Online Sponsored Ads

General

As an ad tech company we want to develop a module that enables sellers to create campaigns for promoting their products.

Entities

There are (at least) two main entities composing this module:

1. `Product` - simply represents a product with title, category, price and product-serial number (can be any int/string-sequence for the sake of this exercise)
2. `Campaign` - a group of products to promote(/advertise) with shared properties: start-date, bid. As well, the campaign has a name.
    a. Campaign is considered active for the 10 days following its start-date.
    b. Different campaigns may promote the same product

APIs

The module should provide 2 APIs:

1. ***Create campaign*** - api for creating a campaign
    a. Parameters:
        i. name
        ii. startDate
        iii. List of product identifiers to promote.
        iv. Bid - the price seller is willing to pay for a click on a product advertised in this campaign
    b. Expected result: a campaign is created (with specified parameters) ready to promote all products
    c. Response - a json representation of the created campaign
2. ***Serve Ad*** - api to retrieve ads
    a. Parameters:
        i. Category - a String representing category of products
    b. Expected Result:
        i. the api should return a single promoted product, the one with the highest bid, belonging to active campaign/s from the specified category. If there are no promoted product for the matching category simply return a promoted product with the highest bid.
            - For simplicity, if more than one product is found, you may return the

first or random.

ii. The response should be in JSON format

- **Bonus: try to optimize the query for products by category**

Assumptions

On initialization you may generate a bulk of products, each with random category (select one from few possibilities), price (random or even fixed), and some unique product-serial number

What and How To Deliver

We'd prefer to see the api calls working in http (with everything it means).

Wherever this task is not clear you may make any assumptions that make life easier. Wherever you see that implementing some functionality takes non-reasonable time you can replace it with something simpler, just consider adding a comment mentioning the preferred implementation.

There are many ways to share or deliver a project. Feel free to choose one you are comfortable with as long as we can easily see the code itself and see that indeed it compiles and works correctly.

Also, assuming you are using some online repository to store the files, please try to make frequent commits so we can see your progress and the time it took you (time is not a big factor here, but still…)

Good Luck!

Mabaya Team