Fullstack Engineering Quiz

Ebates asks all candidates to complete a simple quiz. It shouldn't take more than 1.5 hours to complete. You can complete this quiz at home or wherever you'd like using whatever resources that you want. Obviously, the exception is that we want you to take the quiz, not someone else.

Please spend no more than 1 .5 hours to complete the quiz. At the top of your response, please write your name, and the date and time you started and stopped the quiz. Please include your answers below each corresponding question using Courier New as the font.

-- BEGIN QUIZ --

Overview:

Pretend, you work at a company called Acme Finghi Trading Company. You specialize in selling rare food from the funghi kingdom. Customers can come to Acme's e-commerce site and buy products that are shipped to their destination of choice.

As part of Acme's engineering team, you're working on getting the new e-commerce site up and running. You are given a story by the product manager that says the following:

"As a customer, I should be able to search by species and/or country of origin for all types of mushrooms and funghi."

Someone has already built most of the database tables and include the following tables

- species - Defines the different types of species of mushrooms.
- country - Defines the list of countries where the mushrooms might come from
- species_inventory - Defines the species, its country of origin, and the number remaining in inventory. .

The table structure looks like this:

SPECIES

Column	Constraints	Description

species_id	INT, PK	Primary key
species_latin_name	VARCHAR, UNIQUE	Latin name of the species such as “Anamita Muscaria”.
species_name	VARCHAR, NOT NULL	Name of the species using a friendly name. For example, Agaricus bisporus, is called the “White Button Mushroom”.

COUNTRY

Column	Constraints	Description
country_id	INT, PK	Primary key
country_name	VARCHAR, NOT NULL	Name of country (e.g. United States, Japan, Italy)
country_code 2	CHAR(2)	Two character country code (e.g. US, JP, IT)

SPECIES_INVENTORY

Column	Constraints	Description
species_inventory_id	INT, PK	Primary key
species_id	INT, FK species(species_id), NOT NULL	FK to species table.
country_id	INT, FK country(country_id), NOT NULL	Country of origin of this mushroom.
inventory_count	INT, NOT NULL,	Number of these you have left.
next_shipment_date	Date	The date of the next shipment.
price	Money, Not null	

Question 1 - API

The Acme web app is heavily built on JavaScript and simply calls a Species microservice for its data. Using whatever language and/or framework you want, write a function or method that accepts one or more species and an optional country of origin HTTP request parameter and returns a json blob of matching Species objects. Make the assumption that there is already a function you can call to perform the search. The function signature to perform the search is as follows is listed below.

```
def Species[] searchSpecies(species[], countryCode2 = null) ;
```

Question 2 - Test Cases

Using whatever language you want, write test cases to test the function you wrote in Question 1.

Question 3- JavaScript

The function you wrote in question 1 is exposed through the path "/search" . Using whatever JavaScript framework you want, write JavaScript that calls the /search route and binds the result to an HTML element that contains the following fields: Species Name, Latin Name, Country of Origin Name, and Next Shipment Date. Only show next shipment date if the inventory is 0 and the next shipment date is in the future. Use whatever CSS you feel

Question 4 - SQL

Query 1 - Write a query that returns the necessary fields to satisfy the requirements in Question 3.

Query 2 - Your purchase manager comes to you and says "I really need a report that tells me how many of each species I have left total in inventory plus the number of remaining in inventory from each country." Show the sql using the following columns:

- Species ID
- Species Name
- Species Latin Name
- Total Remaining in Inventory
- <Country 1> Inventory
- <Country 2> Inventory
- <Country 3> Inventory
  And so on.

If it helps, assume you only have 3 countries: 1 = Italy, 2 = United States, 3 = Japan.