**FLIGHT BOOKING**

**Description:**

 The structure and flow of the new flight booking APIs. This API forms the three steps

This API forms the first step in the Flight Searching. Once a flight is chosen, confirm the real-time price using Flight Pricing and book the flight with Flight Booking.

1. Flight Searching
2. Flight Pricing
3. Flight Booking.

**1.Flight Searching:**

The API lets you can search flights between two cities, perform multi-city searches for longer itineraries and access one-way combinable fares to offer the cheapest options possible

**2.Flight Pricing:**

The price and availability of airfare fluctuate constantly, so it's necessary to confirm the real-time price before proceeding to book. The Flight Offers Price API confirms the availability and final price of flights returned by the Flight Offers Search API

**3.Flight Booking:**

The Flight Create Orders API performs the final booking for a chosen flight. The API provides a unique booking ID and reservation details once the reservation is completed. This API is the final step in the Flight Booking. Use it after completing a flight search with Flight Searching and confirming real-time price and availability with Flight Pricing.

Shruthi Shedage

Akhila Ambala

**Steps to be followed:**

* Understand Requirement
* Create RAML
* Testing

**Objective of this project:**

* Make use of Design Center to create RAML project and design RAML specification.
* Creating mule message flows, making use of mule components.
* Test scripts creation to test the end point using testing tools such as postman.

**Scenario:**

This platform to perform booking services for flights

This platform will enable customers to search location routes and departure schedule from multiple cities.

The complete structure of the 3 APIs that form the flight booking flow.

**Overview of the flow:**



**Step 1: search for flights with Flight Searching**:

The Flight Search API retrieves a list of all possible flights to a selected destination.

**POST** operation offering the full functionalities of the API.

The Flight Offers Search API searches airlines to find the cheapest flights for a given itinerary. The API lets you can search flights between two cities, perform multi-city searches for longer itineraries and access one-way combinable fares to offer the cheapest options possible. For each itinerary, the API provides a list of flight offers with prices, fare details, airline names, baggage allowances and departure terminals.

​**POST/flight-offers:**

Return list of Flight Offers based on posted searching criteria.

#### **Parameters**

| **Name** | **Description** |
| --- | --- |
| **X-HTTP-Method-Override**  **string**  ***(header)*** | the HTTP method to apply  *Default value* : GET |
| **getFlightOffersBody**  ***(body)*** | list of criteria to retrieve a list of flight offer |

{

  "currencyCode": "USD",

  "originDestinations": [

    {

      "id": "1",

      "originLocationCode": "RIO",

      "destinationLocationCode": "MAD",

      "departureDateTimeRange": {

        "date": "2021-11-01",

        "time": "10:00:00"

      }

    },

    {

      "id": "2",

      "originLocationCode": "MAD",

      "destinationLocationCode": "RIO",

      "departureDateTimeRange": {

        "date": "2021-11-05",

        "time": "17:00:00"

      }

    }

  ],

  "travelers": [

    {

      "id": "1",

      "travelerType": "ADULT"

    },

    {

      "id": "2",

      "travelerType": "CHILD"

    }

  ],

  "sources": [

    "GDS"

  ],

  "searchCriteria": {

    "maxFlightOffers": 2,

    "flightFilters": {

      "cabinRestrictions": [

        {

          "cabin": "BUSINESS",

          "coverage": "MOST\_SEGMENTS",

          "originDestinationIds": [

            "1"

          ]

        }

      ],

      "carrierRestrictions": {

        "excludedCarrierCodes": [

          "AA",

          "TP",

          "AZ"

        ]

      }

    }

  }

}

**Responses:**

| **Code** | **Description** |
| --- | --- |
| 200 | Successful Operation |

{

"meta": {

"count": 2

},

"data": [

{

"type": "flight-offer",

"id": "1",

"source": "GDS",

"instantTicketingRequired": **false**,

"nonHomogeneous": **false**,

"oneWay": **false**,

"lastTicketingDate": "2021-03-08",

"numberOfBookableSeats": 5,

"itineraries": [

{

"duration": "PT30H15M",

"segments": [

{

"departure": {

"iataCode": "BOS",

"terminal": "A",

"at": "2021-11-01T21:00:00"

},

"arrival": {

"iataCode": "LGA",

"terminal": "0",

"at": "2021-11-01T22:24:00"

},

"carrierCode": "DL",

"number": "5628",

"aircraft": {

"code": "E75"

},

"duration": "PT1H24M",

"id": "1",

"numberOfStops": 0,

"blacklistedInEU": **false**

},

{

"departure": {

"iataCode": "JFK",

"terminal": "4",

"at": "2021-11-02T19:30:00"

},

"arrival": {

"iataCode": "MAD",

"terminal": "1",

"at": "2021-11-03T08:15:00"

},

"carrierCode": "DL",

"number": "126",

"aircraft": {

"code": "76W"

},

"operating": {

"carrierCode": "DL"

},

"duration": "PT7H45M",

"id": "2",

"numberOfStops": 0,

"blacklistedInEU": **false**

}

]

},

{

"duration": "PT22H19M",

"segments": [

{

"departure": {

"iataCode": "MAD",

"terminal": "1",

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},

"arrival": {

"iataCode": "AMS",

"at": "2021-11-05T23:00:00"

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"carrierCode": "KL",

"number": "1706",

"aircraft": {

"code": "73J"

},

"operating": {

"carrierCode": "KL"

},

"duration": "PT2H35M",

"id": "5",

"numberOfStops": 0,

"blacklistedInEU": **false**

},

{

"departure": {

"iataCode": "AMS",

"at": "2021-11-06T10:45:00"

},

"arrival": {

"iataCode": "BOS",

"terminal": "E",

"at": "2021-11-06T13:44:00"

},

"carrierCode": "KL",

"number": "6017",

"aircraft": {

"code": "333"

},

"operating": {

"carrierCode": "DL"

},

"duration": "PT7H59M",

"id": "6",

"numberOfStops": 0,

"blacklistedInEU": **false**

}

]

}

],

"price": {

"currency": "USD",

"total": "4825.40",

"base": "2772.00",

"fees": [

{

"amount": "0.00",

"type": "SUPPLIER"

},

{

"amount": "0.00",

"type": "TICKETING"

}

],

"grandTotal": "4825.40"

},

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"fareType": [

"PUBLISHED"

],

"includedCheckedBagsOnly": **false**

},

"validatingAirlineCodes": [

"DL"

],

"travelerPricings": [

{

"travelerId": "1",

"fareOption": "STANDARD",

"travelerType": "ADULT",

"price": {

"currency": "USD",

"total": "2412.70",

"base": "1386.00"

},

"fareDetailsBySegment": [

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"segmentId": "1",

"cabin": "FIRST",

"fareBasis": "ZN1JV0D2",

"class": "Z",

"includedCheckedBags": {

"quantity": 2

}

},

{

"segmentId": "2",

"cabin": "BUSINESS",

"fareBasis": "ZN1JV0D2",

"brandedFare": "DLONEBIZ",

"class": "Z",

"includedCheckedBags": {

"quantity": 2

}

},

{

"segmentId": "5",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"class": "L",

"includedCheckedBags": {

"quantity": 1

}

},

{

"segmentId": "6",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"brandedFare": "STANDARD",

"class": "T",

"includedCheckedBags": {

"quantity": 1

}

}

]

},

{

"travelerId": "2",

"fareOption": "STANDARD",

"travelerType": "CHILD",

"price": {

"currency": "USD",

"total": "2412.70",

"base": "1386.00"

},

"fareDetailsBySegment": [

{

"segmentId": "1",

"cabin": "FIRST",

"fareBasis": "ZN1JV0D2",

"class": "Z"

},

{

"segmentId": "2",

"cabin": "BUSINESS",

"fareBasis": "ZN1JV0D2",

"brandedFare": "DLONEBIZ",

"class": "Z"

},

{

"segmentId": "5",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"class": "L"

},

{

"segmentId": "6",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"brandedFare": "STANDARD",

"class": "T"

}

]

}

]

},

{

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"id": "2",

"source": "GDS",

"instantTicketingRequired": **false**,

"nonHomogeneous": **false**,

"oneWay": **false**,

"lastTicketingDate": "2021-03-08",

"numberOfBookableSeats": 5,

"itineraries": [

{

"duration": "PT31H15M",

"segments": [

{

"departure": {

"iataCode": "BOS",

"terminal": "A",

"at": "2021-11-01T20:00:00"

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"arrival": {

"iataCode": "LGA",

"terminal": "0",

"at": "2021-11-01T21:33:00"

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"carrierCode": "DL",

"number": "5827",

"aircraft": {

"code": "E75"

},

"duration": "PT1H33M",

"id": "3",

"numberOfStops": 0,

"blacklistedInEU": **false**

},

{

"departure": {

"iataCode": "JFK",

"terminal": "4",

"at": "2021-11-02T19:30:00"

},

"arrival": {

"iataCode": "MAD",

"terminal": "1",

"at": "2021-11-03T08:15:00"

},

"carrierCode": "DL",

"number": "126",

"aircraft": {

"code": "76W"

},

"operating": {

"carrierCode": "DL"

},

"duration": "PT7H45M",

"id": "4",

"numberOfStops": 0,

"blacklistedInEU": **false**

}

]

},

{

"duration": "PT22H19M",

"segments": [

{

"departure": {

"iataCode": "MAD",

"terminal": "1",

"at": "2021-11-05T20:25:00"

},

"arrival": {

"iataCode": "AMS",

"at": "2021-11-05T23:00:00"

},

"carrierCode": "KL",

"number": "1706",

"aircraft": {

"code": "73J"

},

"operating": {

"carrierCode": "KL"

},

"duration": "PT2H35M",

"id": "5",

"numberOfStops": 0,

"blacklistedInEU": **false**

},

{

"departure": {

"iataCode": "AMS",

"at": "2021-11-06T10:45:00"

},

"arrival": {

"iataCode": "BOS",

"terminal": "E",

"at": "2021-11-06T13:44:00"

},

"carrierCode": "KL",

"number": "6017",

"aircraft": {

"code": "333"

},

"operating": {

"carrierCode": "DL"

},

"duration": "PT7H59M",

"id": "6",

"numberOfStops": 0,

"blacklistedInEU": **false**

}

]

}

],

"price": {

"currency": "USD",

"total": "4825.40",

"base": "2772.00",

"fees": [

{

"amount": "0.00",

"type": "SUPPLIER"

},

{

"amount": "0.00",

"type": "TICKETING"

}

],

"grandTotal": "4825.40"

},

"pricingOptions": {

"fareType": [

"PUBLISHED"

],

"includedCheckedBagsOnly": **false**

},

"validatingAirlineCodes": [

"DL"

],

"travelerPricings": [

{

"travelerId": "1",

"fareOption": "STANDARD",

"travelerType": "ADULT",

"price": {

"currency": "USD",

"total": "2412.70",

"base": "1386.00"

},

"fareDetailsBySegment": [

{

"segmentId": "3",

"cabin": "FIRST",

"fareBasis": "ZN1JV0D2",

"class": "Z",

"includedCheckedBags": {

"quantity": 2

}

},

{

"segmentId": "4",

"cabin": "BUSINESS",

"fareBasis": "ZN1JV0D2",

"brandedFare": "DLONEBIZ",

"class": "Z",

"includedCheckedBags": {

"quantity": 2

}

},

{

"segmentId": "5",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"class": "L",

"includedCheckedBags": {

"quantity": 1

}

},

{

"segmentId": "6",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"brandedFare": "STANDARD",

"class": "T",

"includedCheckedBags": {

"quantity": 1

}

}

]

},

{

"travelerId": "2",

"fareOption": "STANDARD",

"travelerType": "CHILD",

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"total": "2412.70",

"base": "1386.00"

},

"fareDetailsBySegment": [

{

"segmentId": "3",

"cabin": "FIRST",

"fareBasis": "ZN1JV0D2",

"class": "Z"

},

{

"segmentId": "4",

"cabin": "BUSINESS",

"fareBasis": "ZN1JV0D2",

"brandedFare": "DLONEBIZ",

"class": "Z"

},

{

"segmentId": "5",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"class": "L"

},

{

"segmentId": "6",

"cabin": "ECONOMY",

"fareBasis": "TL2J51M3",

"brandedFare": "STANDARD",

"class": "T"

}

]

}

]

}

],

"dictionaries": {

"locations": {

"MAD": {

"cityCode": "MAD",

"countryCode": "ES"

},

"LGA": {

"cityCode": "NYC",

"countryCode": "US"

},

"BOS": {

"cityCode": "BOS",

"countryCode": "US"

},

"AMS": {

"cityCode": "AMS",

"countryCode": "NL"

},

"JFK": {

"cityCode": "NYC",

"countryCode": "US"

}

},

"aircraft": {

"333": "AIRBUS A330-300",

"E75": "EMBRAER 175",

"76W": "BOEING 767-300 (WINGLETS)",

"73J": "BOEING 737-900"

},

"currencies": {

"USD": "US DOLLAR"

},

"carriers": {

"KL": "KLM ROYAL DUTCH AIRLINES",

"DL": "DELTA AIR LINES"

}

}

}

**Step 2: Confirm the availability and price with Flight Pricing:**

The Flight Search API retrieves a list of all possible flights to a selected destination. The API comes in one:

**POST** operation Confirm pricing of given flight.

The price of airfare fluctuates constantly, and prices may change between the time you search and the time you book. Flight Pricing allows you to confirm that the selected flight is still available at the originally listed price.

​**POST/flight-offers​/pricing:**

Confirm pricing of given flight Offers.

#### **Parameters**

Try it out

| **Name** | **Description** |
| --- | --- |
| **X-HTTP-Method-Override**  **string**  ***(header)*** | the HTTP method to apply  *Default value*: GET |
| **priceFlightOffersBody**  ***(body)*** | list of criteria to confirm the price of a dedicated flight-offers |

{

  "data": {

    "type": "flight-offers-pricing",

    "flightOffers": [

      {

        "type": "flight-offer",

        "id": "1",

        "source": "GDS",

        "instantTicketingRequired": **false**,

        "nonHomogeneous": **false**,

        "oneWay": **false**,

        "lastTicketingDate": "2020-08-04",

        "numberOfBookableSeats": 9,

        "itineraries": [

          {

            "duration": "PT32H15M",

            "segments": [

              {

                "departure": {

                  "iataCode": "SYD",

                  "terminal": "1",

                  "at": "2021-02-01T19:15:00"

                },

                "arrival": {

                  "iataCode": "SIN",

                  "terminal": "1",

                  "at": "2021-02-02T00:30:00"

                },

                "carrierCode": "TR",

                "number": "13",

                "aircraft": {

                  "code": "789"

                },

                "operating": {

                  "carrierCode": "TR"

                },

                "duration": "PT8H15M",

                "id": "1",

                "numberOfStops": 0,

                "blacklistedInEU": **false**

              },

              {

                "departure": {

                  "iataCode": "SIN",

                  "terminal": "1",

                  "at": "2021-02-02T22:05:00"

                },

                "arrival": {

                  "iataCode": "DMK",

                  "terminal": "1",

                  "at": "2021-02-02T23:30:00"

                },

                "carrierCode": "TR",

                "number": "868",

                "aircraft": {

                  "code": "788"

                },

                "operating": {

                  "carrierCode": "TR"

                },

                "duration": "PT2H25M",

                "id": "2",

                "numberOfStops": 0,

                "blacklistedInEU": **false**

              }

            ]

          },

          {

            "duration": "PT15H",

            "segments": [

              {

                "departure": {

                  "iataCode": "DMK",

                  "terminal": "1",

                  "at": "2021-02-05T23:15:00"

                },

                "arrival": {

                  "iataCode": "SIN",

                  "terminal": "1",

                  "at": "2021-02-06T02:50:00"

                },

                "carrierCode": "TR",

                "number": "867",

                "aircraft": {

                  "code": "788"

                },

                "operating": {

                  "carrierCode": "TR"

                },

                "duration": "PT2H35M",

                "id": "5",

                "numberOfStops": 0,

                "blacklistedInEU": **false**

              },

              {

                "departure": {

                  "iataCode": "SIN",

                  "terminal": "1",

                  "at": "2021-02-06T06:55:00"

                },

                "arrival": {

                  "iataCode": "SYD",

                  "terminal": "1",

                  "at": "2021-02-06T18:15:00"

                },

                "carrierCode": "TR",

                "number": "12",

                "aircraft": {

                  "code": "789"

                },

                "operating": {

                  "carrierCode": "TR"

                },

                "duration": "PT8H20M",

                "id": "6",

                "numberOfStops": 0,

                "blacklistedInEU": **false**

              }

            ]

          }

        ],

        "price": {

          "currency": "EUR",

          "total": "546.70",

          "base": "334.00",

          "fees": [

            {

              "amount": "0.00",

              "type": "SUPPLIER"

            },

            {

              "amount": "0.00",

              "type": "TICKETING"

            }

          ],

          "grandTotal": "546.70"

        },

        "pricingOptions": {

          "fareType": [

            "PUBLISHED"

          ],

          "includedCheckedBagsOnly": **true**

        },

        "validatingAirlineCodes": [

          "HR"

        ],

        "travelerPricings": [

          {

            "travelerId": "1",

            "fareOption": "STANDARD",

            "travelerType": "ADULT",

            "price": {

              "currency": "EUR",

              "total": "546.70",

              "base": "334.00"

            },

            "fareDetailsBySegment": [

              {

                "segmentId": "1",

                "cabin": "ECONOMY",

                "fareBasis": "O2TR24",

                "class": "O",

                "includedCheckedBags": {

                  "weight": 20,

                  "weightUnit": "KG"

                }

              },

              {

                "segmentId": "2",

                "cabin": "ECONOMY",

                "fareBasis": "O2TR24",

                "class": "O",

                "includedCheckedBags": {

                  "weight": 20,

                  "weightUnit": "KG"

                }

              },

              {

                "segmentId": "5",

                "cabin": "ECONOMY",

                "fareBasis": "X2TR24",

                "class": "X",

                "includedCheckedBags": {

                  "weight": 20,

                  "weightUnit": "KG"

                }

              },

              {

                "segmentId": "6",

                "cabin": "ECONOMY",

                "fareBasis": "H2TR24",

                "class": "H",

                "includedCheckedBags": {

                  "weight": 20,

                  "weightUnit": "KG"

                }

              }

            ]

          }

        ]

      }

    ]

  }

}

**Responses:**

| **Code** | **Description** |
| --- | --- |
| 200 | Successful Operation |

{

"data": {

"type": "flight-offers-pricing",

"flightOffers": [

{

"type": "flight-offer",

"id": "1",

"source": "GDS",

"instantTicketingRequired": **false**,

"nonHomogeneous": **false**,

"lastTicketingDate": "2020-03-01",

"itineraries": [

{

"segments": [

{

"departure": {

"iataCode": "GIG",

"at": "2020-03-01T23:30:00"

},

"arrival": {

"iataCode": "CMN",

"terminal": "2",

"at": "2020-03-02T12:10:00"

},

"carrierCode": "AT",

"number": "212",

"aircraft": {

"code": "788"

},

"operating": {

"carrierCode": "AT"

},

"id": "3",

"numberOfStops": 0,

"duration": "PT8H40M"

},

{

"departure": {

"iataCode": "CMN",

"terminal": "2",

"at": "2020-03-02T15:45:00"

},

"arrival": {

"iataCode": "MAD",

"at": "2020-03-02T17:40:00",

"terminal": "4S"

},

"carrierCode": "AT",

"number": "970",

"aircraft": {

"code": "73G"

},

"operating": {

"carrierCode": "AT"

},

"id": "4",

"numberOfStops": 0,

"duration": "PT1H55M"

}

]

},

{

"segments": [

{

"departure": {

"iataCode": "MAD",

"terminal": "4S",

"at": "2020-03-05T18:40:00"

},

"arrival": {

"iataCode": "CMN",

"at": "2020-03-05T20:30:00",

"terminal": "2"

},

"carrierCode": "AT",

"number": "971",

"aircraft": {

"code": "738"

},

"operating": {

"carrierCode": "AT"

},

"id": "47",

"numberOfStops": 0,

"duration": "PT1H50M"

},

{

"departure": {

"iataCode": "CMN",

"at": "2020-03-06T16:40:00",

"terminal": "2"

},

"arrival": {

"iataCode": "GIG",

"at": "2020-03-06T22:00:00"

},

"carrierCode": "AT",

"number": "213",

"aircraft": {

"code": "788"

},

"operating": {

"carrierCode": "AT"

},

"id": "48",

"numberOfStops": 0,

"duration": "PT9H20M"

}

]

}

],

"price": {

"currency": "USD",

"total": "2778.98",

"base": "2568.00",

"fees": [

{

"amount": "0.00",

"type": "SUPPLIER"

},

{

"amount": "0.00",

"type": "TICKETING"

},

{

"amount": "0.00",

"type": "FORM\_OF\_PAYMENT"

}

],

"grandTotal": "2778.98",

"billingCurrency": "USD"

},

"pricingOptions": {

"fareType": [

"PUBLISHED"

],

"includedCheckedBagsOnly": **true**

},

"validatingAirlineCodes": [

"AT"

],

"travelerPricings": [

{

"travelerId": "1",

"fareOption": "STANDARD",

"travelerType": "ADULT",

"price": {

"currency": "USD",

"total": "1625.49",

"base": "1520.00",

"taxes": [

{

"amount": "31.99",

"code": "BR"

},

{

"amount": "24.27",

"code": "JD"

},

{

"amount": "44.59",

"code": "MA"

},

{

"amount": "0.69",

"code": "OG"

},

{

"amount": "3.95",

"code": "QV"

}

]

},

"fareDetailsBySegment": [

{

"segmentId": "3",

"cabin": "BUSINESS",

"fareBasis": "DA0R0BRA",

"class": "D",

"includedCheckedBags": {

"quantity": 3

}

},

{

"segmentId": "4",

"cabin": "BUSINESS",

"fareBasis": "DA0R0BRA",

"class": "D",

"includedCheckedBags": {

"quantity": 3

}

},

{

"segmentId": "47",

"cabin": "ECONOMY",

"fareBasis": "XL0R0BRA",

"class": "X",

"includedCheckedBags": {

"quantity": 2

}

},

{

"segmentId": "48",

"cabin": "ECONOMY",

"fareBasis": "XL0R0BRA",

"class": "X",

"includedCheckedBags": {

"quantity": 2

}

}

]

},

{

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"total": "1153.49",

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"amount": "31.99",

"code": "BR"

},

{

"amount": "24.27",

"code": "JD"

},

{

"amount": "44.59",

"code": "MA"

},

{

"amount": "0.69",

"code": "OG"

},

{

"amount": "3.95",

"code": "QV"

}

]

},

"fareDetailsBySegment": [

{

"segmentId": "3",

"cabin": "BUSINESS",

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"class": "D",

"includedCheckedBags": {

"quantity": 3

}

},

{

"segmentId": "4",

"cabin": "BUSINESS",

"fareBasis": "DA0R0BRACH",

"class": "D",

"includedCheckedBags": {

"quantity": 3

}

},

{

"segmentId": "47",

"cabin": "ECONOMY",

"fareBasis": "XL0R0BRACH",

"class": "X",

"includedCheckedBags": {

"quantity": 2

}

},

{

"segmentId": "48",

"cabin": "ECONOMY",

"fareBasis": "XL0R0BRACH",

"class": "X",

"includedCheckedBags": {

"quantity": 2

}

}

]

}

],

"paymentCardRequired": **false**

}

]

},

"dictionaries": {

"locations": {

"MAD": {

"cityCode": "MAD",

"countryCode": "ES"

},

"GIG": {

"cityCode": "RIO",

"countryCode": "BR"

},

"CMN": {

"cityCode": "CAS",

"countryCode": "MA"

}

}

}

}

**Step 3: Create the reservation with Flight Booking**

Flight Booking is the final API in the process and allows you to complete the booking.

Responses:

“Message”: “successfully booking a flight"