# MuleSoft Training Interview - Technical Exercise 1

## Summary

Use case: Mule United Airport (MUA) is a fictional airport that acts as a hub for 3 airlines, American Airlines, Delta and United. MUA is undergoing a large legacy modernization initiative. Their primary goal is to expose some of their services, such as flights finder services, in a single intuitive REST API.

The current services contain flight data. This flight data represents outbound flights to destinations such as San Francisco (SFO), Cleveland (CLE), Los Angeles (LAX) and Portland (PDX) from Mule United Airport.

American Airlines provide a database with flight information, Delta offers a SOAP web service and United offers a REST service.

The goal of this exercise is to create a Mule application that exposes a REST API for searching for flight information from either the existing SOAP web service (Delta) or database (American Airlines).

This project will take anywhere from a few hours to potentially a lot more, depending on the number of optional steps undertaken and on the participant’s experience.

## Goals

Below are a few goals to help guide you through the development.

* Create a new Mule application using Anypoint Studio.
* Design and implement a flights finder API that exposes either the database or SOAP service as a REST service.
  + Hint: design an API that is capable of dealing with two parameters: airline and destination. Keep in mind that REST supports two types of parameters: URI and query parameters.
* Return all data in a JSON format.
* Package the project as a Mule deployable archive, including source files.

## Optional Ideas

Got some cool ideas not included in the goals above? Feel free to get creative with your solution, below are some cool ideas you could try out.

* Write a RAML specification that defines your API.
* Create a REST API for finding flights from all airlines. Expose the API as a service that routes to more than one service in your solution.
  + We've even included an extra REST service, if you'd like to test it out!
* Implement error handling within the API.
* Deploy the app to a CloudHub environment.
* Create a Maven based Mule application.

## Systems

Below are details on the various systems that can be used in this project.

### American MySQL Database:

* Server: training.cpk4jjb2mzwd.us-west-2.rds.amazonaws.com
* Port: 3306
* Username: ReaderAccount
* Password: learnmule
* Database: training
* Table: flights

### United REST Service:

* Retrieve all flights: http://training.cloudhub.io/essentials/united/flights
* Retrieve flights to a specific destination: http://training.cloudhub.io/essentials/united/flights/{destination}

### Delta SOAP Service:

* WSDL address: http://training.cloudhub.io/essentials/delta?wsdl

### Possible destinations:

* SFO, LAX, CLE, PDX

## Resources

Below are some available tools/resources we think you'll find helpful!

* MuleSoft documentation: <https://docs.mulesoft.com>
* Anypoint Studio for creating and running Mule Applications: <https://www.mulesoft.com/studio>. Note that Java Development Kit (JDK, not JRE) version 1.8 is required.
* Anypoint Platform Account; sign up for access and a free 30-day trial to most of the available services, such as an API Designer and runtime: <http://anypoint.mulesoft.com>
* RAML.org for modeling REST APIs: <http://raml.org/>
* Reach out to [roy.prins@mulesoft.com](mailto:roy.prins@mulesoft.com) if you have any questions around project goals.

## Submission

Submit your final solution, exported as a Mule Deployable Archive (including source files), to [training@mulesoft.com](mailto:training@mulesoft.com). You can create a deployable archive by selecting File | Export… | Mule | Anypoint Studio generated Deployable Archive. **Make sure to check “Attach project sources” in the subsequent dialog**.

Ensure the subject reads ‘{Your Name} - Technical Exercise’. Please submit your solution at least one day before the technical interview.

Note: in some cases, sending an email with a zip file attached may get rejected due to security policies or email provider policies. In that case, you can use a public file transfer service, such as <http://wetransfer.com>. Please send your solution directly to [roy.prins@mulesoft.com](mailto:roy.prins@mulesoft.com).