachs & Co. 	Grimstad, Ivar 	Hazelcast 
Hewlett Packard Enterprise 	IBM 	* <i>Intel Corp.</i> 	Keil, Werner 
London Java Community 	MicroDoc 	NXP Semiconductors 	Oracle 
Red Hat 	SAP SE 	Software AG 	SouJava 
Tomitribe 	Twitter, Inc. 	V2COM 	

#### Icon Legend

Yes 

No 

Abstain 

Not voted 

# Was passierte dann?

- Apache License 2.0
- Neue Infrastruktur (GitHub, CI, Webseite)
- Arbeit an Referenzimplementierung
- Erstellung des TCK
- Java Community Process:
  - Public Review (PR)
  - Proposed Final Draft (PFD)

**MVC 1.0**

**basiert auf**

**Java EE 8**

# MVC im Kontext

MVC 1.0

JAX-RS

CDI

Servlet

Bean Validation

# **JAX-RS**

**(nur eine Slide)**

# JAX-RS Beispiel

```
@Path("/hello")
@Produces("application/json")
public class HelloResource {

    @GET
    public JsonObject greet() {
        return Json.createObjectBuilder()
            .add("message", "Hello JAX-RS!");
    }
}
```



# **Hello World**

**mit**

## **MVC 1.0**

# Controller

```
@Controller
@Path("/hello")
public class HelloController {

    @GET
    public String render() {
        return "helloworld.jsp";
    }

}
```

# View

/WEB-INF/views/helloworld.jsp

```
<!DOCTYPE html>
<html>
  <head>
    <title>MVC Demo</title>
  </head>
  <body>
    <h1>Hello world</h1>
  </body>
</html>
```

# Controller

```
@Controller
@Path("/hello")
public class HelloController {

    @GET
    @View("helloworld.jsp")
    public void render() {
        // ...
    }
}
```

# Das Modell

- javax.mvc.Models
- Basierend auf CDI

# javax.mvc.Models

```
@Controller
@Path("/hello")
public class HelloController {

    @Inject
    private Models models;

    @GET
    public String greet() {
        models.put( "message", "Hello world!" );
        return "helloworld.jsp";
    }
}
```

# javax.mvc.Models

/WEB-INF/views/helloworld.jsp

```
<!DOCTYPE html>
<html>
  <head>
    <title>MVC Demo</title>
  </head>
  <body>
    <h1>${message}</h1>
  </body>
</html>
```

# Views in MVC 1.0

- JavaServer Pages
- Facelets



# JSP als View Technologie

```
models.put( "messages", Arrays.asList(
    "Hello JCON 2019",
    "MVC 1.0 rocks"
) );
```

```
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>

<c:if test="${not empty messages}">
    <ul>
        <c:forEach var="message" items="${messages}">
            <li>${message}</li>
        </c:forEach>
    </ul>
</c:if>
```

# **ViewEngine SPI**

# Custom ViewEngines

- Thymeleaf
- FreeMarker
- Velocity
- Handlebars
- Mustache
- StringTemplate
- Jade
- AsciiDoc
- JSR223
- React

# Beispiel: Thymeleaf

# Thymeleaf

```
@Controller
@Path("/thymeleaf")
public class ThymeleafController {

    @Inject
    private Models models;

    @GET
    public String render() {

        models.put( "messages", Arrays.asList(
            "Text #1", "Text #2", "Text #3"
        ) );

        return "thymeleaf.html";

    }

}
```

# Thymeleaf

/WEB-INF/views/thymeleaf.html

```
<!-- ... -->

<table>
  <tr th:each="msg: ${messages}">
    <td th:text="${msg}">
      Some text
    </td>
  </tr>
</table>

<!-- ... -->
```

```
<table>
  <tr>
    <td>Text #1</td>
  </tr>
  <tr>
    <td>Text #2</td>
  </tr>
  <tr>
    <td>Text #3</td>
  </tr>
</table>
```

# Formulare

# Formulare

/WEB-INF/views/form.jsp

```
<form action="./form" method="POST">
```

Bitte geben Sie Ihren Namen ein:

```
<input type="text" name="name">
```

Bitte geben Sie Ihr Alter ein:

```
<input type="text" name="age">
```

```
<input type="submit" value="Absenden"/>
```

```
</form>
```



# Formulare

```
public class HelloForm {  
  
    @MvcBinding  
    @FormParam("name")  
    private String name;  
  
    @MvcBinding  
    @FormParam("age")  
    private Integer age;  
  
    /* getter + setter */  
  
}
```

# Formulare

```
@Controller
@Path("/form")
public class FormController {

    @Inject
    private Models models;

    @POST
    public String post( @BeanParam HelloForm form ) {

        models.put( "message", "Hello " + form.getName() );
        return "form.jsp";

    }

}
```

# **Validation**

**JSR 380**

**Bean Validation**

# Validierung

```
public class HelloForm {  
  
    @MvcBinding  
    @FormParam("name")  
    @Size(min = 2, message = "Geben Sie Ihren Namen ein")  
    private String name;  
  
    @MvcBinding  
    @FormParam("age")  
    @Min(value = 18, message = "Sie müssen 18 Jahre sein")  
    private Integer age;  
  
    /* getter + setter */  
  
}
```

# Validierung

```
@Controller
@Path("/form")
public class FormController {

    @Inject
    private BindingResult bindingResult;

    @POST
    public String post( @BeanParam @Valid HelloForm form ) {

        if( bindingResult.isFailed() ) {
            models.put( "messages", bindingResult.getAllMessages() );
            return "form.jsp";
        }

        // Verarbeitung des Forms...
    }
}
```

# MVC kann mehr...

- Einfache Redirects aus Controller
- Internationalisierung / Lokalisierung
- CDI Scope: `@RedirectScoped`
- CDI Events
- ViewEngine SPI
- HTML/JS Encoding/Escaping

# Zeitplan

- ☒ Q3 2014 Expert Group formed
- ☒ Q1 2015 Early Draft
- ☒ Q4 2015 Early Draft 2
- ☒ Q1 2018 Public Review
- ☒ Q4 2018 Proposed Final Draft
- ☐ Q4 2019 Final Release





JAKARTA EE

# Feedback erwünscht

<https://www.mvc-spec.org/>

# Danke!

## Fragen?

<https://www.mvc-spec.org/>

Christian Kaltepoth / @chkal