

# Assignment 1

## Deadline: 16<sup>th</sup> Oct 2020 (FRI) 11:59pm

You should submit a softcopy of your python scripts to blackboard.

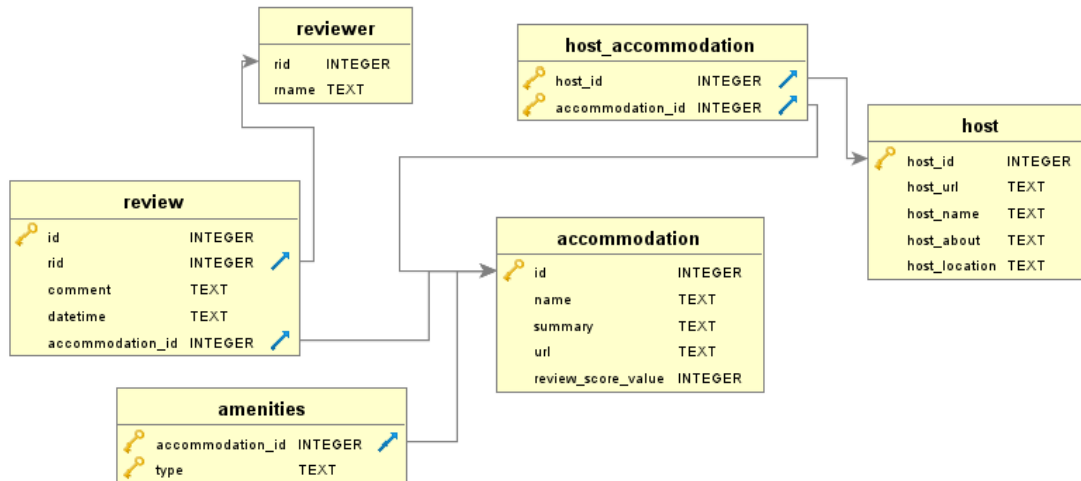
Late submission: within 24 hours (-20%); after 24 hours: no mark.

In this assignment,

- You are only allowed to use the following python package(s): **flask, json, sqlite3** (you may install the libraries with pip if needed).
- You should follow EXACTLY the specification (e.g. table name, attribute name, error messages, JSON format, HTTP response code, file name, input format etc) as stated in this assignment sheet or you may lose marks in the corresponding part or even the whole question.
- For question 2,
  - The python flask program must listen at port 5000 during startup.
  - The API should retrieve and store the bookmarks in SQLite database file `airbnb.db` (stored in the same folder as the python script).
  - You should set the correct content type in the HTTP headers when JSON is returned (`application/json`)
  - Empty list should be returned if there is no reviewer/host/accommodation/review. This request is considered successful (HTTP 200 is returned).

### Question 1

Write a python script `[student_id]_import_airbnb.py`. The script should read a JSON document named **airbnb.json** stored in the same folder as the script (the document format will be similar to the one provided in python exercise 1). The script should create the following tables in a SQLite database file **airbnb.db**.



The script should also insert the data in the JSON file related to accommodation, reviewers, reviews, hosts and their relationship.

Remark:

- The JSON document used for marking will be different from the one provided in the exercise.
- Your script MUST contain a function **start()** and you should launch your program using the following code.

```
if __name__ == '__main__':  
    start()
```

- There should NOT be any statement outside your defined functions beside the **import** statements
- Your script will be imported and launched from the marking script during marking. Your start() function will be called to create the tables and import the data from the JSON document and store in the SQLite database. E.g.

```
import import_airbnb;  
import_airbnb.start()
```

Sample data for **accommodation** table.

id	name	summary	url	review_score_value
1001265	Ocean View Waikiki Marina w/prkg	A short distance from Honolulu's billion dollar mall, and the same distance to Waikiki. Parking incl	https://www.airbnb.com/rooms/1001265	9
1003530	New York City - Upper West Side Apt		https://www.airbnb.com/rooms/1003530	10
1016739	Private Room (2) in Guest House at Coogee Bea...	Room 2 Private room in charming recently renovated federation guest house at Coogee Beach. Prices a	https://www.airbnb.com/rooms/1016739	9
1019168	Cozy Nest, heart of the Plateau	Come spend a few days (or weeks) in our beautiful and cozy apartment situated in the heart of Montre	https://www.airbnb.com/rooms/1019168	10
1022200	Kailua-Kona, Kona Coast II 2b condo		https://www.airbnb.com/rooms/1022200	10
10006546	Ribeira Charming Duplex	Fantastic duplex apartment with three bedrooms, located in the historic area of Porto, Ribeira (Cube	https://www.airbnb.com/rooms/10006546	9
10009999	Horto flat with small garden	One bedroom + sofa-bed in quiet and bucolic neighbourhood right next to the Botanical Garden. Small	https://www.airbnb.com/rooms/10009999	NULL
10021707	Private Room in Bushwick	Here exists a very cozy room for rent in a shared 4-bedroom apartment. It is located one block off o	https://www.airbnb.com/rooms/10021707	8
10030955	Apt Linda Vista Lagoa - Rio	Quarto com vista para a Lagoa Rodrigo de Freitas, cartão postal do Rio de Janeiro. Linda Vista. 1 Q	https://www.airbnb.com/rooms/10030955	NULL
10038496	Copacabana Apartment Posto 6	The Apartment has a living room, toilet, bedroom (suite) and American kitchen. Well located, on the	https://www.airbnb.com/rooms/10038496	10
10047964	Charming Flat in Downtown Moda	Fully furnished 3+1 flat decorated with vintage style. Located at the heart of Moda/Kadiköy, close	https://www.airbnb.com/rooms/10047964	10

Sample data for **amenities** table.

accommodation_id	type
10006546	Refrigerator
10006546	Dishwasher
10006546	Dishes and silverware
10006546	Cooking basics
10006546	Oven
10006546	Stove
10006546	Cleaning before checkout
10006546	Waterfront
10009999	Wifi
10009999	Wheelchair accessible
10009999	Kitchen
10009999	Free parking on premises
10009999	Smoking allowed
10009999	Hot tub
10009999	Buzzer/wireless intercom
10009999	Family/kid friendly
10009999	Washer
10009999	First aid kit
10009999	Essentials
10009999	Hangers
10009999	Hair dryer
10009999	Iron
10009999	Laptop friendly workspace
1001265	TV
1001265	Cable TV
1001265	Wifi
1001265	Air conditioning
1001265	Pool
1001265	Kitchen
1001265	Free parking on premises
1001265	Elevator
1001265	Hot tub

*Remark: in the dataset, there are some repeated amenities. Remove them before inserting into DB*

## Sample data for **host** table.

host_id	host_url	host_name	host_about	host_location
39300	<a href="https://www.airbnb.com/users/show/39300">https://www.airbnb.com/users/show/39300</a>	Lilou	Hello, My name is Laura, I am a young and active professional living in Montreal and working for a	Montreal, Quebec, Canada
454250	<a href="https://www.airbnb.com/users/show/454250">https://www.airbnb.com/users/show/454250</a>	Greta	By now I have lived longer in the city than the country however I feel equally at home in each. I li	New York, New York, United States
634664	<a href="https://www.airbnb.com/users/show/634664">https://www.airbnb.com/users/show/634664</a>	Tracy		New South Wales, Australia
1017772	<a href="https://www.airbnb.com/users/show/1017772">https://www.airbnb.com/users/show/1017772</a>	Lane	Hello. I am a very passionate person with whatever I do. I love adventures and traveling. I love	US
1241644	<a href="https://www.airbnb.com/users/show/1241644">https://www.airbnb.com/users/show/1241644</a>	Zeynep	Z.	Istanbul, Istanbul, Turkey
1282196	<a href="https://www.airbnb.com/users/show/1282196">https://www.airbnb.com/users/show/1282196</a>	Yhaie	I am an artist and traveling is a major part of my life. I love treating visitors the way I like to	Rio de Janeiro, State of Rio de Janeiro, Brazil
2537111	<a href="https://www.airbnb.com/users/show/2537111">https://www.airbnb.com/users/show/2537111</a>	Barbara	My name is Barbara. I'm an administrator and real state manager. I study photography.	Rio de Janeiro, State of Rio de Janeiro, Brazil
2649859	<a href="https://www.airbnb.com/users/show/2649859">https://www.airbnb.com/users/show/2649859</a>	Elisabete	Sou activa, responsável, interessada por leitura, por cinema e por passeio. Sobretudo, sou escritora	Porto, Porto, Portugal
3393610	<a href="https://www.airbnb.com/users/show/3393610">https://www.airbnb.com/users/show/3393610</a>	Daniel	I am a general dentist practicing in Las Vegas for 7 years after practicing in San Jose, Ca for 30 y	Las Vegas, Nevada, United States
5448114	<a href="https://www.airbnb.com/users/show/5448114">https://www.airbnb.com/users/show/5448114</a>	David	I have 30 years of experience in the Waikiki Real Estate Market. We specialize in local sales and pr	Honolulu, Hawaii, United States
5595776	<a href="https://www.airbnb.com/users/show/5595776">https://www.airbnb.com/users/show/5595776</a>	David	Welcoming host who wants you to enjoy the beautiful surrounds at Coogee Beach	Sydney, New South Wales, Australia
6517277	<a href="https://www.airbnb.com/users/show/6517277">https://www.airbnb.com/users/show/6517277</a>	Kristin		Sydney, New South Wales, Australia
7140229	<a href="https://www.airbnb.com/users/show/7140229">https://www.airbnb.com/users/show/7140229</a>	Caro		Montreal, Quebec, Canada
9036477	<a href="https://www.airbnb.com/users/show/9036477">https://www.airbnb.com/users/show/9036477</a>	Margaux		Montreal, Quebec, Canada
11275734	<a href="https://www.airbnb.com/users/show/11275734">https://www.airbnb.com/users/show/11275734</a>	Josh		New York, New York, United States
11435086	<a href="https://www.airbnb.com/users/show/11435086">https://www.airbnb.com/users/show/11435086</a>	Regg	I am a consultant and travel very often. I usually host my apartment when I leave and search for Air	Hong Kong
12057949	<a href="https://www.airbnb.com/users/show/12057949">https://www.airbnb.com/users/show/12057949</a>	Holly	My husband and I have been privileged with the opportunity to make our DREAMS our MEMORIES and	Las Vegas, Nevada, United States
12673423	<a href="https://www.airbnb.com/users/show/12673423">https://www.airbnb.com/users/show/12673423</a>	Gilberto	I am a retired chemist from glass-tubing manufacturing segment that actually is enjoying life throug	Rio, Rio de Janeiro, Brazil
13764143	<a href="https://www.airbnb.com/users/show/13764143">https://www.airbnb.com/users/show/13764143</a>	Ben	Software developer from Sydney, Australia.	New South Wales, Australia

*Remark: If a host (with certain host ID) has more than one accommodation, only the first occurrence of the host data will be stored in the database.*

## Sample data for **host\_accommodation** table.

host_id	accommodation_id
51399391	10006546
1282196	10009999
5448114	1001265
11275734	10021707
51496939	10030955
454250	1003530
51530266	10038496
1241644	10047964
51326285	10051164
51612949	10057447
47554473	10057826
7140229	10059244
51624384	10059872
9036477	10066928
51670240	10069642
51289938	10082307
30393403	10082422

## Sample data for **review** table

id	rid	comment	datetime	accommodation_id
1	51483096	A casa da Ana e do Gonçalo foram o local escolhido para a passagem de ano com um grupo de amigos. Fo	2016-01-03T05:00:00Z	10006546
2	40031996	We are french's students, we traveled some days in Porto, this space was good and we can cooking eas	2016-02-14T05:00:00Z	10006546
3	53859850	We had a speldid time in the old centre of Porto.The apartment is very well situated next to the	2016-04-04T04:00:00Z	10006546
4	3135623	Ana and Goncalo were very helpful and accommodating. When they were not available they put us in tou	2016-04-12T04:00:00Z	10006546
5	13187858	The hosts were very accommodating and agreed to meet with my parents as they were arriving before us	2016-04-25T04:00:00Z	10006546
6	61434690	THE PLACE TO BE, l'appartement est situé au milieu de la Ribeira , tout peut se faire à pieds c'est	2016-05-07T04:00:00Z	10006546
7	3673216	We had a great time in Porto. Ana's & Goncalo's apartment is located right in the heart of the Old T	2016-05-31T04:00:00Z	10006546
8	9172374	Ana and Gonçalo were very welcoming and made a lot of information about Porto's sights available. It	2016-07-29T04:00:00Z	10006546
9	71985274	Super appartement très bien placé, au cœur de l'animation de la Ribeira !Nous avons passé un super	2016-08-23T04:00:00Z	10006546
10	24960918	The apartment was great, it is really nice and cosy, and it is situated at a perfect location. Ana	2016-10-16T04:00:00Z	10006546
11	74079092	Kävimme majoittajan kanssa viestinvaihtoa ennen lomaa ja he antoivat mukavan vaikutelman. He olivatk	2016-10-30T04:00:00Z	10006546
12	40413493	Hemos pasado unos días increíbles en Oporto. Llegamos más tarde de lo que habíamos pensado y Ana & G	2016-11-01T04:00:00Z	10006546
13	8986056	Great location, comfortable place, responsive and friendly host! Highly recommended!	2017-02-19T05:00:00Z	10006546
14	113254568	This house is in the heart of Porto, set back enough to be away from the hustle and bustle but only	2017-04-16T04:00:00Z	10006546

*Remark: id is an auto-increment primary key*

Sample data for **reviewer** table.

rid	rname
51483096	Cátia
40031996	Théo
53859850	Bart
3135623	Alex
13187858	Dan
61434690	Anne
3673216	Chris
9172374	Leslie
71985274	Philippe
24960918	Hanneke
74079092	Kati
40413493	Julia
8986056	Joshua
113254568	Tracey
11263097	Willem
108507776	Fanny
30254816	Bridget
124514204	Oscar

*Remark: If a reviewer (with certain reviewer ID) have more than one reviews, only the first occurrence of the reviewer data will be stored in the database.*

## Question 2

Write a script `[student_id]_airbnb_webapi.py` to implement a RESTful API for retrieving the data from SQLite database `airbnb.db` stored in the same folder as the script in question 1.

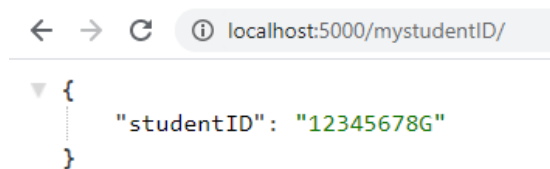
- The API should start a server at port 5000.
- There should NOT be any statement outside your defined functions beside the import statements
- The flask object MUST be named "app".  
**app = Flask(\_\_name\_\_)**
- You should invoke and start your flask server as follows.  
**if \_\_name\_\_ == '\_\_main\_\_':**  
    **app.run()**
- Your script will be imported and launched from the marking script during marking. E.g.

```
import airbnb_webapi  
test_app = airbnb_webapi.app  
test_app.run()
```

a) Show your student ID.

URL	http://localhost:5000/mystudentID/
HTTP Request method	GET
HTTP Response body	Your student ID in JSON format
HTTP Response Code	- 200 OK

Sample output (Suppose your student ID is 121345678G):



## b) Get all reviews

URL	http://localhost:5000/airbnb/reviews/
HTTP Request method	GET
Query String (optional)	<ul style="list-style-type: none"><li>- <b>start</b>: show only the reviews on or after the specified date</li><li>- <b>end</b>: show only the reviews on or before the specified date</li></ul>
HTTP Response body	All reviews in JSON format. The reviews are first sorted by datetime field (in reversed chronological order), and for those with the same datetime, sorted by ascending Reviewer ID.
HTTP Response Code	- 200 OK

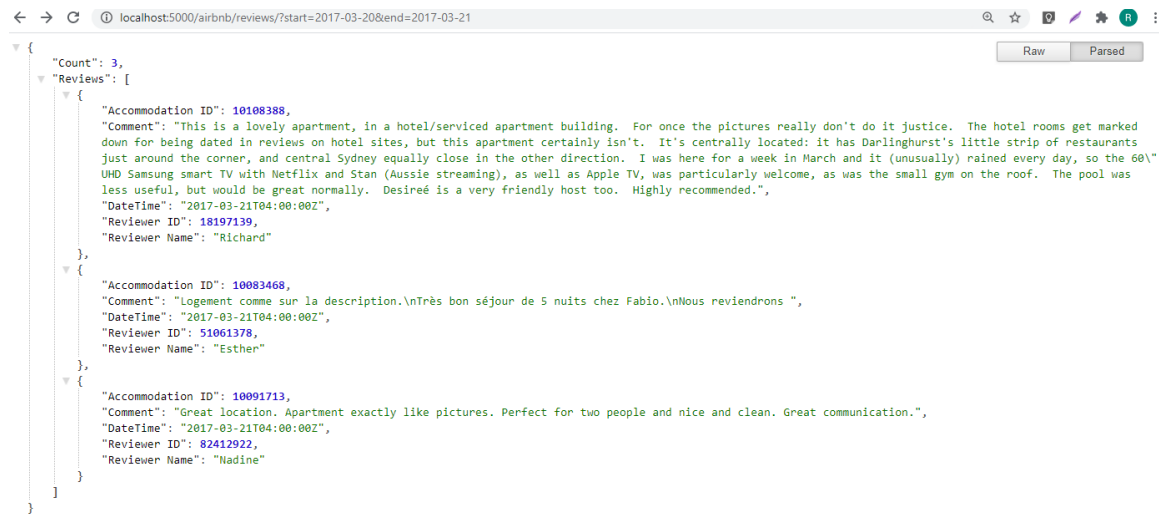
### Sample output format:

```
← → ↻ ⓘ localhost:5000/airbnb/reviews/
{
  "Count": 773,
  "Reviews": [ ... ] // 773 items
}
```

### When the reviews attribute is expanded,

```
← → ↻ ⓘ localhost:5000/airbnb/reviews/
{
  "Count": 773,
  "Reviews": [
    {
      "Accommodation ID": 10108388,
      "Comment": "I highly recommend Desiree's place to anyone visiting Sydney. It's convenient, clean, and very comfortable. Desiree was an outstanding host. She was communicative, helpful, and went above and beyond. I hope to return.",
      "DateTime": "2019-03-06T05:00:00Z",
      "Reviewer ID": 35883709,
      "Reviewer Name": "Joe"
    },
    {
      "Accommodation ID": 10084023,
      "Comment": "真的是一个性价比超高的体验,非常适合一个人单独居住,位置很棒,很方便就在荃湾线上离市中心很近,V1只有一面之缘,不过真的是个很漂亮很nice女孩,房间很小不够还不错啦~",
      "DateTime": "2019-03-01T05:00:00Z",
      "Reviewer ID": 244096303,
      "Reviewer Name": "雲"
    },
    {
      "Accommodation ID": 10084023,
      "Comment": "I stayed 5 nights in this apartment. Location is very close to Prince Edward Station (exit A; Tsuen Wan Line) and Shek Kip Mei Station (exit A; Kwun Tong Line) so it's very convenient. There are supermarkets, bakeries, and local eateries around the area. Laundry facilities are located within the building. There is a lift to the apartment, which is a relief for travelers with heavy luggage. Inside the apartment, there's a kitchenette, which is good for getting hot or boiled water. Wifi connection is strong within apartment. Inside the bathroom, a shower curtain separates the shower and toilet areas. Hence, some people might feel cramped while showering. The room that I booked has windows and is equipped with strong aircon. Overall, I enjoyed my stay in this apartment. This is a very good area to experience local Hong Kong life where one can see elderly folks, mummies with children, blue collar workers, and of course office workers mingling with each other. Though this area in Sham Shui Po is not posh, its down to earth vibes makes this place very real.",
      "DateTime": "2019-02-26T05:00:00Z",
      "Reviewer ID": 97476281,
      "Reviewer Name": "SiewKueen"
    },
    {
      "Accommodation ID": 10108388,
      "Comment": "This city sized apartment was wonderful. Very clean, well stocked with most everything you need. Located around grocery stores, pharmacies, shops, restaurants and bars. Great location for exploring Sydney, buses and trains within 5 minutes, walking distance to circular quay. Street noise was remarkably low in the bedroom. The only shortcoming was the internet connection, very spotty if more than one device was connected. We would definitely stay here upon our return to Darlinghurst.",
      "DateTime": "2019-02-22T05:00:00Z",
      "Reviewer ID": 10933634,
      "Reviewer Name": "Joyce"
    }
  ]
}
```

## Sample output format (with start and end parameters):



```
{
  "Count": 3,
  "Reviews": [
    {
      "Accommodation ID": 10108388,
      "Comment": "This is a lovely apartment, in a hotel/serviced apartment building. For once the pictures really don't do it justice. The hotel rooms get marked down for being dated in reviews on hotel sites, but this apartment certainly isn't. It's centrally located: it has Darlinghurst's little strip of restaurants just around the corner, and central Sydney equally close in the other direction. I was here for a week in March and it (unusually) rained every day, so the 60\" UHD Samsung smart TV with Netflix and Stan (Aussie streaming), as well as Apple TV, was particularly welcome, as was the small gym on the roof. The pool was less useful, but would be great normally. Desir   is a very friendly host too. Highly recommended.",
      "DateTime": "2017-03-21T04:00:00Z",
      "Reviewer ID": 18197139,
      "Reviewer Name": "Richard"
    },
    {
      "Accommodation ID": 10093468,
      "Comment": "Logement comme sur la description.\nTr  s bon s  jour de 5 nuits chez Fabio.\nNous reviendrons ",
      "DateTime": "2017-03-21T04:00:00Z",
      "Reviewer ID": 51061378,
      "Reviewer Name": "Esther"
    },
    {
      "Accommodation ID": 10091713,
      "Comment": "Great location. Apartment exactly like pictures. Perfect for two people and nice and clean. Great communication.",
      "DateTime": "2017-03-21T04:00:00Z",
      "Reviewer ID": 82412922,
      "Reviewer Name": "Nadine"
    }
  ]
}
```



### c) Getting all reviewers

URL	http://localhost:5000/airbnb/reviewers/
HTTP Request method	GET
Query String (optional)	- sort_by_review_count: 'ascending' or 'descending'
HTTP Response body	Number of reviewers and list of reviewers <ul style="list-style-type: none"><li>- if <b>sort_by_review_count</b> parameter is NOT provided, the reviewers will be sorted reviewer ID in ascending order</li><li>- if <b>sort_by_review_count</b> parameter is provided, the reviewers will first be sorted by ascending/descending review count. For reviewers with same number of review count, the reviewers will further be sorted of reviewer ID in ascending order.</li></ul>
HTTP Response Code	- 200 OK

### Sample output format

```
← → ↻ ⓘ localhost:5000/airbnb/reviewers/

▼ {
  "Count": 765,
  "Reviewers": [
    ▼ {
      "Review Count": 1,
      "Reviewer ID": 28725,
      "Reviewer Name": "Lou"
    },
    ▼ {
      "Review Count": 1,
      "Reviewer ID": 43102,
      "Reviewer Name": "Catherine Et Albert"
    },
    ▼ {
      "Review Count": 1,
      "Reviewer ID": 48795,
      "Reviewer Name": "Ellen"
    },
    ▼ {
      "Review Count": 1,
      "Reviewer ID": 149324,
      "Reviewer Name": "Valerie"
    },
    ▼ {
      "Review Count": 1,
      "Reviewer ID": 163918,
```

Sample output format (with sort\_by\_review\_count parameter):

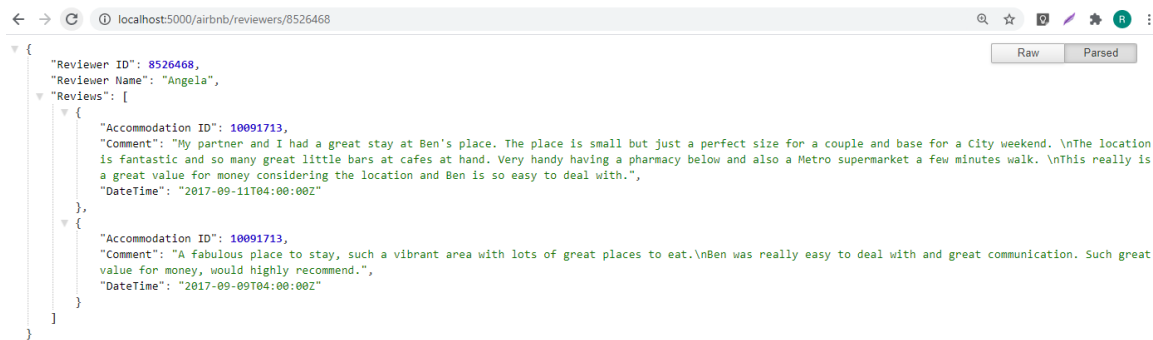
```
localhost:5000/airbnb/reviewers/?sort_by_review_count=descending

{
  "Count": 765,
  "Reviewers": [
    {
      "Review Count": 2,
      "Reviewer ID": 8526468,
      "Reviewer Name": "Angela"
    },
    {
      "Review Count": 2,
      "Reviewer ID": 13818466,
      "Reviewer Name": "Jeremy"
    },
    {
      "Review Count": 2,
      "Reviewer ID": 13933157,
      "Reviewer Name": "Anne"
    },
    {
      "Review Count": 2,
      "Reviewer ID": 16069925,
      "Reviewer Name": "Leah"
    },
    {
      "Review Count": 2,
      "Reviewer ID": 42965012,
      "Reviewer Name": "Gwen"
    },
    {
      "Review Count": 2,
      "Reviewer ID": 48720210,
      "Reviewer Name": "Danielle"
    }
  ]
}
```

c) Getting a reviewer and his/her review

URL	http://localhost:5000/airbnb/reviewers/[reviewer ID]
HTTP Request method	GET
HTTP Response body	The reviewer data and all the reviews posted by the reviewer. If the reviewer has more than one reviews, all the reviews by that reviewer should be included in the <b>reviews</b> list in reversed chronological order of the review posting time.
HTTP Response Code	<ul style="list-style-type: none"><li>- 200 OK</li><li>- 404 Not Found (if the reviewer does not exist)</li></ul>

Sample output format



```
{
  "Reviewer ID": 8526468,
  "Reviewer Name": "Angela",
  "Reviews": [
    {
      "Accommodation ID": 10091713,
      "Comment": "My partner and I had a great stay at Ben's place. The place is small but just a perfect size for a couple and base for a City weekend. \n\nThe location is fantastic and so many great little bars at cafes at hand. Very handy having a pharmacy below and also a Metro supermarket a few minutes walk. \n\nThis really is a great value for money considering the location and Ben is so easy to deal with.",
      "DateTime": "2017-09-11T04:00:00Z"
    },
    {
      "Accommodation ID": 10091713,
      "Comment": "A fabulous place to stay, such a vibrant area with lots of great places to eat.\n\nBen was really easy to deal with and great communication. Such great value for money, would highly recommend.",
      "DateTime": "2017-09-09T04:00:00Z"
    }
  ]
}
```

Sample output format

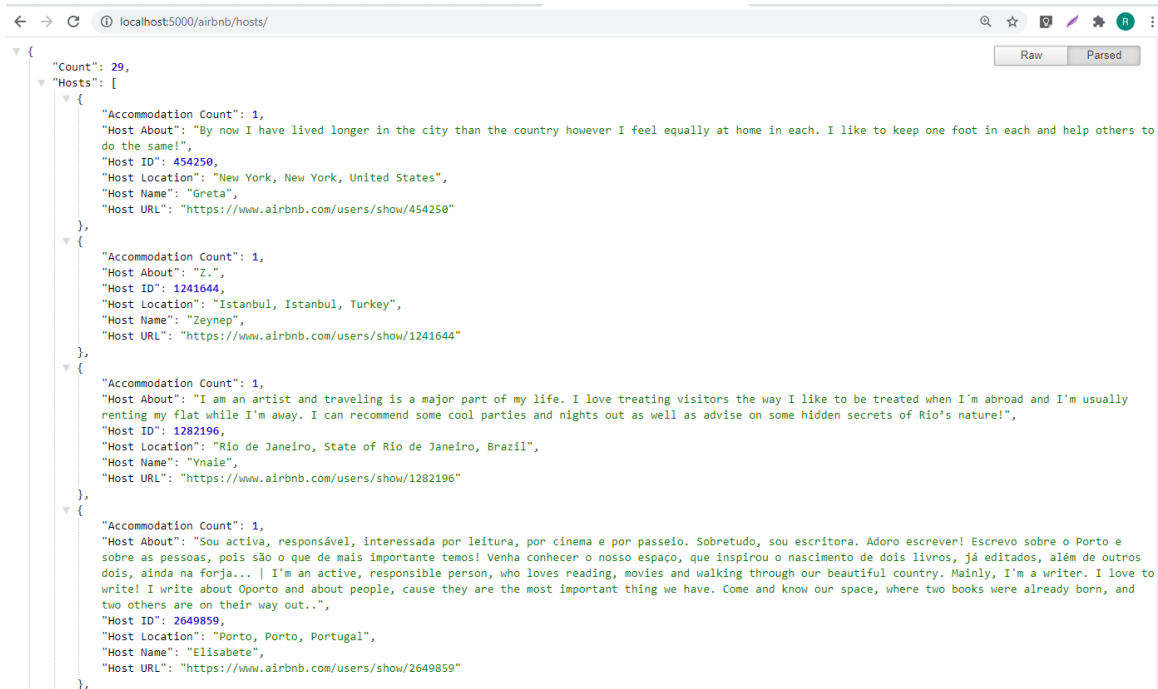


```
{
  "Reasons": [
    {
      "Message": "Reviewer not found"
    }
  ]
}
```

#### d) Getting all hosts

URL	http://localhost:5000/airbnb/hosts/
HTTP Request method	GET
Query String (optional)	<ul style="list-style-type: none"><li>- <code>sort_by_accommodation_count</code>: 'ascending' or 'descending'</li></ul>
HTTP Response body	<p>Count of reviewers and the list of reviewers in JSON format</p> <ul style="list-style-type: none"><li>- if <code>sort_by_accommodation_count</code> parameter is NOT provided, the hosts will be sorted host ID in ascending order</li><li>- if <code>sort_by_accommodation_count</code> parameter is provided, the hosts will first be sorted by accommodation count in ascending/descending order. For hosts with same number of accommodation count, the hosts will further be sorted of host ID in ascending order.</li></ul>
HTTP Response Code	<ul style="list-style-type: none"><li>- 200 OK</li></ul>

#### Sample output format



```
{
  "Count": 29,
  "Hosts": [
    {
      "Accommodation Count": 1,
      "Host About": "By now I have lived longer in the city than the country however I feel equally at home in each. I like to keep one foot in each and help others to do the same!",
      "Host ID": 454250,
      "Host Location": "New York, New York, United States",
      "Host Name": "Greta",
      "Host URL": "https://www.airbnb.com/users/show/454250"
    },
    {
      "Accommodation Count": 1,
      "Host About": "Z.",
      "Host ID": 1241644,
      "Host Location": "Istanbul, Istanbul, Turkey",
      "Host Name": "Zeynep",
      "Host URL": "https://www.airbnb.com/users/show/1241644"
    },
    {
      "Accommodation Count": 1,
      "Host About": "I am an artist and traveling is a major part of my life. I love treating visitors the way I like to be treated when I'm abroad and I'm usually renting my flat while I'm away. I can recommend some cool parties and nights out as well as advise on some hidden secrets of Rio's nature!",
      "Host ID": 1282196,
      "Host Location": "Rio de Janeiro, State of Rio de Janeiro, Brazil",
      "Host Name": "Ynaie",
      "Host URL": "https://www.airbnb.com/users/show/1282196"
    },
    {
      "Accommodation Count": 1,
      "Host About": "Sou activa, respons\u00e1vel, interessada por leitura, por cinema e por passeio. Sobretudo, sou escritora. Adoro escrever! Escrevo sobre o Porto e sobre as pessoas, pois s\u00e3o o que de mais importante temos! Venha conhecer o nosso espa\u00e7o, que inspirou o nascimento de dois livros, j\u00e1 editados, al\u00e9m de outros dois, ainda na forja... | I'm an active, responsible person, who loves reading, movies and walking through our beautiful country. Mainly, I'm a writer. I love to write! I write about Oporto and about people, cause they are the most important thing we have. Come and know our space, where two books were already born, and two others are on their way out..",
      "Host ID": 2649859,
      "Host Location": "Porto, Porto, Portugal",
      "Host Name": "Elisabete",
      "Host URL": "https://www.airbnb.com/users/show/2649859"
    }
  ]
}
```

#### d) Getting a host by ID

URL	http://localhost:5000/airbnb/hosts/[host ID]
HTTP Request method	GET
Query String	
HTTP Response body	The host details and the accommodation owned by the host in JSON format. The accommodation should be sorted in ascending accommodation_id.
HTTP Response Code	<ul style="list-style-type: none"><li>- 200 OK</li><li>- 404 Not Found (if the host does not exist)</li></ul>

#### Sample output format

```
localhost:5000/airbnb/hosts/51471538
{
  "Accommodation": [
    {
      "Accommodation ID": 10115921,
      "Accommodation Name": "GOLF ROYAL RESIDENCE TAXİM(1+1):3"
    },
    {
      "Accommodation ID": 10116256,
      "Accommodation Name": "GOLF ROYAL RESIDENCE SUİTES(2+1)-2"
    }
  ],
  "Accommodation Count": 2,
  "Host About": "",
  "Host ID": 51471538,
  "Host Location": "Istanbul, İstanbul, Turkey",
  "Host Name": "Ahmet",
  "Host URL": "https://www.airbnb.com/users/show/51471538"
}
```

#### Sample output format (host not found)

```
localhost:5000/airbnb/hosts/9999
{
  "Reasons": [
    {
      "Message": "Host not found"
    }
  ]
}
```

e) Get all accommodation

URL	http://localhost:5000/airbnb/accommodations/
HTTP Request method	GET
Query String (optional)	<b>min_review_score_value</b> : an integer which provides the minimum review score value for the returned accommodation. <b>amenities</b> : indicates the returned accommodation should contain the specifies the amenities type.
HTTP Response body	All accommodation should be returned by the host in JSON format. The accommodations should be sorted by accommodation ID in ascending order.
HTTP Response Code	- 200 OK

Sample output format

```
localhost:5000/airbnb/accommodations/
{
  "Accommodations": [ ... ], // 30 items
  "Count": 30
}
```

If the “Accommodation” list is expanded,

```
localhost:5000/airbnb/accommodations/
{
  "Accommodations": [
    {
      "Accommodation": {
        "Name": "New York City - Upper West Side Apt",
        "Summary": "",
        "URL": "https://www.airbnb.com/rooms/1003530"
      },
      "Amenities": [
        "Air conditioning",
        "Buzzer/wireless intercom",
        "Dryer",
        "Elevator",
        "Family/kid friendly",
        "Heating",
        "Internet",
        "Kitchen",
        "Washer",
        "Wifi",
        "translation missing: en.hosting_amenity_50"
      ],
      "Host": {
        "About": "By now I have lived longer in the city than the country however I feel equally at home in each. I like to keep one foot in each and help others to do the same!",
        "ID": 454250,
        "Location": "New York, New York, United States",
        "Name": "Greta"
      },
      "ID": 1003530,
      "Review Count": 70,
      "Review Score Value": 10
    },
    {
      "Accommodation": {
        "Name": "Ribeira Charming Duplex",
        "Summary": "Fantastic duplex apartment with three bedrooms, located in the historic area of Porto, Ribeira (Cube) - UNESCO World Heritage Site. Centenary building fully rehabilitated, without losing their original character.",
        "URL": "https://www.airbnb.com/rooms/10006546"
      },
      "Amenities": [

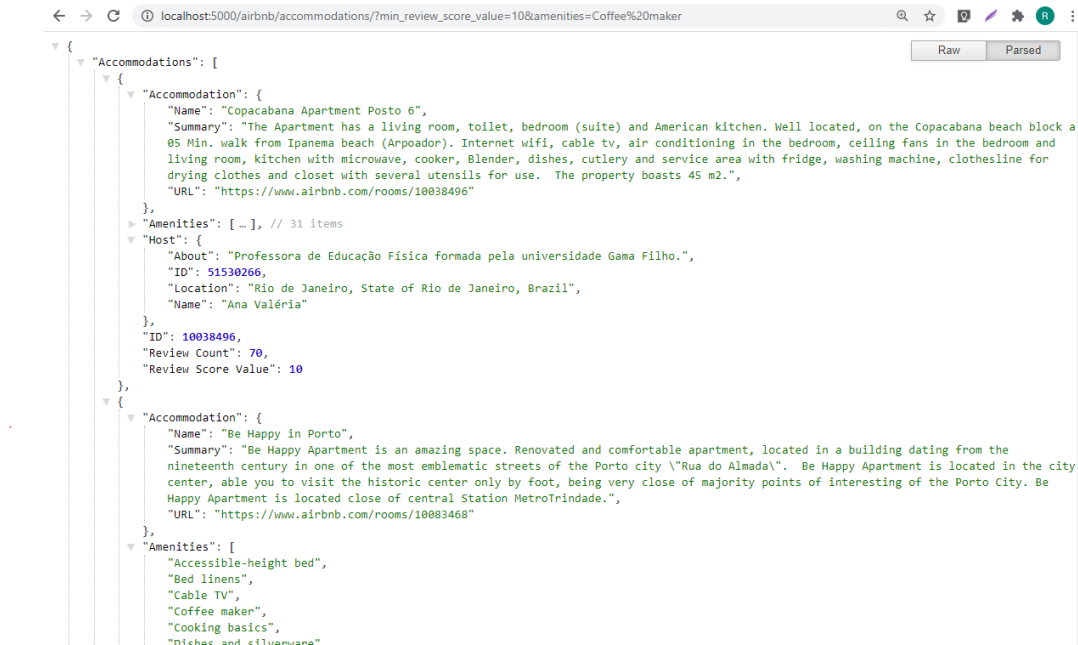
```

## Sample output format (with query string parameters)

Example: Get accommodation with coffee maker and minimum review score value of 10

GET

/airbnb/accomodatin/?min\_review\_score\_value=10&amenities=Coffee%20maker



```
{
  "Accommodations": [
    {
      "Accommodation": {
        "Name": "Copacabana Apartment Posto 6",
        "Summary": "The Apartment has a living room, toilet, bedroom (suite) and American kitchen. Well located, on the Copacabana beach block a 05 Min. walk from Ipanema beach (Arpoador). Internet wifi, cable tv, air conditioning in the bedroom, ceiling fans in the bedroom and living room, kitchen with microwave, cooker, Blender, dishes, cutlery and service area with fridge, washing machine, clothesline for drying clothes and closet with several utensils for use. The property boasts 45 m2.",
        "URL": "https://www.airbnb.com/rooms/10038496"
      },
      "Amenities": [ - ], // 31 items
      "Host": {
        "About": "Professora de Educa\u00e7\u00e3o F\u00edsica formada pela universidade Gama Filho.",
        "ID": 51530266,
        "Location": "Rio de Janeiro, State of Rio de Janeiro, Brazil",
        "Name": "Ana Val\u00e9ria"
      },
      "ID": 10038496,
      "Review Count": 70,
      "Review Score Value": 10
    },
    {
      "Accommodation": {
        "Name": "Be Happy in Porto",
        "Summary": "Be Happy Apartment is an amazing space. Renovated and comfortable apartment, located in a building dating from the nineteenth century in one of the most emblematic streets of the Porto city \"Rua do Almada\". Be Happy Apartment is located in the city center, able you to visit the historic center only by foot, being very close of majority points of interesting of the Porto City. Be Happy Apartment is located close of central Station MetroTrindade.",
        "URL": "https://www.airbnb.com/rooms/10083468"
      },
      "Amenities": [
        "Accessible-height bed",
        "Bed linens",
        "Cable TV",
        "Coffee maker",
        "Cooking basics",
        "Dishes and cutlery"
      ]
    }
  ]
}
```

#### e) Get accommodation by ID

URL	http://localhost:5000/airbnb/accommodations/[Accommodation ID]
HTTP Request method	GET
Query String	
HTTP Response body	Get the accommodation data, the list of review (sorted in reversed chronological order) and the list of amenities (sorted in ascending alphabetical order) for the accommodation
HTTP Response Code	<ul style="list-style-type: none"><li>- 200 OK</li><li>- 404 Not Found (if the accommodation does not exist)</li></ul>

#### Sample output format

```
← → ↻ localhost:5000/airbnb/accommodations/10059872
{
  "Accommodation ID": "10059872",
  "Accommodation Name": "Soho Cozy, Spacious and Convenient",
  "Amenities": [
    "24-hour check-in",
    "Air conditioning",
    "Doorman",
    "Elevator",
    "Essentials",
    "Family/kid friendly",
    "Heating",
    "Kitchen",
    "Smoking allowed",
    "translation missing: en.hosting_amenity_50"
  ],
  "Review Score Value": 8,
  "Reviews": [
    {
      "Comment": "The host canceled this reservation 8 days before arrival. This is an automated posting.",
      "DateTime": "2018-03-27T04:00:00Z",
      "Review Name": "Christian",
      "Reviewer ID": 111288273
    },
    {
      "Comment": "Giovanni was very helpful and responsive to my questions. This is a great apartment that is very convenient for exploring Hong Kong.",
      "DateTime": "2018-01-01T05:00:00Z",
      "Review Name": "Ross",
      "Reviewer ID": 48436743
    },
    {
      "Comment": "The host canceled this reservation 11 days before arrival. This is an automated posting.",
      "DateTime": "2015-12-19T05:00:00Z",
      "Review Name": "Octavio",
      "Reviewer ID": 5302612
    }
  ],
  "Summary": "Clean, fully furnish, Spacious 1 bedroom flat just off the escalator in Mid Levels. 2 minutes From Soho Bar and Restaurants. Located in a quiet alley 1 minute from Sun Yat Sen",
  "URL": "https://www.airbnb.com/rooms/10059872"
}
```

#### Sample output format (accommodations not existed)

```
← → ↻ localhost:5000/airbnb/accommodations/9999
{
  "Reasons": [
    {
      "Message": "Accommodation not found"
    }
  ]
}
```