

Assignment 3

Due Date: February 26, 2025 at 7:30 PM

Overview

This assignment will be worth **7%** of your total grade or 70 points. You cannot use the HTTP module, only Express. If the HTTP module is used instead of Express you will receive a 0. If you use the ES6 import statement **instead** of the CommonJS require for node modules taught during lecture, you will lose 10%.

Specifications

Rich Barton, the CEO of Zillow, needs your help **developing a simple API to determine the Zestimates of houses as well as fetching housing data easily.**

For this assignment, you **will write an API Server that listens on the port provided by the first argument to your program** to provide details about a home.

JSON API Server

Write a server called zillow.js that serves JSON data when it receives a GET request to the path `/v1/zillow/zestimate`. Expect the request to contain a query string with a keys `'sqft'`, `'bed'`, and `'bath'` all of which will be **required** integers. The Zestimate is calculated as follows: $\text{Zestimate} = \text{sqft} * \text{bed} * \text{bath} * 10$ and you should return to the use JSON in the following format: `{zestimate: Number }`

For example: `/v1/zillow/zestimate?sqft=2000&bed=3&bath=4`

The JSON response should contain only the `'zestimate'` property:

For example: `{ "zestimate": 240000 }`

Add a second endpoint at the path `/v1/zillow/houses` that accepts an **optional** parameter `'city'`. If city is provided as a parameter, the return all houses that match the given city. If no city parameter is provided, then return an empty array `[]`. If a city is provided and the city is not found, return an empty array `[]`

You will not connect to a real database, but to simulate one, use this array of objects:

```
[ { price: 240000, city: "baltimore" }, { price: 300000, city: "austin" },  
{ price: 400000, city: "austin" }, { price: 1000000, city: "seattle" }, { price:  
325000, city: "baltimore" }, { price: 550000, city: "seattle" }, { price: 250000,  
city: "boston" } ]
```

For example: `/v1/zillow/houses?city=baltimore`

The JSON response should contain only the the list of houses in baltimore.

For example: `[{ price: 240000, city: "baltimore" }, { price: 325000, city: "baltimore" }]`

For example: `/v1/zillow/houses?city=raleigh`

The JSON response should contain: `[]`

For example: `/v1/zillow/houses`

The JSON response should contain: `[]`

Add a third endpoint at the path `'/v1/zillow/prices'` that accepts a **required** parameter `'usd'`. This will return all houses equal to or under a given price. If no houses are under the given price, return an empty array: `[]`

For example: `/v1/zillow/prices?usd=300000`

The JSON response should contain: `[{ price: 240000, city: "baltimore" }, { price: 300000, city: "austin" }, { price: 250000, city: "boston" }]`

For example: `/v1/zillow/prices?usd=10000`

The JSON response should contain: `[]`

Please return a 200 status code if the request is correct and a 404 if the request is not correct (invalid endpoint, arguments, etc.)

Submission

Please submit the following on Blackboard:

- `zillow.js`