

Overview

Create a minimal API (.NET 6 C#) that handles fetching, creating and deleting data for airports, countries and routes. The individual calls to implement are detailed in each section.

[Airports](#)

[Scenario 1 - Viewing all Airports](#)

[Scenario 2 - Viewing a Single Airport](#)

[Countries](#)

[Scenario 1 - Viewing All Countries](#)

[Scenario 2 - Adding a Country](#)

[Scenario 3 - Deleting a Country](#)

[Routes](#)

[Scenario 1 - Viewing All Routes](#)

[Scenario 2 - Adding a New Route](#)

[Airport Groups](#)

[Scenario 1 - Adding a New Route Using Airport Groups](#)

[Scenario 2 - Viewing All Routes](#)

[Appendix A - Sample Table Content](#)

[Airport](#)

[GeographyLevel1](#)

[Route](#)

Airports

Route	Action
/airports	GET
/airports/{ID}	GET

Scenario 1 - Viewing all Airports

GIVEN I am sending a GET request to the /airports endpoint

WHEN I send the request

THEN a list of airports with IDs and IATACodes is returned

Scenario 2 - Viewing a Single Airport

GIVEN I am sending a GET request to the /airports/{ID} endpoint

AND I have set a valid value for the ID

WHEN I send the request

THEN the full information for the specified airport is returned

Test Cases

- Get the airport with ID 1 i.e. /airports/1
 - All details of the airport should be returned
- Get the airport with ID 12
 - An error message should be returned stating that the airport could not be found

Countries

Route	Action	Content
/countries	GET	N/A
/countries	POST	{"Name":"Portugal"}
/countries?ID={ID}	DELETE	N/A

Scenario 1 - Viewing All Countries

GIVEN I am sending a GET request to the /countries endpoint

WHEN I send the request

THEN a list of countries with IDs and names is returned

Scenario 2 - Adding a Country

GIVEN I am sending a POST request to add a country to the /countries endpoint

AND the country name does not already exist

WHEN I send the request

THEN the country is created

AND a successful response status code is returned

Scenario 3 - Deleting a Country

GIVEN I am sending a DELETE request to delete a country to the /countries endpoint

AND the country ID exists

AND the country is not in use for an airport

WHEN I send the request

THEN the country is deleted

AND a successful response status code is returned

Test Cases

- Add a new country "Portugal"
 - The country should be created and a successful response status code returned
 - The country should be returned when a GET request is sent
- Add a new country "Spain"
 - The country should not be created and an error message returned stating that the country already exists
- Delete the country with ID 4
 - The country should be deleted and a successful response status code returned
- Delete the country with ID 7
 - An error message should be returned stating that the country could not be found
- Delete the country with ID 1
 - The country should not be deleted and an error message returned stating that a country in use for an airport cannot be deleted

Routes

Route	Action	Content
/routes	GET	N/A
/routes	POST	{"DepartureAirportID":1, "ArrivalAirportID":2}

Scenario 1 - Viewing All Routes

GIVEN I am sending a GET request to the /routes endpoint

WHEN I send the request

THEN a list of routes with IDs and airport IDs is returned

Scenario 2 - Adding a New Route

GIVEN I am sending a POST request to create a new route to the /routes endpoint

AND the route does not already exist

AND the airports IDs exist

AND the airports are valid choices for departure and arrival

WHEN I send the request

THEN the route is successfully created

AND a successful response status code is returned

Test Cases

- Add a route from airport ID 1 to 3 (LGW-LAX)
 - The route should be created and a successful response status code returned
- Add a route from airport ID 1 to 10
 - An error message should be returned stating that the arrival airport could not be found
- Add a route from airport ID 3 to 1 (LAX-LGW)
 - An error message should be returned stating that the route is invalid

Airport Groups

Create a new table AirportGroup with the following columns:

- AirportGroupID
- Name

Create a bridge between AirportGroup and Airport so that multiple airports can be assigned against any number of airport groups.

Extend the POST call to /routes to allow for sending airport group IDs instead of airport IDs. You may alter the existing route table or add a new table to support this.

Route	Action	Content
/routes	POST	{"DepartureAirportGroupID":1, "ArrivalAirportGroupID":2}

Scenario 1 - Adding a New Route Using Airport Groups

GIVEN I am sending a POST request to create a new route to the /routes endpoint
 AND I have specified airport group IDs as the parameters
 AND the route does not already exist
 AND the airport group IDs exist
 AND the airports assigned to each group are valid choices for departure and arrival
WHEN I send the request
THEN the route is successfully created
 AND a successful response status code is returned

Scenario 2 - Viewing All Routes

GIVEN I am sending a GET request to the /routes endpoint
WHEN I send the request
THEN a list of routes with IDs and airport IDs/airport group IDs is returned

Appendix A - Sample Table Content

Airport

AirportID	IATACode	GeographyLevel1ID	Type
1	LGW	1	Departure and Arrival
2	PMI	2	Arrival Only
3	LAX	3	Arrival Only

GeographyLevel1

GeographyLevel1ID	Name
1	United Kingdom
2	Spain
3	United States
4	Turkey

Route

RouteID	DepartureAirportID	ArrivalAirportID
1	1	2