## Exercise 5.1: Fetch recipes via a Rest API

There is a back-end server to accompany the Recipe Book application. Open the documentation endpoint <https://localhost:3000/api/docs> and get familiar with the endpoints. Extend your application to fetch recipes using a rest API

Steps:

* Add a menu entry *“Refresh Recipes “*.
* Add an id property to the Recipe class.
* Change the methods of the RecipeRepository to make HTTP requests using OkHttp to fetch a list of all available recipes. Fetch all recipes when the activity is created and after pressing the Refresh button from the menu.
* Use this API endpoint:   
  <https://localhost:3000/api>/recipes
* Make sure you add an authorization header to your request. For the sake of simplicity, use your ANDROID\_ID as a username with an empty password.
* The result of the requests is in JSON format. Use JSONArray and JSONObject to parse the data.

Remarks:

* Take care of the required permissions for your app.
* Use the trick from the lecture to be able to access the network from the UI thread. When running on a real device: Do you notice a lag?
* If the data in a ListView does not refresh after updating the data you can force the UI to update the view with either calling invalidate() on the ListView or notifyDataSetChanged() on the Adapter.

## Exercise 5.2: Fetch recipe details via the Rest API

When clicking on an item from the Recipe ListView, provide the recipe’s id as an Intent extra. Upon starting the new activity, make a request to the server to fetch details about the recipe. The endpoint returns an image encoded as a Base64 string. You need to convert this to a byte array and then to a Bitmap object. Afterwards, you can set the Bitmap to be shown inside the image view.

## Exercise 5.3: Add new recipes to the database via the Rest API

Use the POST endpoint to add new recipes to the database. To do that, you need to use MultipartBody.Builder as your request body. Multipart is used as it allows for images to be send as part of the request, which is something we are going to do later.

## Exercise 5.4: Search recipes by name (optional)

In the Recipe List Activity add an EditText field and a button to search recipes by name, similar to the movie database example from the lecture. In the HttpBuilder add the value from the text field as parameter if it’s not empty and afterwards perform a new request to the back-end server. The list should now only contain recipes that start with the string from the text field.