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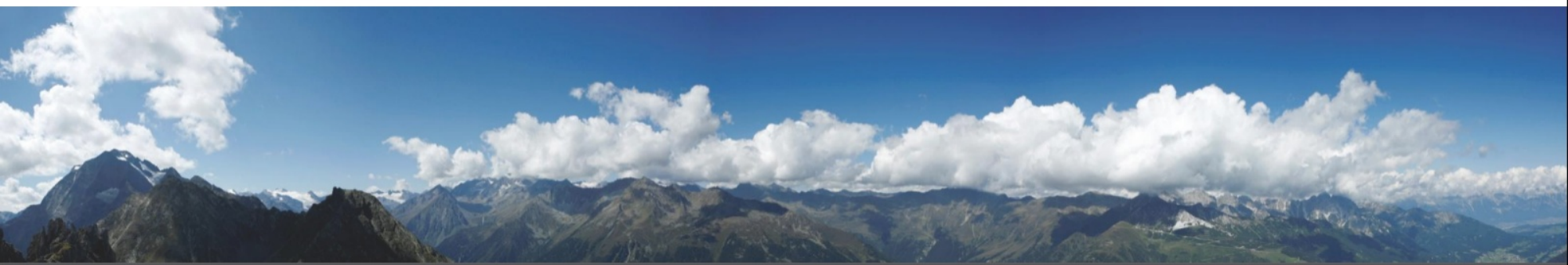
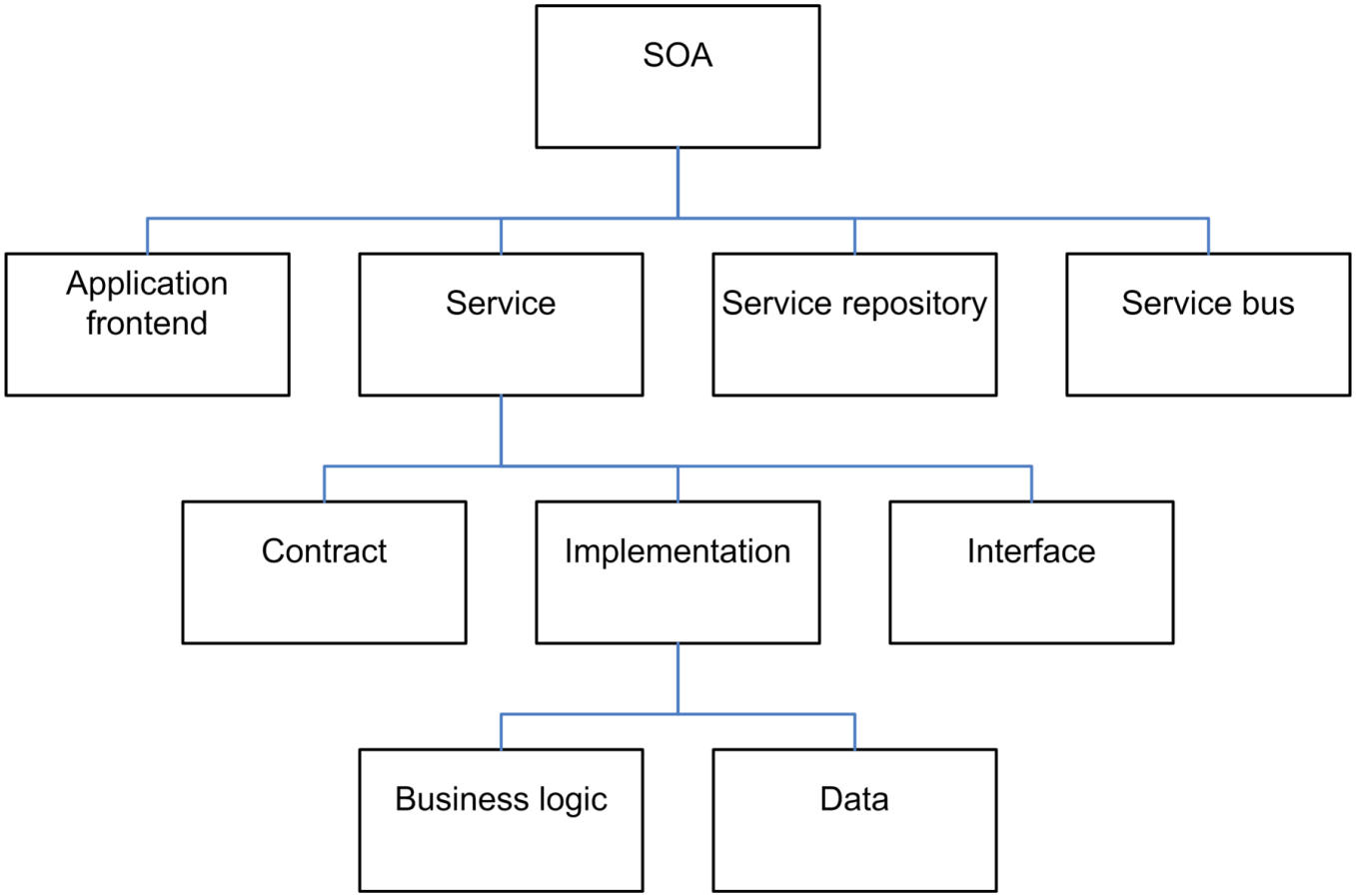
703128 PS/2 Web Services

Project Guidelines

Tuesday, 2015-10-13



Service-oriented Architecture (SOA) Elements Overview



(*) http://en.wikipedia.org/wiki/Service-oriented_architecture

Project Requirements

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Objective

Apply different Web Service technologies to an idea that you find interesting

- Service (Server side part):
  - **Business logic** is implemented with one Web Application Framework and exposed as Web Service
  - **Data** is stored in a database
  - Connection to other Web Services via Web APIs or direct invocation of Web Service interfaces
- Application Frontend (Client side):
  - Implementation of a UI for a given platform (Desktop PC, Web browser, Mobile Device, etc.)
  - Use of client libraries to invoke Web Services

Web Service Frameworks

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- Apache Axis2
  - A Web Services/SOAP/WSDL engine
  - `http://axis.apache.org/axis2/java/core/`
- Apache CXF
  - An open source services framework
  - `http://cxf.apache.org/`
- Metro (part of the GlassFish community)
  - A high-performance, extensible, easy-to-use Web Service stack
  - `https://metro.java.net/`
- Spring Web Services (Spring-WS)
  - A product of the Spring community focused on creating document-driven Web services
  - `http://projects.spring.io/spring-ws/`

Web Service Frameworks

- Reslet
  - An open source Web API framework for Java
  - `http://restlet.com/`
- Jersey RESTful Web Services framework
  - An open source, production quality, framework for developing RESTful Web Services in Java
  - `https://jersey.java.net/`

And many more:

`http://en.wikipedia.org/wiki/List_of_web_service_frameworks`

Client/Browser Frameworks

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- Google Web Toolkit
  - A development toolkit for building and optimizing complex browser-based applications
  - `http://www.gwtproject.org/`
- ExtJS
  - A JavaScript application framework for building interactive web applications
  - `http://www.sencha.com/products/extjs`
- jQuery
  - A fast, small, and feature-rich JavaScript library
  - `http://jquery.com/`

And many more:

`http://en.wikipedia.org/wiki/Comparison_of_JavaScript_frameworks`

IDE and Development Tools

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- Eclipse Web Tool Platform
  - `http://www.eclipse.org/webtools/`
- Netbeans
  - `https://netbeans.org/`
- An automatic compilation and deployment tool:
  - Maven, `http://maven.apache.org/`
  - Ant, `http://ant.apache.org/`
  - Unit Test, `http://www.junit.org/`
  - Version Control (SVN, Mercurial, GIT)

Available Platform / Services

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- Programmable Web
  - Source of news and information about Internet-based application programming interfaces (APIs)
    - Google Maps
    - Twitter
    - Weather (Yahoo, Weather.com)
    - Local Businesses (Yahoo, Yelp)
    - ... (14,140 APIs by 12.10.2015)
  - `http://www.programmableweb.com/apis/directory`
- XMethods
  - List of publicly available web services
  - `http://www.xmethods.net/`

Tourism (Innsbruck) related Services

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(i) Onlim Tell-it!, `https://tell-it.onlim.com/`

(ii) Redlink API, `http://dev.redlink.io/`

(iii) Booking platform, e.g. Seekda `https://seekda.com/`

(iv) Deskline 3.0 of Feratel, `http://www.feratel.at/`

(v) The South Tyrol State Association of Tourism Organisations, `http://www.lts.it/`

Project Topics

I. Touristic Service Packaging

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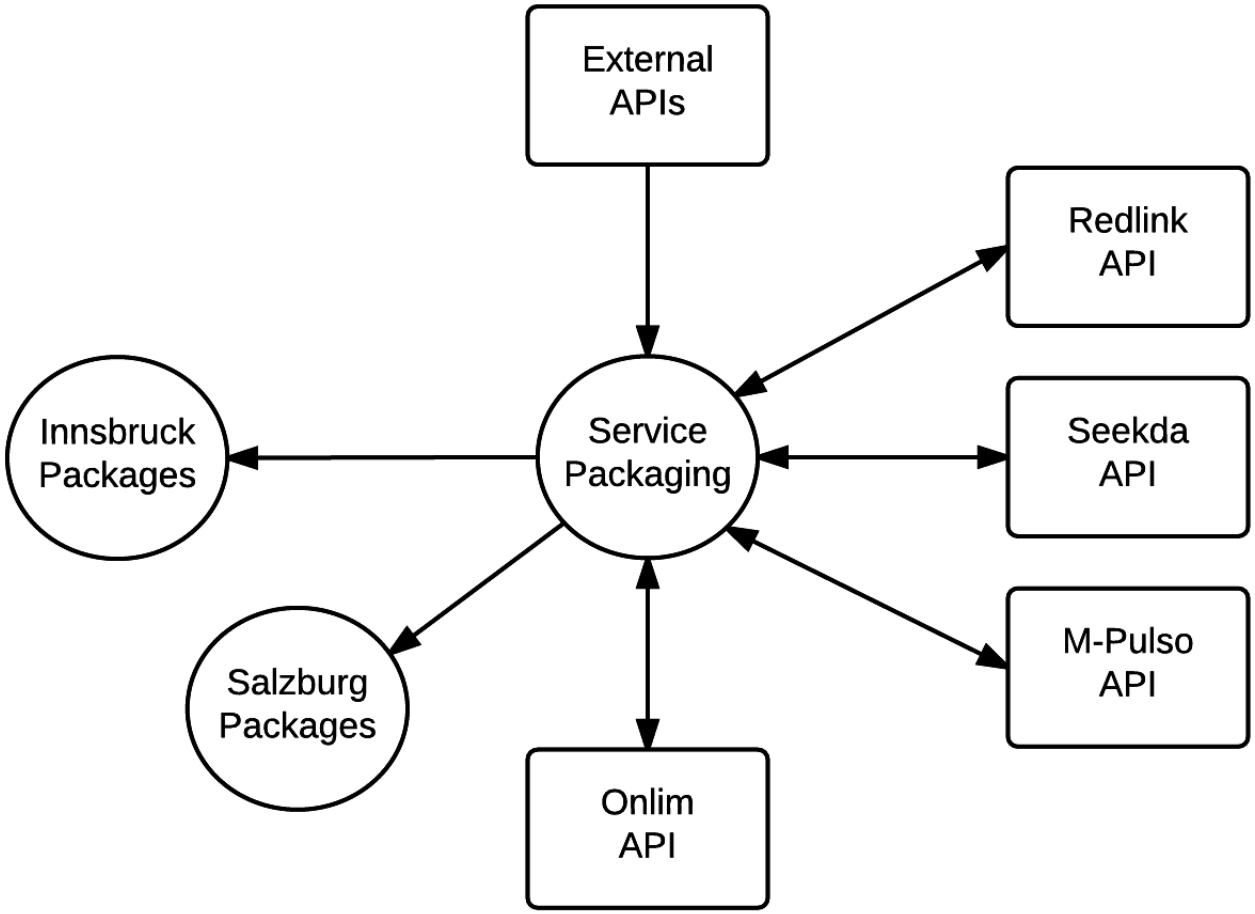
Inspired by a research project: **TourPack**: On-demand Data-driven Production of Touristic Service Packages.

> ***Integrating information from multiple sources and systems*** *employing linked data as a global information integration platform, and mining from the depths of the "closed" data, the touristic service package production system will be able to cater* ***to creating the most optimal travel experience for the traveler****.*

- TourPack Project (`http://tourpack.sti2.at/`)
- `http://www.slideshare.net/annafensel/tour-pack`

Service Packaging



A package must be meaningful, e.g. services are offered at the same time interval and within a reachable area/location

Service Packaging related Topics

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No.	Services	City	Client
1	Hotel + Events	Innsbruck	Web
2	Hotel + Events	Salzburg	Web
3	Restaurant + Events	Innsbruck	Web
4	Restaurant + Events	Salzburg	Web
5	Hotel + Events	Innsbruck	Mobile
6	Hotel + Events	Salzburg	Mobile
7	Restaurant + Events	Innsbruck	Mobile
8	Restaurant + Events	Salzburg	Mobile

Other related topics:

- Consume the Onlim API with a mobile app (e.g. Android)

Example - Redlink

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Redlink [1]: (i) Content Analysis, (ii) Linked Data, (iii) Semantic Search

Endpoints

Remember to enable your favourite datasets for the application (key) you are using!

Endpoints which have the `dataset` as part of the address restrict the operation to that dataset. Endpoints *without* a dataset in the path operate on *all datasets configured for this application*.

GET	/data/{dataset}
POST	/data/{dataset}
PUT	/data/{dataset}
DELETE	/data/{dataset}
GET	/data/{dataset}/resource
POST	/data/{dataset}/resource
PUT	/data/{dataset}/resource
DELETE	/data/{dataset}/resource

[1] Redlink API, `http://dev.redlink.io/api/1.0/`

Example - Onlim

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Onlim Tell-it! [2]

dacodi v1

dacodi enables fast and easy multi-channel dissemination with the click of a button. Share the information you want to spread in various channels, such as Twitter, Facebook, YouTube, and the like. Further, dacodi is able to collect feedback from your communication channels and present it in a uniform and clear manner. dacodi acts as a core tool for future software developed by the online communication working group at STI Innsbruck, since it abstracts processes needed for multi-channel communication, which can be accessed via the dacodi API.

```
IMPORTANT NOTE: All API paths have an /api prefix which MUST NOT be included in the actual call.
```

Resources

Publications

Resource	Description
GET /api/publications	
GET /api/publications/:id	
POST /api/publications	
PUT /api/publications/:id	
DELETE /api/publications/:id	
GET /api/publications/:id/publish	
GET /api/publications/:id/approve	
GET /api/publications/:id/status	
GET /api/publications/:id/schedule	

[2] Dacodi API, http://oc.sti2.at/results/software/dacodi

II. JSON-LD Generator for Hotel

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1. Input: Given an extension of Schema.org vocabulary [3]
2. Output: Design and develop a user interface to generate JSON-LD [4] instances for “Hotel”
3. Requirements:
   - The structure of the interface is based on the defined vocabulary (classes, properties)
   - Any change in the vocabulary must be reflected in the interface automatically
   - The interface must adhere the accepted value types (e.g. String, Number, Date), the data format (e.g. formats of date)

[3] Accommodation, `http://sdo-hotels.appspot.com/Accommodation`

[4] JSON for Linking Data, `http://json-ld.org/`

Task

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Project Preparation

1. Form a Team
2. Choose a topic from the previously mentioned topics

- **Team**: 3-5 people, decide a name for your team
- Search on the Internet the potential services to integrate (remember the topic is “Touristic Service Packaging”):
  - Events: `http://innsbruck.eventsuche.com/`, `https://www.events.at/`
  - Hotels & Restaurants: `http://www.kaysers.at/`, Seekda, ...
- **Project Idea**: How to combine the selected services
  - Discuss with your team members
  - The idea might be changed after discussion with the tutor

Task

Assignment: For each group:

- Download the template for project preparation from the course webpage
- Fill the template
- Send it to the tutors (`ws1516@sti2.at`) no later than Tuesday, 2015-10-20

Note: Project proposal is based on first come, first served basis.

Thank You