**API Technical Exercisev1**

REST API Proof of Concept (PoC) to showcase the following behaviours:

1. Retrieve a list of available flights on a given date
2. Retrieve a paginated list of destinations (country, city, airport name) for a given airline (10 results per page)
3. Simulate a ticket purchase by changing the seats available for a specified flight
4. Simulate new flight availability by adding a new flight for a specified route
5. Simulate change in flight price by increasing/decreasing the ticket price for a specified flight

Rest API is created based on RAML (Rest API Modelling Language), which follows **OpenAPI Specification** (OAS). It uses HHTP requests to access the data, with HTTP Method’s.

GET: Retrieve’s the current state of a resource.

POST: Create a new resource

DELETE: Delete a resource

PUT: Replace a resource and create a new one is created

PATCH: Partially update’s a resource

In order to achieve the above POC, the methods/query parameters used are as below

Method: GET, POST, PATCH

API: <http://IP:PORT/api/flights>

Query Parameter: date, airline, flight

In detail implementation of each behaviour:

1. **Retrieve a list of available flights on a given date**

Assumptions: Below assumptions are made.

* The flight availability depends on the Seat\_Availability.
* The filed details to be sent back are Departure\_Airport, Price, Departure\_Date, Aircraft\_Type, Airline\_Name, Destination\_Airport
* Seat\_Availability, Flight\_Code is not required.

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| API to list available flights  for a given date | <http://IP:PORT/api/flights?date=yyyy-mm-dd>  http://flights-info-application.us-e2.cloudhub.io/api/flights?date=2017-03-15 |
| Method | GET |
| **Query Parameter** | date |
| **Query** | select Departure\_Airport,Price,Departure\_Date, Aircraft\_Type,Airline\_Name, Destination\_Airport from flights\_Sreevathsa where DATE(Departure\_Date)=:Date\_Filter and Seat\_Availability > 0 |

1. **Retrieve a paginated list of destinations (country, city, airport name) for a given airline (10 results per page)**

Assumptions: Below assumptions are made.

* The destinations of all flights for a particular airline will be returned
* As country & city looks to be in **Airports table** for whichthere is no access

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| API to fetch destination info for a given airline | <http://IP:PORT/api/flights>?airline=British Airways  http://flights-info-application.us-e2.cloudhub.io/api/flights?airline=British Airways |
| Method | GET |
| **Query Parameter** | airline |
| **Query** | select Destination\_Airport from flights\_Sreevathsa where Airline\_Name=:Airline\_Name |

1. **Simulate a ticket purchase by changing the seats available for a specified flight**

Assumptions: Below assumptions are made.

Seat Change: The seat count is changed based on a flight code which is unique for each flight

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| API to change the seats  for a specific flight | <http://IP:PORT/api/flights>  http://flights-info-application.us-e2.cloudhub.io/api/flights |
| Method | PATCH |
| **Payload** | {  "Flight":"BA001",  "Seat": 3  } |
| **Query** | update flights\_Sreevathsa set Seat\_Availability = :Seat\_Availability where Flight\_Code = :Flight\_Code |

Ticket Check: Specified flight will be chosen based onflight code**.**

Available seats against the number of tickets choosen.

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| API to check whether the ticket can be purchased or not | <http://IP:PORT/api/flights>/[ticket?flightCode=BA001](http://localhost:8084/flights/ticket?flight=BA001)&tickets=2  http://flights-info-application.us-e2.cloudhub.io/api/flights/[ticket?flightCode=BA001](http://localhost:8084/flights/ticket?flight=BA001)&tickets=2 |
| Method | GET |
| **Query Parameter** | flight |
| **Query** | select Seat\_Availability from flights\_Sreevathsa where Flight\_Code = :Flight\_Code |

1. **Simulate new flight availability by adding a new flight for a specified route**

Assumption**:** The new flight with all details will be added into main table.

The details of departure, destination & aircraft to be updated into Routes table, but there is no access.

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| API to add new flight details | <http://IP:PORT/api/flights>  http://flights-info-application.us-e2.cloudhub.io/api/flights |
| Method | POST |
| **Paylod** | {  "Dep": "aaa",  "Flight": "BA002",  "Price": 123,  "DepartureDate": "2017-03-14T20:30:00",  "Aircraft": "Airbus A318",  "Seat": 1,  "Airline": "British Airways",  "Dst": "yyy"  } |
| **Query** | insert into flights\_Sreevathsa (Departure\_Airport,Flight\_Code,Price, Departure\_Date, Aircraft\_Type, Seat\_Availability, Airline\_Name, Destination\_Airport) VALUES (*:*Departure\_Airport,*:*Flight\_Code,*:*Price, :Departure\_Date, :Aircraft\_Type, :Seat\_Availability, :Airline\_Name, :Destination\_Airport) |

1. **Simulate change in flight price by increasing/decreasing the ticket price for a specified flight**

Assumption**:** The increase or decrease of the price is against a flight code

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| API to change the price  for a specific flight | <http://IP:PORT/api/flights>  http://flights-info-application.us-e2.cloudhub.io/api/flights |
| Method | PATCH |
| **Payload** | {  "Flight":"BA001",  "Price": 3  } |
| **Query** | select Price from flights\_Sreevathsa where Flight\_Code = :Flight\_Code  update flights\_Sreevathsa set Price = :Price where Flight\_Code = :Flight\_Code |