Enterprise System Integration

Practical Session 8

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Base code

- [GitHub](https://github.com/spring-projects/spring-hateoas-examples)

Hypermedia:
- [Bitbucket](https://bitbucket.org/orlenyslp/esi-2019/src/master/)

Base code:
- [Bitbucket](https://bitbucket.org/manuel_camargo/rentit/src/master/)

Slides:
- [Kodu.ut.ee](http://kodu.ut.ee/~chavez85/esi/slides/)
• REST-based resources provide not just data but controls. The last ingredient to form a flexible service are detailed affordances on how to use the various controls.
class Employee {

@Id @GeneratedValue
private Long id;

private String name;
private String role;
...
}

class Manager {

@Id @GeneratedValue
private Long id;

private String name;
...
}

• Look up all employees
• Look up a single
• Find an Employee's Manager based upon employee id
## Changes

Representation models (Server / Client)

<table>
<thead>
<tr>
<th><strong>Hatoas 0.25.0</strong> (Spring latest)</th>
<th><strong>Hatoas 1.0.0</strong> (Spring 2.0.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResourceSupport</td>
<td>RepresentationModel</td>
</tr>
<tr>
<td>Resource</td>
<td>EntityModel</td>
</tr>
<tr>
<td>Resources</td>
<td>CollectionModel</td>
</tr>
<tr>
<td>ResourceAssembler</td>
<td>RepresentationModelAssembler</td>
</tr>
<tr>
<td>toResource(...)</td>
<td>toModel(...)</td>
</tr>
<tr>
<td>toResources(...)</td>
<td>toCollectionModel(...)</td>
</tr>
</tbody>
</table>
Changes

• Media Types:
  • HAL – Hypermedia
  • HAL-FORMS (Affordances)
  • Collection+JSON
  • UBER - Uniform Basis for Exchanging Representations
  • Custom media type

• RepresentationModel.getLinks() now exposes a Links instance (over a List<Link>). Less code for adding links

• IanaLinkRelations (e.g. Self):

  https://www.iana.org/assignments/link-relations/link-relations.xhtml
Current state

Rentit Transformation

@EnableHypermediaSupport(type = EnableHypermediaSupport.HypermediaType.HAL)

http://localhost:8080/api/sales/plants?name=min&startDate=2019-04-01&endDate=2019-04-01

http://localhost:8080/api/sales/orders

```json
{
    "id": 1,
    "plant": {
        "id": 1,
        "name": "Mini excavator",
        "description": "1.5 Tonne Mini excavator",
        "price": 150
    },
    "rentalPeriod": {
        "startDate": "2019-04-02",
        "endDate": "2019-04-04"
    },
    "status": "OPEN"
}
```
Update code

- Change the dependencies versions in POM add repositories (downgrade Spring and upgrade HATEOAS)
- Change the object mapping
  - HypermediaConfiguration
    - @EnableHypermediaSupport(type = EnableHypermediaSupport.HypermediaType.HAL_FORMS)
- Rename methods and imports
Adding PO Extension

• Define the domain model new elements (Status, Entity and value object)

• Create the PO extension DTO

• Add the functionality to the REST controller

• Add affordance