Università della Svizzera italiana

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A conversation based approach for modeling REST APIs

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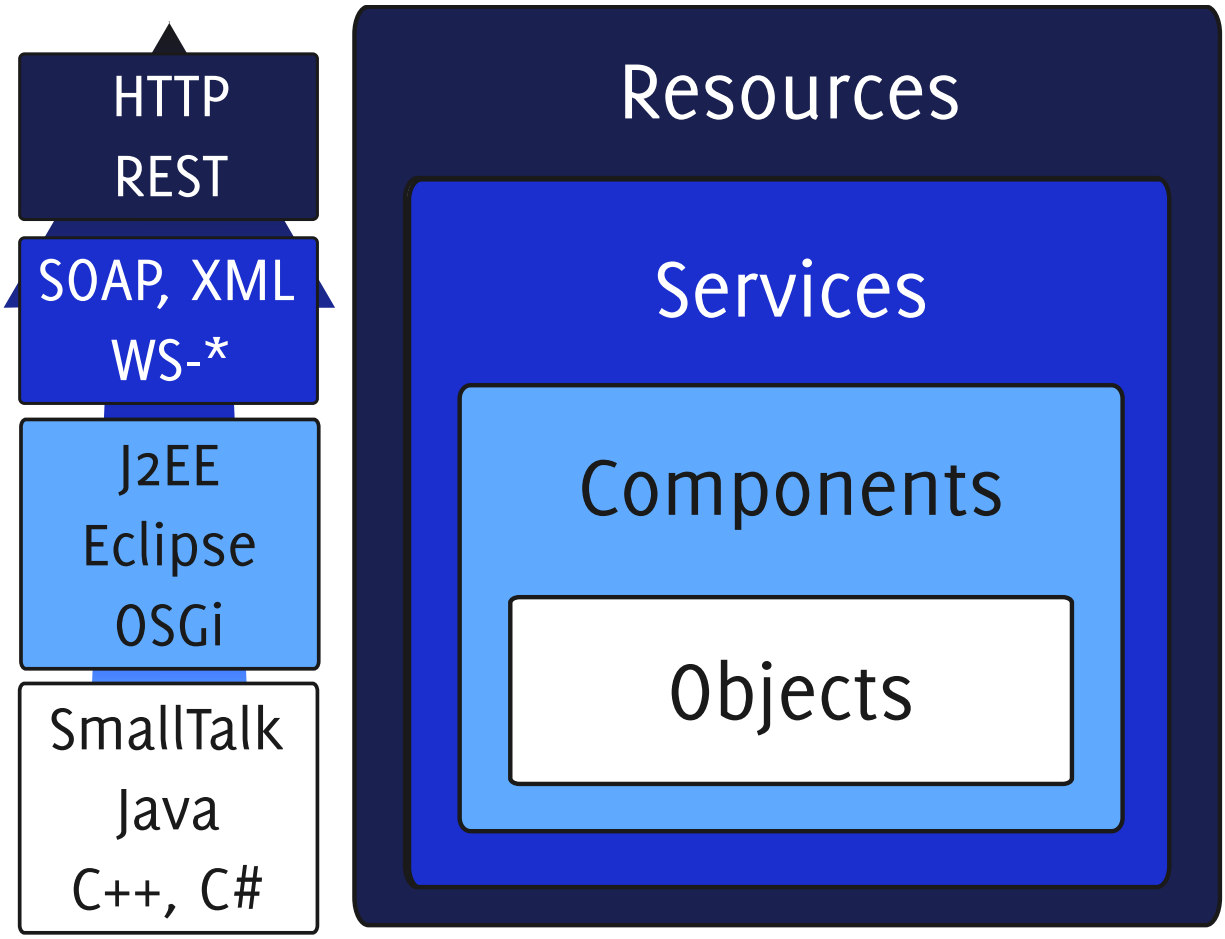
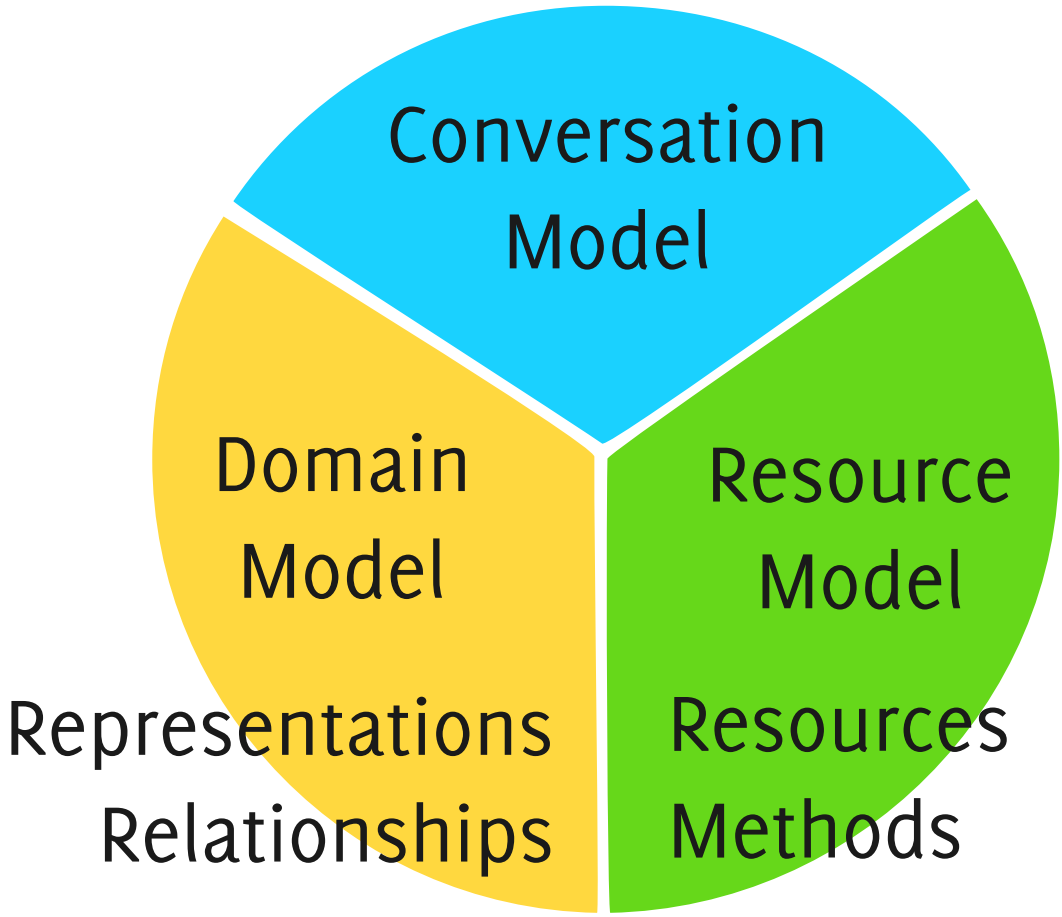
Abstractions



Modeling RESTful Web APIs



Redirect?

```
GET /booking/42?payment HTTP/1.1
```

```
HTTP/1.1 302
Link: </payment?booking=42>; rel="payment"
```

```
GET /payment?booking=42 HTTP/1.1
```

```
HTTP/1.1 200
```


Long Running Request?

```
POST /slow HTTP/1.1
```

```
HTTP/1.1 202 Accepted
Location: /slow/42
```

…

```
GET /slow/42
```

```
HTTP/1.1 200
```

…

```
GET /slow/42
```

```
HTTP/1.1 303 See Other
Location: /result/42
```

```
GET /result/42
```

```
HTTP/1.1 200
```

?

```
GET / HTTP/1.1
```

```
HTTP/1.1 302
Location: /blog
```

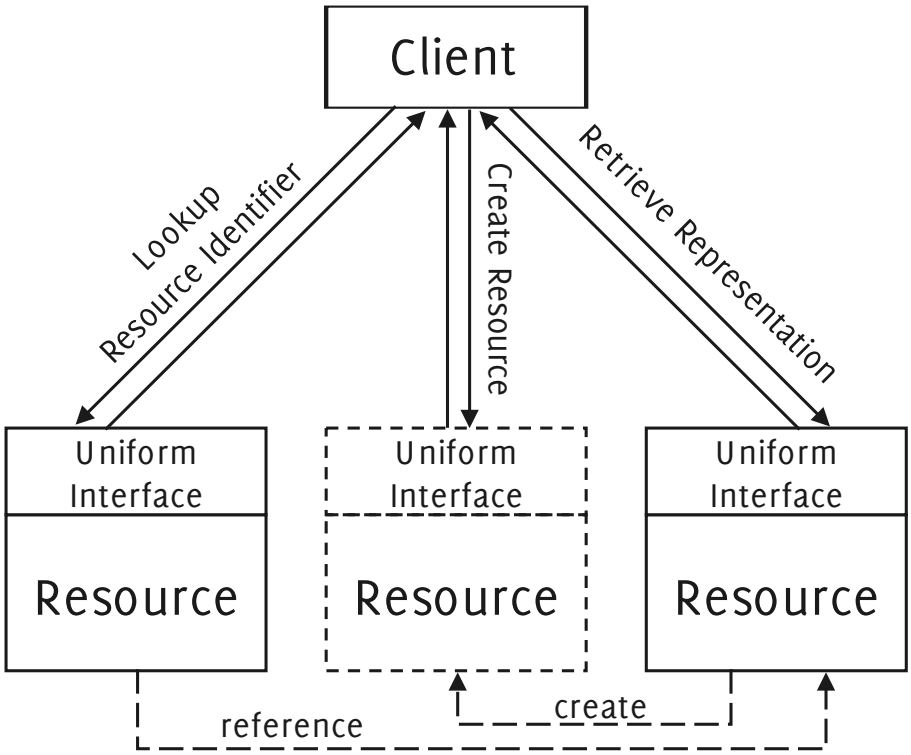
```
GET /blog HTTP/1.1
```

```
HTTP/1.1 200
Link: </blog/add>; rel="create"
```

```
POST /blog/add HTTP/1.1
Slug: my post
```

```
HTTP/1.1 201 Created
Location: /blog/my-post/
```

RESTful Conversation



Link Relationships (Hypermedia)

Conversation

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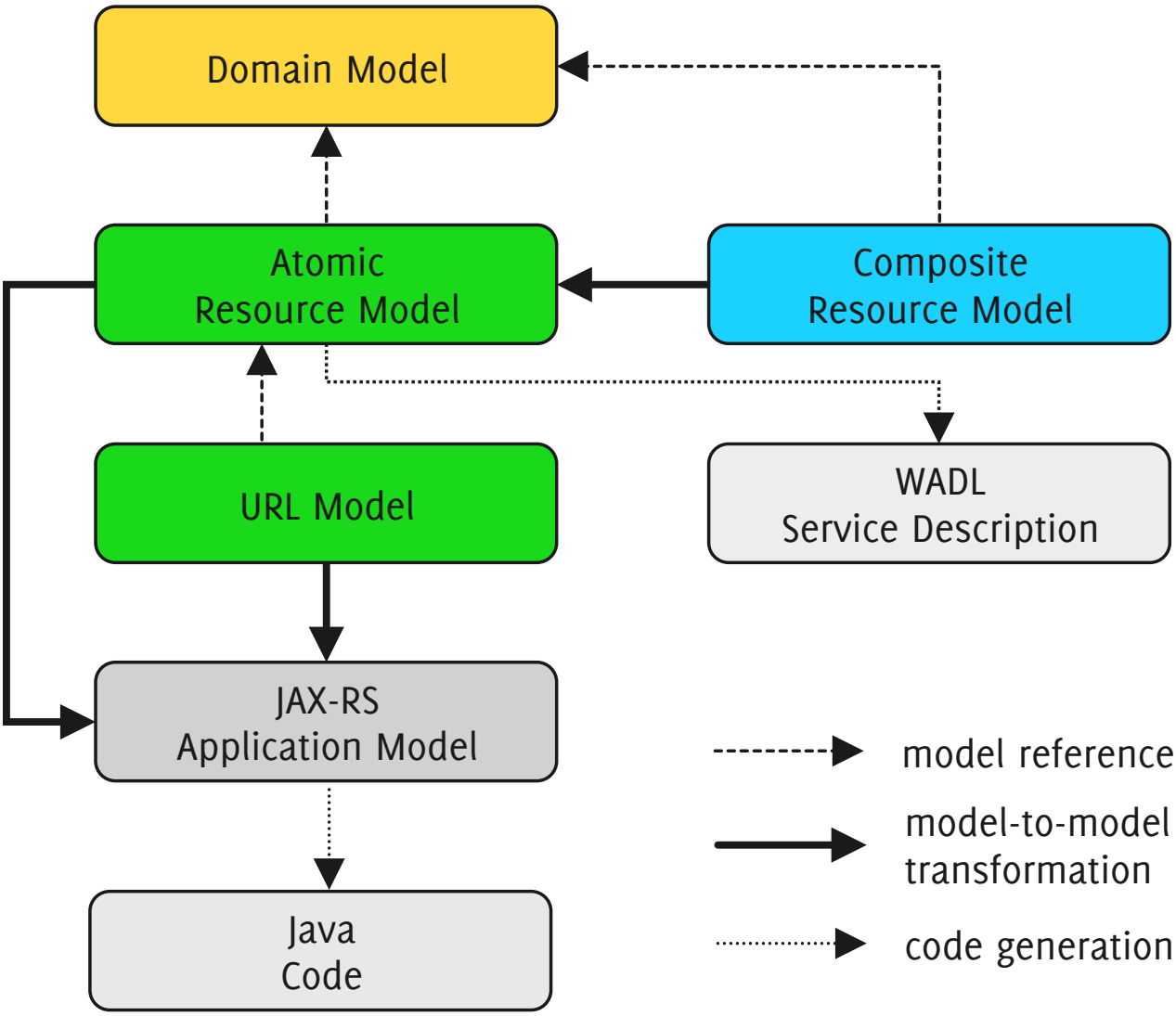
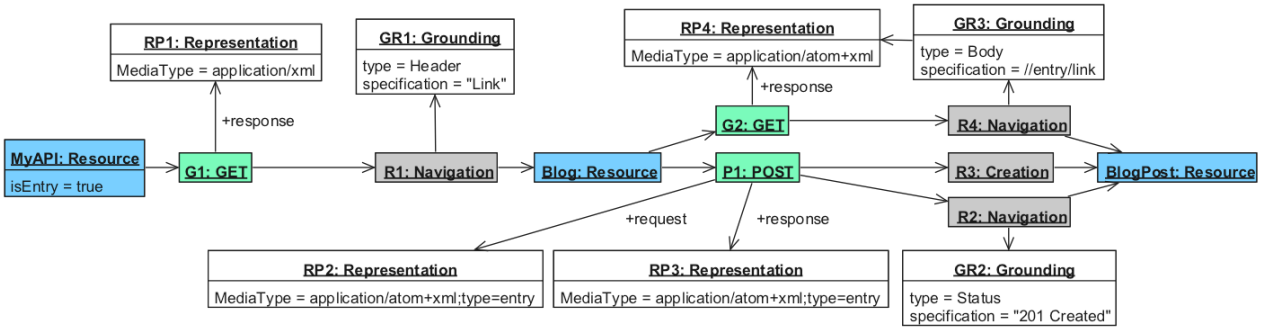
abstraction to simplify descriptions of RESTful Web APIs

Model-Driven Service Engineering



F. Haupt, D. Karastoyanova, F. Leymann, and B. Schroth, A model-driven approach for REST compliant services, IEEE International Conference on Web Services (ICWS), IEEE, 2014.

Atomic Resource Model



Composite Resource Model

"Collection" is a conversation type aggregating multiple interactions with one or more resources.

The conversation type can be reused and instantiated multiple times across the API description

Conversation Types

- Redirection
- Long Running Requests
- Collection
- Try-Confirm/Cancel

Next Steps

- Model conversations themselves (all possible interactions with 2 or more participants)
- Use a suitable notation (BPMN Choreographies?)
- Uncover recurring conversation patterns

Question

- Which modeling language would you use to precisely describe conversations?