Restaurant Suggestion and Management Application.

We want to develop a spring boot application to a restaurant chain which has various restaurants and each restaurant serves multiple cuisines. Each Restaurant under the chain is independent and can have completely different cuisines which are popular around the area of the restaurant. Each restaurant can have multiple chefs and a chef can know how to do multiple cuisines.

So sample details for a restaurant are

```
{
      restatunt_id: 1234,
      restatunt_name: abcd,
      restatunt_cusines: [italian,indian,chinese,vietnamese],
      restarunt_chefs: [{ chef_name: defh, chef_salary: 2500, chef_cusines:
[italian,indian]},
                          { chef_name: ksdf, chef_salary: 2800, chef_cusines:
[chinese,vietnamese]}],
      restarunt_rating: 9,
      restarunt_city: cambridge ,
      restarunt_province: ON
}
```

I want to develop a spring boot based REST web application which is able to

1) add new restaurants. - POST Mapping onto /restaurants. --- 40 points
request body to contain everything all details for restaurant given above except restarunt_id

Example request :

```
 POST /restaurants
{
      restatunt_name: abcd,
      restatunt_cusines: [italian,indian,chinese,vietnamese],
      restarunt_chefs:[
{ chef_name: defh, chef_salary: 2500, chef_cusines: [italian,indian]},
{ chef_name: ksdf, chef_salary: 2800, chef_cusines: [chinese,vietnamese]}
                    ],
      restarunt_rating: 9,
      restarunt_city: cambridge ,
      restarunt_province: ON
}
```

Our spring application needs to consume this post request and save this restaurant for further processing and return restaurant id as result.

Expected return :

- Status code 201 with `{restarunt_id: 1234, create_date: "2021-04-20'T'13:20:10"}` as response body.
- Status code 400 in case bad data is used to create a restaurant. For example chef name is null for one of the enty or something like that.
- Status code 500 incase there is some error while saving or processing the request.

2)update details in existing restaurants.

PUT mapping to /restaurants/<restaurant-id> --- 40 points
request body to contain all the details for restaurant including restarunt_id
Example request:

```
PUT /restaurants/1234
{
     restatunt_id: 1234,
     restatunt_name: changed_name,
     restatunt_cusines: [italian,indian,chinese,vietnamese],
     restarunt_chefs: [{ chef_name: defh, chef_salary: 2500, chef_cusines:
[italian,indian]},
                    { chef_name: ksdf, chef_salary: 2800, chef_cusines:
[chinese,vietnamese]}],
     restarunt_rating: 9,
     restarunt_city: waterloo ,
     restarunt_province: ON
}
```

Our spring boot application needs to consume this PUT request and retrieve the existing restaurant and update the required values and save them for further processing and return restatunt id .

Expected return :

- Status code 200 with `{restarunt_id: 1234, update_date: "2021-04-20'T'13:20:10"}` as response body.
- Status code 400 in case bad data is used to create a restaurant. For example chef name is null for one of the enty or something like that.
- Status code 500 incase there is some error while saving or processing the request.
- 404 incase there is no restaurant with the id provided.

3) Delete existing restaurants. DELETE mapping on /restaurants/<restaurant-id> --- 40 points

Example request: DELETE /restatunts/1234

our spring boot application needs to take the id of the restaurant and retrieve it and delete it. if restaurant id is not found 404 needs to be returned.

Expected result:
- Status code 200 with `{restarunt_id: 1234, delete_date: "2021-04-20'T'13:20:10"}` as response body.
- Status code 500 incase there is some error while deleting or processing the request.
- 404 in case there is no restaurant with the id provided.

4) Search restaurant based on restarunt_name , restarunt_id, restarunt_city, restarunt_province,restarunt_rating , restarunt_cusines available

We want an exact search based on each parameter.

```
GET /restaurants/<restarunt_id> should return restarunt object in JSON form
with all details  --- 10 points

GET /restaurants?restarunt_name=abcd should return all restaurants which
contain the provided search name in their name. --- 10 points

GET /restaurants?restarunt_city=cambridge should return all restaurants in
city --- 10 points

GET /restaurants?restarunt_province=ON should return all restaurants in the
provided province. --- 10 points

GET /restaurants?restarunt_rating=8 should return all restaurants which
provided a search rating. --- 10 points

GET /restaurant?restarunt_cusine=indian should return all restaurants which
serve provided search cuisine. --- 10 points
```

4Bouns) you'll have extra credit if you can provide search based on multiple parameters like being able to search on rating and cusine at the same time. -- 20 points (Bonus Question)

```
GET /restaurants?restarunt_cusine=indian&rating=8
```

I should be able to combine any conditions which are passed as query parameters.

5) Search chefs based on restarunt_id he is working in , cuisines he can make

```
GET /chefs?restarunt_id=1234 should return all the chefs working in the
given restaurant. --- 10 points

GET /chefs?restarunt_id=1234&cusine=indian should return all chefs working
in the given restaurant and know how to make the given cuisine. --- 10
points

GET /chefs?restarunt_id=1234&name=defh should return all chefs working in
the given restaurant and their name contains given search parameter. --- 10
points

GET /chefs?name=dfeh should return all chefs working in any of restaurant
and name contains given search parameter (BONUS question) --- 10 points

GET /chefs?cuisine=indian should return all chefs working in any of
restaurant and know how to make the given cuisine (BONUS question) --- 10
points
```

HINTS:
   ❖ You can make assumptions when you are not clear on anything. Just Document your assumptions and send it to us.
   ❖ We expect to have working code.
   ❖ As a good coding practice it's good to write unit tests though unit tests will be given bonus points.
   ❖ I don't expect to also provide Backend database connectivity, you can store data in java collections. Feel free to choose whatever collections you think are fit.
   ❖ You will be given bonus points if you also provide code for the backend database. in case you are using a backend database please submit the code with H2 Database and add confs to persist to some local file of your choice.
   ❖ You are free to use any build tool of your choice. maven/gradle/sbt any of them works for us.

How to submit
      You can submit in 2 ways.
   1. Push to your personal git repository and share the repository link to us. Please create a public repository.
   2. Zip the contents of your spring boot and send the zip to us through email.

Helpful resources:

GIT
- ❖ https://product.hubspot.com/blog/git-and-github-tutorial-for-beginners

SPRING BOOT
- ❖ https://spring.io/quickstart
- ❖ https://docs.spring.io/spring-boot/docs/2.4.4/reference/htmlsingle/#boot-documentation
- ❖ https://dzone.com/articles/spring-boot-quickstart
- ❖ https://www.tutorialspoint.com/spring_boot/index.htm
- ❖ https://www.baeldung.com/spring-boot-h2-database
- ❖
REST
- ❖ https://developer.mozilla.org/en-US/docs/Web/HTTP/Status
- ❖ https://developer.mozilla.org/en-US/docs/Web/HTTP/Methods