

Participants: Theodoros Flevaris (S3903133), Konstantina Lamprinou (S3915336), Mikhail Shubov(S3905942) - Group 22

Introduction

CoolAir API is meant to be used for helping users decide which airlines and which airports to use in the USA for their travel needs. The API helps connect to the Airlines JSON Library, which gives information about airports, delays and the carriers of each airport in the USA as published by the Bureau of Transportation Statistics.

Requests

- 1) The first request shows all available airports in the USA to the user.

```
GET https://example.com/api/airports
```

Response Code would be either:

- 200: OK
- 204: No Content
- 404: Not Found

Header:

```
Content-Type:application/json
```

Response:

```
{
  "airports": [
    {
      "code": "ATL",
      "name": "Atlanta, GA: Hartsfield-Jackson Atlanta International",
      "_links": {
        "self": {
          "href": "https://example.com/api/airports/ATL",
          "Title": "Link to this airport"
        }
      }
    },
    {...},
  ],
  "_links": {
    "self": {
      "href": "https://example.com/api/airports/",
      "Title": "Link to the list of airports"
    }
  }
}
```

2) The second request shows all the carriers operating in US airports.

```
GET https://example.com/api/carriers
```

Response Code would be either:

- 200: OK
- 204: No Content
- 404: Not Found

Header:

Content-Type: application/json

Response:

```
{
  "carriers": [
    {
      "code": "AA",
      "name": "American Airlines Inc.",
      "_links": {
        "self": {
          "href": "https://example.com/api/carriers?AA",
          "title": "Link to this carrier"
        }
      }
    },
    {...},
  ],
  "_links": {
    "self": {
      "href": "https://example.com/api/carriers/",
      "Title": "Link to the list of carriers"
    }
  }
}
```

3) The third request shows all the carriers operating at a specific US airport of the user's choice.

```
GET https://example.com/api/carriers?airport=<AIRPORTCODE>
```

Parameters:

- <AIRPORTCODE> (*string*): code identifying the airport the user chose.

Response Code would be either:

- 200: OK
- 204: No Content
- 404: Not Found

Header:

`Content-Type:application/json`

Response:

```
{
  "carriers": [
    {
      "code": "AA",
      "name": "American Airlines Inc.",
      "_links": {
        "self": {
          "href": "https://example.com/api/carriers/AA",
          "title": "Link to this carrier"
        }
      }
    },
    {...},
  ],
  "_links": {
    "self": {
      "href": "https://example.com/api/carriers/",
      "Title": "Link to the list of carriers"
    }
  }
}
```

- 4) The fourth request shows all statistics about the flights of a specific carrier for a specific month.

GET

`https://example.com/api/statistics?airport=<AIRPORTCODE>&carrier=<CARRIERCODE>&time=<TIMELABEL>`

OR

PUT `https://example.com/api/statistics/airport/<AIRPORTCODE>`

OR

POST `https://example.com/api/statistics/airport/<AIRPORTCODE>`

OR

DELETE

`https://example.com/api/statistics/airport/<AIRPORTCODE>`

*apart from /airport the same actions can be used for /carriers or /time.

Parameters:

- `<CARRIERCODE>` (*string*): code identifying the carrier the user chose.
- `<AIRPORTCODE>` (*string*): code identifying the airport the user chose.
- `<TIMELABEL>` (*string*) [OPTIONAL]: code identifying the month and year the user chose. If the code doesn't exist, all carriers will be returned.

Response Code would be either:

- 200: OK
- 201: Created
- 202: Accepted
- 204: No Content
- 400: Bad Request
- 404: Not Found

Header: `Content-Type:application/json`

Response (for GET request):

```
{
  "statistics": [
    {
      "flights": {
        "cancelled": 5,
        "on time": 561,
        "total": 752,
        "delayed": 186,
        "diverted": 0
      },
      "# of delays": {
        "late aircraft": 18,
        "weather": 28,
        "security": 2,
        "national aviation system": 105,
        "carrier": 34
      },
      "minutes delayed": {
        "late aircraft": 1269,
        "weather": 1722,
        "carrier": 1367,
        "security": 139,
        "total": 8314,
        "national aviation system": 3817
      },
      {...}
    ],
  ],
}
```

```

    "_links": {
      "self": {
        "href": "https://example.com/api/statistics/",
        "title": "Link to the list of all statistics"
      }
    }
  }
}

```

- 5) The fifth request shows the number of on-time, delayed, and cancelled flights of a carrier to a US airport, either for a given month, or all months available.

GET

`https://example.com/api/statistics/flights?airport=<AIRPORTCODE>&carrier=<CARRIERCODE>&time<TIMELABEL>`

Parameters:

`<AIRPORTCODE>` (*string*): code identifying the airport the user chose.

`<CARRIERCODE>` (*string*): code identifying the carrier the user chose.

`<TIMELABEL>` (*string*) [OPTIONAL]: code identifying the month and year the user chose. If we want information about all the months, `<TIMELABEL>` does not need to be included.

Response Code would be either:

- 200: OK
- 204: No Content
- 404: Not Found

Header: `Content-Type:application/json`

Response: list of JSON objects as follows:

```

{
  "flights": {
    "cancelled": 5,
    "on time": 561,
    "delayed": 186,
  },
  "_links": {
    "self": {
      "href": "https://example.com/api/flights/AA",
      "Title": "Link to this flight information"
    }
  }
},
{...},
{
  "_links": {
    "self": {

```

```

        "href": "https://example.com/api/flights/",
        "Title": "Link to the list of all information for
all flights"
    }
}
}
}

```

- 6) The sixth request shows the number of minutes of delay per carrier attributed to carrier-specific reasons (or not) for a specific or all available months and airports.

GET

```
https://example.com/api/statistics/delays?carrier=<CARRIERCODE>
&date=<TIMELABEL>&airport=<AIRPORTCODE>&carrierreasons=<BOOL>
```

Parameters:

<AIRPORTCODE> (*string*) [OPTIONAL]: code identifying the airport the user chose. If the code doesn't exist, all carriers will be returned.

<CARRIERCODE> (*string*) [OPTIONAL]: code identifying the carrier the user chose. If the code doesn't exist, all carriers will be returned.

<TIMELABEL> (*string*) [OPTIONAL]: code identifying the month and year the user chose. If the code doesn't exist, all carriers will be returned.

<TIMELABEL> (*string*) [OPTIONAL]: code identifying the month and year the user chose. If the code doesn't exist, all carriers will be returned.

<BOOL> (*boolean*): If **TRUE** the response would be carrier-specific reasons. If **FALSE** the response returns data for non carrier-specific reasons.

Response Code would be either:

- 200: OK
- 204: No Content
- 404: Not Found
-

Header: `Content-Type:application/json`

Response: list of JSON objects as follows:

```

{
  "delays":{
    "late aircraft": 3043,

```

```

        "weather": 1783,
        "carrier": 4201,
        "security": 45,
        "total": 12139,
        "national aviation system": 3067,
        "_links": {
            "self": {
                "href": "https://example.com/api/delays/AA",
                "Title": "Link to this airport"
            }
        }
    },
    {...},
    "_links": {
        "self": {
            "href": "https://example.com/api/delays/",
            "Title": "Link to the list of all delays"
        }
    }
}
}

```

- 7) The seventh request shows descriptive statistics (mean, median, standard deviation) for carrier-specific delays (as above) for a flight between any two airports in the USA for a specific carrier/all carriers serving this route.

GET

`https://example.com/api/descriptiveStats?airport1=<AIRPORTCODE1>&airport2=<AIRPORTCODE2>&carrier=<CARRIERCODE>`

Parameters:

<AIRPORTCODE1> (*string*): code identifying the first airport the user chose.
<AIRPORTCODE2> (*string*): code identifying the second airport the user chose.
<CARRIERCODE> (*string*) [OPTIONAL]: code identifying the carrier the user chose. If the code doesn't exist, all carriers will be returned.

Response Code would be either:

- 200: OK
- 204: No Content

- 404: Not Found

Header:

`Content-Type: application/json`

Response: list of JSON objects as follows:

```
{
  "descriptiveStats": [
    {
      "mean": 307,
      "median": 561,
      "stdDev": 186,
      "_links": {
        "self": {
          "href": "https://example.com/api/descriptiveStats/flight/AA",
          "Title": "Statistics of the flight for a specific carrier"
        }
      }
    },
    {
      ...
    },
    {
      "_links": {
        "self": {
          "href": "https://example.com/descriptiveStats/",
          "Title": "Link to the list of all descriptive statistics"
        }
      }
    }
  ]
}
```