

LAB- Api Design

STEP1

In this lab, you will be working on designing Rest API for Restaurant System API using RAML.

Open 01-resources-and-methods.txt given to you in raml-docs folder .

According to my discussion earlier, fill this document with Resource URIs and methods.

Login to your Anypoint platform account at anypoint.mulesoft.com

From the left menu, click on **design center**

Click the Create button next and select “New API Specification”

Give Project Name as “restaurants-sapi, Select “**I'm comfortable designing it on my own**” radio button and click on “ createAPI”

After title, give baseUri as <http://localhost:8081/api>

Add all the resources

Now the file should look like below

```
#%RAML 1.0
title: restaurants-sapi
baseUri: http://localhost:8081/api

/restaurants:
  /{restaurant_id}:
    /menus:
      /{menu_id}:
        /menuitems:
          /{menu_item_id}:
            /inventory:
```

For each URI, add the http methods as show below:

Now the file should look like below:

```
/restaurants:
  get:
  post:
  /{restaurant_id}:
    get:
    put:
    delete:
    /menus:
      get:
      post:
      /{menu_id}:
        get:
        delete:
        /menuitems:
          get:
          post:
          /{menu_item_id}:
            get:
            delete:
            /inventory:
              get:
              post:
```

Now we want to describe headers for GET /restaurants. We want to describe an optional header ACCEPT

Change the raml as show below:

```
/restaurants:
  get:
    headers:
      Accept?:
        type: string
        default: application/json
        description: This is a header for doing content negotiation
```

Now we want to describe about pagination related query parameters page and page size. So, change the raml as below:

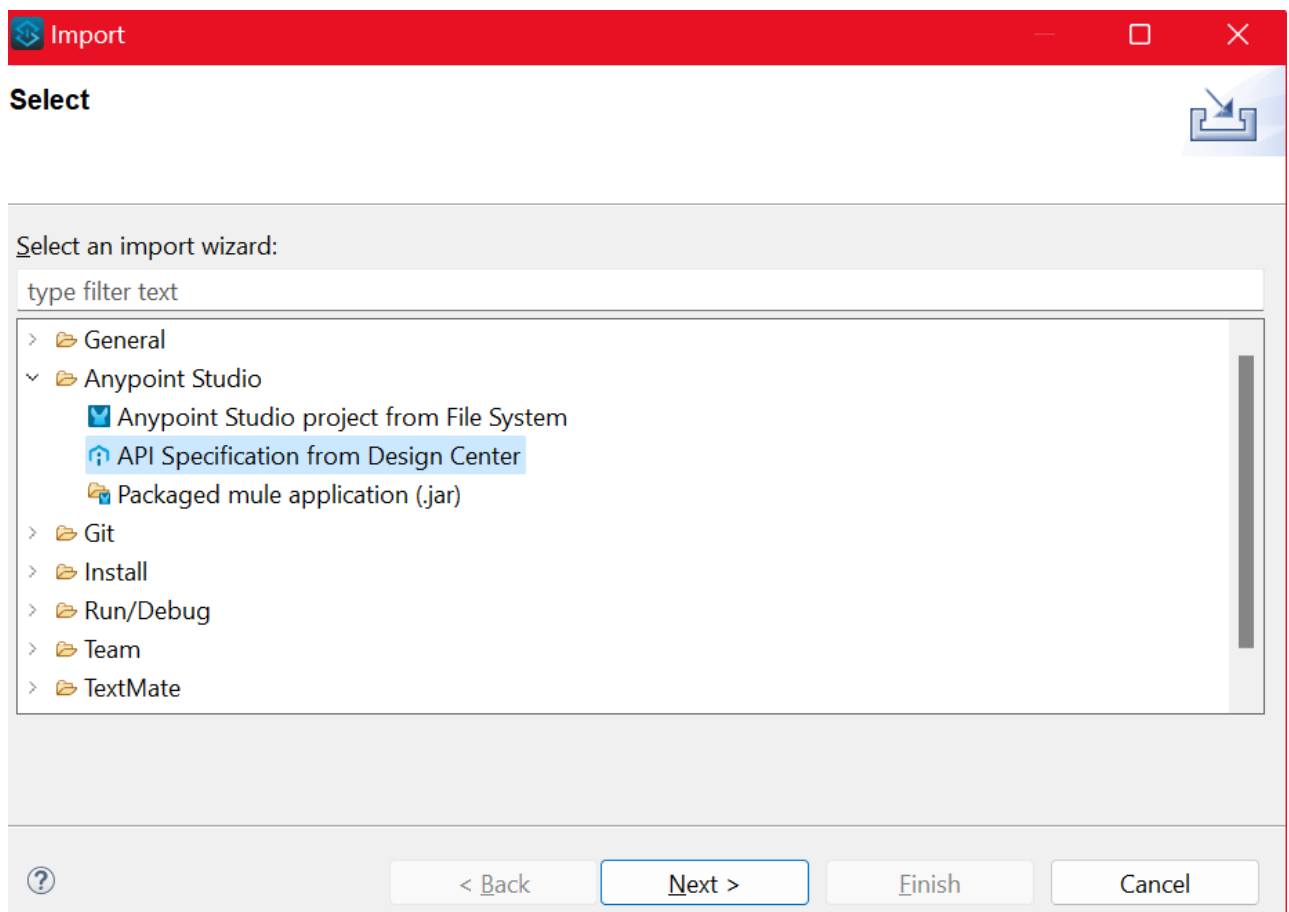
```
/restaurants:
  get:
    queryParameters:
      pageSize?:
        type: number
        default: 10
        minimum: 10
        description: This is the pagesize for paginated response
      page?:
        type: number
        default: 1
        minimum: 1
        description: This is the page Number for paginated response
    headers:
      Accept?:
        type: string
        default: application/json
        description: This is a header for doing content negotiation
```

STEP2

Till now, we were creating RAML in design center.

From Now, I want to design RAML in anypoint studio

Go to anypoint studio, click on File -> import and select “ Api Specification from design center” as shown below:



Click Next.

Add your anypoint platform account in studio by click on “Add Account” button

You should see the restaurants-sapi.

Select it and click on Finish. The API should be imported in Studio.

Open the main raml file restaurants-sapi.raml and observe that it is the same file which we created in design center.

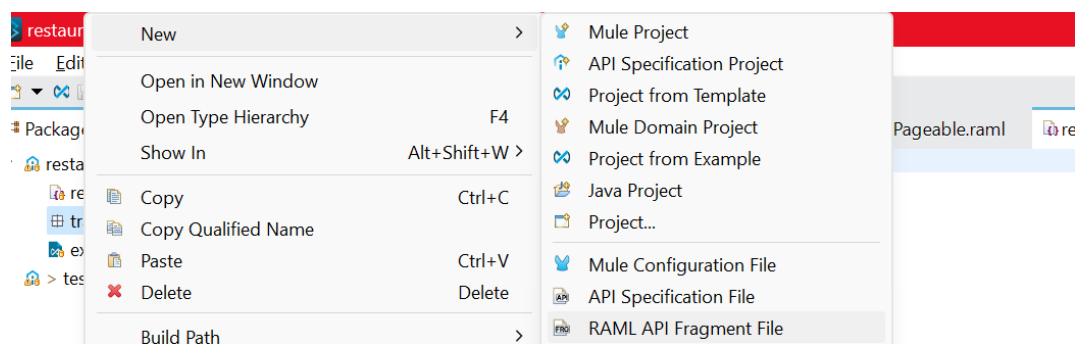
For all collection resources, these pagination related query parameters page and pageSize will be common.

So, we can add same query parameters to menus and menuitem resources also. But that would be duplication .

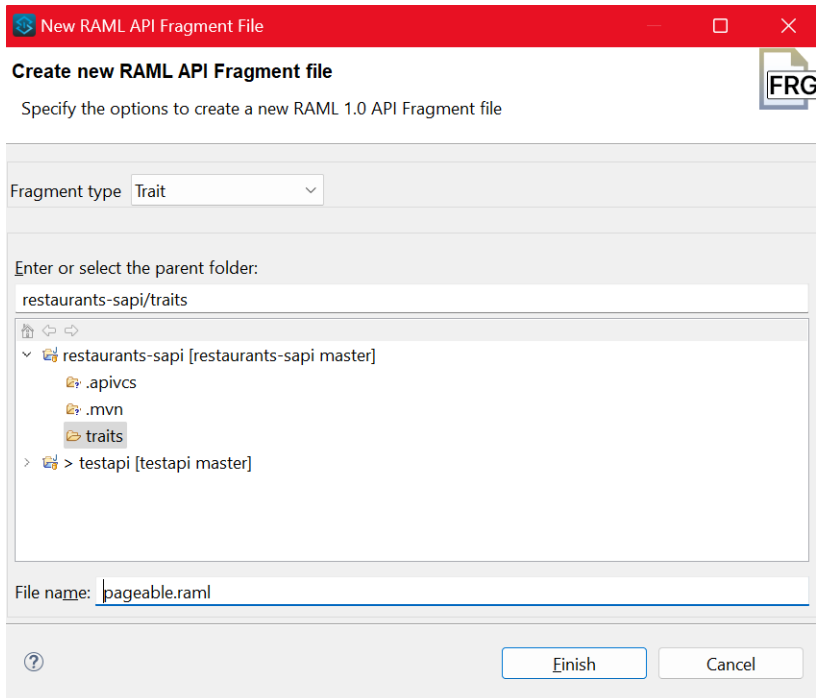
So, better to create a trait for describing query parameters.

Create a new folder with name “traits” under the project

Right click on “traits” folder and select new-> RAML API Fragment File as shown below:



Select the Fragment type as Trait and give the file name as Pageable.raml and click Finish



Now, cut the queryParameters definition from the main raml file and paste it into pageable.raml.

Pageable.raml should look like below:

```
1 1 #%RAML 1.0 Trait
2
3 queryParameters:
4   pageSize?:
5     type: number
6     default: 10
7     minimum: 10
8     description: This is the pagesize for paginated response
9   page?:
10    type: number
11    default: 1
12    minimum: 1
13    description: This is the page Number for paginated response
```

Now, we need to define this trait in the main raml as shown below:

```

restaurants-sapi.raml x
1 #RAML 1.0
2 title: restaurants-sapi
3 baseUrl: http://localhost:8081/api
4 mediaType:
5   - application/json
6
7 traits:
8   Pageable: !include traits/pageable.raml
9

```

Now, apply this trait to GET /restaurants as shown below:

```

/restaurants:
  get:
    is: [Pageable]

```

Similarly, we want to define a trait with name “Acceptable” which describes about “Accept” header.

So, create a new Trait file with Name “Acceptable.raml” just like how you created Pageable.raml above.

The Acceptable.raml should look like below:

```

Acceptable.raml x
1 #RAML 1.0 Trait
2 headers:
3   Accept?:
4     type: string
5     default: application/json
6     description: This is a header for doing content negotiation
7

```

Now, Define and apply this trait also in the main raml file as shown below:

```

traits:
  Pageable: !include traits/pageable.raml
  Acceptable: !include traits/Acceptable.raml

/restaurants:
  get:
    is: [Pageable,Acceptable]

```

Apply Pageable trait to get method of other collection resources /menus and /menuitems just like how we applied to /restaurants. Main raml file should look like below:

```

/restaurants:
  get:
    is: [Pageable,Acceptable]
  post:
    /{restaurant_id}:
      get:
      put:
      delete:
    /menus:
      get:
        is: [Pageable]
      post:
        /{menu_id}:
          get:
          delete:
        /menuitems:
          get:
            is: [Pageable]

```

This is the end of the Exercise