





Objective: Allow for location-based searches for listings

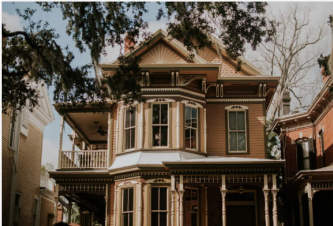
# Searching for a country...



 Host 



### Results for "Canada"


Filter By Price: Low to High



**\$26/day**



Picturesque 2 Story House - grea...  
12 Morris Ave, Toronto, ON, CA


  1 guests



**\$41/day**



Bright comfortable room within a ...  
8110 Rockaway Ave, Toronto, ON, ...


  2 guests



**\$124/day**



Clean and fully furnished apartme...  
3210 Scotchmere Dr W, Toronto, O...





  3 guests





**\$158/day**



Cozy, clean, and affordable studio...  
7009 Strawberry Street, Toronto, ...

  3 guests




# Searching for a city...



 Host 



### Results for "Toronto, Ontario, Canada"


Filter By Price: Low to High ▾



**\$26/day**



Picturesque 2 Story House - grea...  
12 Morris Ave, Toronto, ON, CA


  1 guests



**\$41/day**



Bright comfortable room within a ...  
8110 Rockaway Ave, Toronto, ON, ...


  2 guests



**\$124/day**



Clean and fully furnished apartme...  
3210 Scotchmere Dr W, Toronto, O...





  3 guests





**\$158/day**



Cozy, clean, and affordable studio...  
7009 Strawberry Street, Toronto, ...

  3 guests



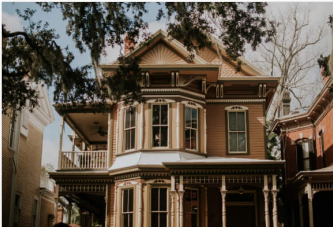
# Searching for an address...



 Host 



### Results for "Toronto, Ontario, Canada"


Filter By Price: Low to High ▾



**\$26/day**



Picturesque 2 Story House - grea...  
12 Morris Ave, Toronto, ON, CA


  1 guests



**\$41/day**



Bright comfortable room within a ...  
8110 Rockaway Ave, Toronto, ON, ...


  2 guests



**\$124/day**



Clean and fully furnished apartme...  
3210 Scotchmere Dr W, Toronto, O...





  3 guests



**\$158/day**

Cozy, clean, and affordable studio...  
7009 Strawberry Street, Toronto, ...

  3 guests



How do we facilitate location-based searching?

```
// A document in the listings collection
{
  _id: ObjectId("5d378db94e84753160e08b30"),
  // ...
  country: "Canada",
  admin: "Ontario",
  city: "Toronto"
  // ...
}
```

```
// Finding a collection of listings  
let cursor = await db.listings.find({});
```

```
// Finding listings in a certain country  
let cursor = await db.listings.find({  
  country: "Canada"  
});
```



```
// Finding listings in a certain administration  
let cursor = await db.listings.find({  
  admin: "Ontario"  
});
```

```
// Finding listings in a certain city  
let cursor = await db.listings.find({  
  city: "Toronto"  
});
```

```
// Finding listings in a specific country, admin, and city  
let cursor = await db.listings.find({  
  country: "Canada",  
  admin: "Ontario",  
  city: "Toronto"  
});
```

How do we find the city, admin, and country from a location search?  
with **Google's Geocoding API!**

```
// Example response from input: "1600 Amphitheatre Parkway, Mountain View, CA"
{
  "results" : [
    {
      "address_components" : [
        {
          "long_name" : "1600",
          "short_name" : "1600",
          "types" : [ "street_number" ]
        },
        {
          "long_name" : "Amphitheatre Parkway",
          "short_name" : "Amphitheatre Pkwy",
          "types" : [ "route" ]
        },
        {
          "long_name" : "Mountain View",
          "short_name" : "Mountain View",
          "types" : [ "locality", "political" ]
        }
      ]
    }
  ]
}
```

## Finding the **country**

- **country** - highest order type returned by the Geocoder

## Finding the **admin**

- **administrative\_area\_level\_1** - first-order entity below country (e.g. states)

## Finding the **city**

- **locality** - indicates an incorporated city or town political entity *OR*
- **postal\_town** - grouping of geographic areas such as locality



We have to find the **country**

```
// pseudo-code of a step in our implementation  
if (city) query.city = city;  
if (admin) query.admin = admin;  
if (country) {  
    query.country = country;  
} else {  
    throw new Error("no country found");  
}
```

# We want to tell the user what's being searched:

The screenshot shows a travel website interface. At the top, there is a search bar with the text "Toronto" and a magnifying glass icon. To the right of the search bar are icons for a home and a host profile. Below the search bar, the text "Results for 'Toronto, Ontario, Canada'" is displayed, with a red arrow pointing to it. Underneath this text is a filter button labeled "Filter By" and a dropdown menu showing "Price: Low to High". The main content area displays a grid of eight property listings, each with a photo, a price per day, a title, an address, and a guest count.

Property Image	Price/day	Title	Address	Guests
	\$26/day	Picturesque 2 Story House - grea...	12 Morris Ave, Toronto, ON, CA	1 guests
	\$41/day	Bright comfortable room within a ...	8110 Rockaway Ave, Toronto, ON, ...	2 guests
	\$124/day	Clean and fully furnished apartme...	3210 Scotchmere Dr W, Toronto, O...	3 guests
	\$158/day	Cozy, clean, and affordable studio...	7009 Strawberry Street, Toronto, ...	3 guests

## Additional resources

- [Address Component Types | Google Geocoding API Docs](#)