Contents

1 Introduction

FROM HUBERT:
"This section should introduce the project and the material covered in the report. In addition, there should be an introduction to Web services (c.f. 2.1) of about roughly 2 pages."
Input relevant tex file(s) for introduction here...

1.1 Introduction to Web Services

(WHAT IS IMPORTANT HERE?) The report and implementation will introduce the concepts of web services, by implementing the Travel Agency, TravelGood, and its underlying services utilized by the agency. These underlying services are provided by other organizations, LameDuck and NiceView. These organizations provides services for TravelGood using SOAP based web service. Furthermore, all three organizations use another service, FastMoney, which is a banking system provided as SOAP based web service. See Figure 1.1

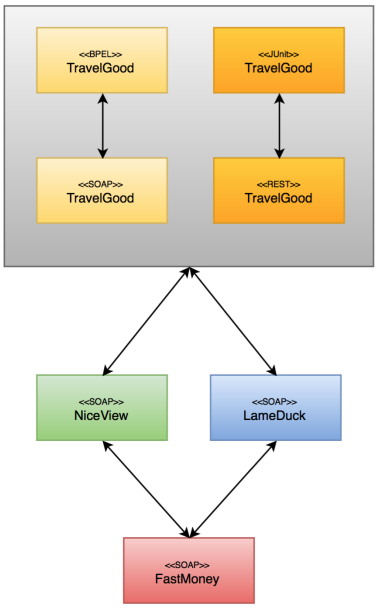

Figure 1.1: Block Diagram - Overview

1.1.1 Service Oriented Architecture

The system utilizes SOA (Service Oriented Architecture) meaning that the systems contains several components that interacts with one another via a network using the Transport protocol, HTTP. The services are provided and described in a WSDL (Web Services Definition Language), defining the interfaces. Within the WSDL contains informations about the services/operations that can be invoked. Combined with all three services, they compose the Travel Agency service.

The Travel Agency will be implemented as both REST and SOAP based solutions, where the latter will be utilizing BPEL (Business Processing Execution Language), describing the processes that will be invoke services on NiceView and LameDuck.

1.1.2 SOAP

SOAP (Simple Object Access Protocol) is a protocol that describes how messages are exchanged on a network using HTTP as transport layer. These messages are based on XML (Extensible Markup Language) that has a set of defined rules on how these document are structured. Furthermore, a SOAP message also has a set of defined rules:

- Header element that contains header information
- Body element that contains call and response information
- Fault element containing errors and status information

By being able to define the elements within a message, it introduces to strongly typed messages exchanged and messages can be sent/delivered reliably using WS-ReliableMessaging.

1.1.3 BPEL

With BPEL (Business Processing Execution Language) it is possible to describe the process of a business logic, and invoking services/operations on different web services, described in a WSDL. In another word, BPEL can be used to model the behavior of a use case, such as booking a hotel/flight.

1.1.4 REST

REST (Representational State Transfer) also uses HTTP protocol as its transport layer. Instead of using complex mechanism from other web services, such as SOAP, it uses simple operations from HTTP protocol that follows the CRUD (Create, Read, Update, Delete). Resources can then be accessed and execute several HTTP operations/verbs by knowing about the location of a resource in the form of URI.

Coordination Protocol 2

FROM HUBERT:
"This section should show and explain the state machine for the coordination protocol between the client and the travel agency – i.e. how the client is allowed to interact with the services (planning, booking, and cancelling) (c.f. 2.2)."
Input relevant tex files regarding Coordination Protocol here...

Web Service Implementations 3

FROM HUBERT:
"The first subsection of this section should explain the data structures used and contain class diagrams providing an overview over for the used data structures for both RESTful and SOAP/BPEL Web services The airline- and hotel reservation services mentioned in Sect. 2.3.1 and 2.3.2 should have a short description of what they do and how they are implemented. What were the design decisions involved? For example, which binding style was used and why (e.g. document/literal)? The next section should explain the BPEL process and how it works. It should be possible to understand the implementation of the BPEL process from your text. Explain the design decisions you have made, e.g. what are the port types, operations, which binding style was used and why, ... The last section should explain your RESTful implementation. In particular
• What have you chosen to be represented as resources and why
• How are activities of the business process mapped to HTTP verbs, like GET, PUT, POST, DELETE, ...
• How the business logic is implemented
• Which representations you have chosen and why"
Input relevant tex files regarding the implementations here... Please create ONE tex file for each data structure used (if more than one is used).

3.1 Data Structures Used

Write something here and input tex files for relevant subsections if any...

3.2 Airline- and Hotel Reservation Services

Write something here...

3.3 BPEL Implementation

Write something here...

3.4 RESTful Implementation

Write something qualified here... :-)

Web Service Discovery 4

FROM HUBERT:
"This section should refer to, and explain the XML documents generated according to the task description in 2.6."
Input relevant tex files with sections on Discovery here...

Comparison of RESTful and SOAP/BPEL Web Services 5

FROMT HUBERT:
"This section should discuss the points mentioned in Sect. 2.7. This section should be at most 2 pages."
Input necessary and relevant files with sections here...

Advaned Web Service Technology 6

FROM HUBERT:
"This section should discuss the points mentioned in Sect. 2.8. This section should be at most 2 pages."
Include files with the relevant sections here...

Conclusion 7

FROM HUBERT:
"This section should summarise the report and contain the experiences with the project. For example, what was learned, what are the things you can improve next time, and what did made good this time. (Won't be graded!)"
Input relevant tex files here for the conclusion...

Who Did What 8

FROM HUBERT:
"It is important that with each section/subsection it is marked who is responsible for that part of the text. There can only be one responsible person for each part of the text. In addition, each WSDL, XSD, and BPEL file needs to have an author as well as all Java files (or other programming language file) used for implementing the simple Web services. In addition, you should list which author contributed to which section and which file in the section Who did what in the report. *Make sure that each member of the group does something of each task! In particular, but not exclu- sively, make sure that all of you work on the RESTful part as well as on the SOAP/BPEL part.*"
Input relevant tex file about who did what parts here...