

Final Project: Airline Travel Planner

Laboratory of Service Design and Engineering

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Outline

- Project Overview
- Services Modules
- Requirements
- Technologies to be used
- Exams

Introduction to the project

- The reference domain is : *Airline Travel industry*
- The overall purpose of the project is to offer travelling related services to the users: for example
 - Search for particular flight availability
 - Search for a particular fare
 - Search for a low fare given a time period
 - Apply various rules in fare calculation
 - Rules differ based on season, time, travel class, destination etc

Service-Oriented Application Modules

- ***Data Services (Storage Services):***
 - These services will be responsible for storing, retrieving data from the database. So this module sits on top of the database to help all other modules to fulfill their database related requirements.
- ***Business Logic Services (Reasoning Services):***
 - The reasoning services will play an important role for checking the fare rules based on different factors such as season, destination, senior citizen, time etc

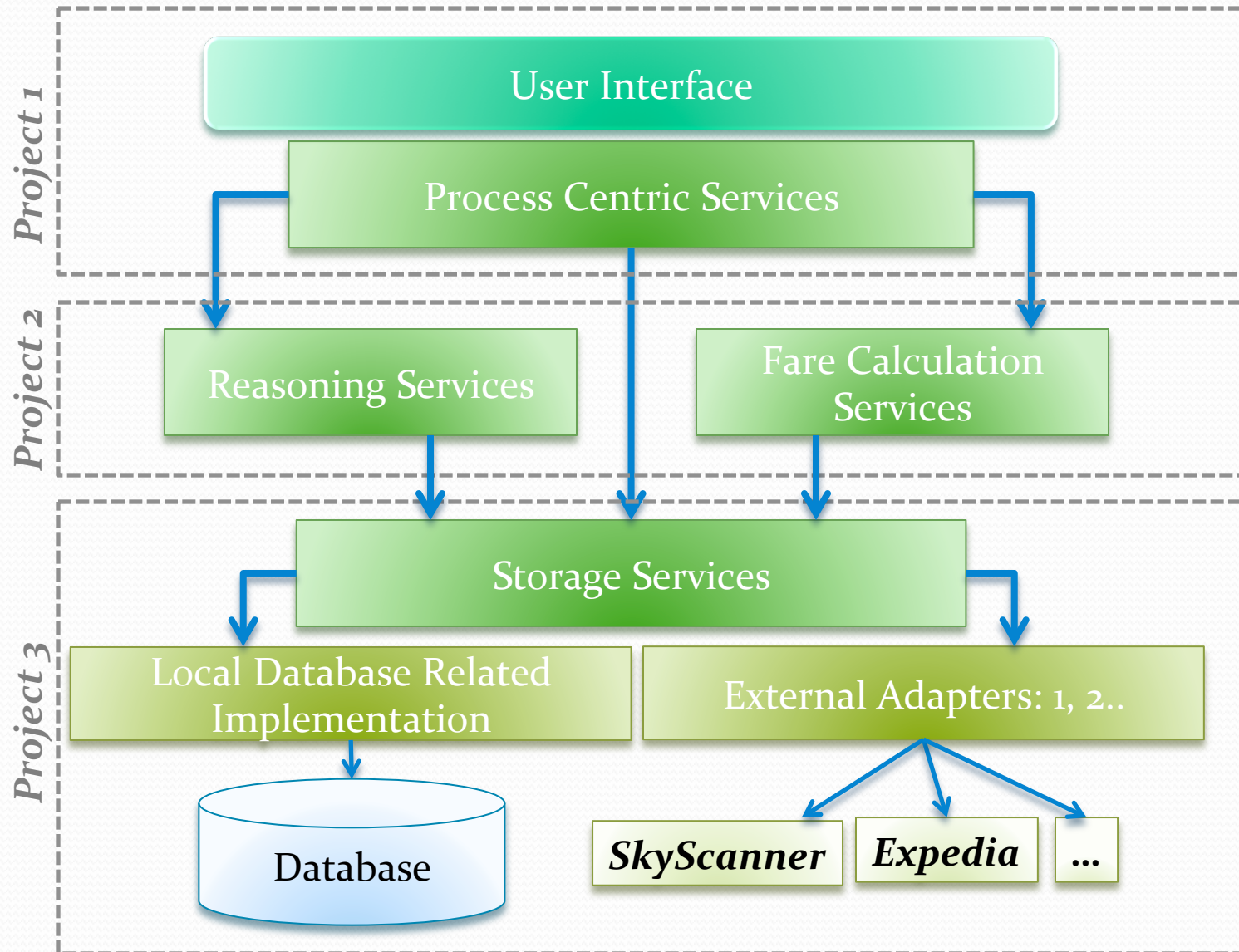
Service-Oriented Application Modules

- *Business Logic Services (Fare Calculation Services):*
 - These services would implement algorithms which will be used to calculate fares based on reasoning support.
- *Adapters (Screen Scraper/ External API Services)*
 - These services would go to online websites to extract the information about fares, availability of the flights etc. So getting updated data from web site like:
expedia, kayak, volagratis, SkyScanner, or others

Service-Oriented Application Modules

- ***Process Centric Services***
 - This set of services is the gateway to all other services. The user interface directly interact only with this module and then decision would be taken about which other services need to call to fulfill a request.
- ***Note:*** Think each module as a separate project and separately deployed on the server. Interaction among these projects is only possible through the services.

A Possible Architecture



Project Requirements

- Implementation all the intermediate services described in previous slides under each module.
- Support the user in a search for a particular flights offers within the local database.
 - Low fares
 - Availability checking
 - Applying different rules
- Support the user in a search for a particular flights offers both within the *internal* and *external sources*.

Project Requirements

- One of the modules must expose RESTFul services.
- One of the modules must expose SOAP services.
- Each module can interact with other modules only through the web services and can only send/receive the concepts/entities defined in a common xml schema (XSD).
- Any database can be used (e.g., Oracle, MySQL etc).

Project Phase # 1

- Try to find the concepts related to this domain
 - Flight, Airport, Passenger, Fare ...etc
- Find their suitable attributes
- Make an ER diagram and a XSD
- Think about exposing related services for each module
- Come up with a number of services that you think make sense
- Start a draft version of your report
- Try to use/refine given database script. (We will provide it)

Project Phase # 2

- Given some story try to find new requirements for the data model and for the services.
- Possible extension of the data model, ER and XSD
- Prepare mockup services
- Plan an initial user interface (web page/ desktop GUI)
- Update your report draft

Project Phase # 3 (Final)

- Implementation of the real services
- Use of real database (e.g., MySQL, Oracle)
- Make simple web interface / Java desktop interface to interact with your ***Service-Oriented Application***.
- Finalize your report.

Exams and submissions

- 1st exam session: January 26th from 9:00 until 12:00
 - Submission deadline for 1st session: January 23th
- 2nd exam session: February 10th from 9:00 until 12:00
 - Submission deadline for 2nd session: February 7th



More details about the project will be
given during next lectures.