

Chuyển file listing.xlsx về định dạng csv với format là utf-8 encoding

id	name	host_id	host_name	neighbourhood	latitude	longitude	room_type	price	minimum_nights	number_of_reviews	last_review	reviews_per_month	calculated_host_listings_count	availability_365	number_of_reviews_ltm	license
2818	Quiet Garden View Room & Super Fast WiFi	3159	Daniel	Oostelijk Havengebied - Indische Buurt	52.36435	4.94358	Private room	59	3	282	21-11-19	2.83	1	33	4	0363 5F3A 5684 6750 D14D
20168	Studio with private bathroom in the centre 1	59484	Alexander	Centrum-Oost	52.36407	4.89393	Private room	106	1	339	27-03-20	3.57	2	0	0	0363 CB83 2C10 0C2A 1E29
27886	Romantic, bright, modern, central location	97647	Flip	Centrum-V	52.38761	4.89188	Private room	135	2	226	20-10-21	2.13	1	22	7	0363 974D 4986 7411 88D8
28871	Comfortable room in the heart of Amsterdam	124245	Edwin	Centrum-V	52.36775	4.89092	Private room	75	2	364	15-10-21	4.62	2	267	28	0363 607B EA74 0BD8 2F6F
29051	Comfortable room in the heart of Amsterdam	124245	Edwin	Centrum-V	52.36584	4.89111	Private room	55	2	509	09-10-21	5.52	2	282	30	0363 607B EA74 0BD8 2F6F
44391	Quiet 2-bed room in the heart of Amsterdam	194779	Jan	Centrum-C	52.37168	4.91471	Entire home/apt	240	3	41	22-09-19	0.61	1	0	2	0363 E76E F06A C1DD 172C
47061	Charming room in the heart of Amsterdam	211696	Ivar	De Baarsje	52.36786	4.87458	Entire home/apt	120	2	184	03-04-19	1.56	1	178	2	0363 1266 8C04 4133 E6AC
49552	Multatuli room in the heart of Amsterdam	225987	Joanna & MP	Centrum-V	52.38028	4.89089	Entire home/apt	157	3	384	31-10-21	3.63	1	0	16	0363 576A D827 5085 6B83
49790	Luxurious room in the heart of Amsterdam	227530	Klaas	De Baarsje	52.36158	4.86101	Entire home/apt	250	3	105	14-05-19	0.83	1	0	2	0363 4574 0059 C89C 0671
50523	B & B de 9	231946	Raymond	Centrum-V	52.36811	4.88262	Private room	118	2	310	21-02-20	2.5	1	332	3	0363 22DC 0E52 B70B 0F88
55621	Fully equipped room in the heart of Amsterdam	262846	Bharati	De Pijp - RI	52.35399	4.89756	Entire home/apt	222	3	32	19-08-18	0.48	1	0	0	0363 CA77 7271 E2DF 1B5E
55709	Bright Loft in the heart of Amsterdam	263233	Jan-Willem	Centrum-C	52.35811	4.897637	Entire home/apt	100	4	61	23-05-21	0.59	1	39	2	0363 E295 7D15 8420 343E
55868	Apartment in the heart of Amsterdam	264178	Cornelle	Zuid	52.35597	4.88512	Entire home/apt	149	4	95	03-01-20	0.88	1	0	0	0363 B5A3 5F63 B032 A320
62015	Charming room in the heart of Amsterdam	301340	Jessica	Oud-Oost	52.36431	4.93122	Entire home/apt	120	2	35	29-04-17	1.01	1	0	5	0363 B090 499C D757 7F4F
70598	Attic room in the heart of Amsterdam	339333	Nadira	Noord-We	52.4129	4.92224	Private room	40	1	107	08-10-19	1.57	1	1	0	0363 C3A3 D38B 4644 BA93
75499	Red Studio in the heart of Amsterdam	400896	Edwin + Karin	De Baarsje	52.36326	4.87738	Entire home/apt	90	4	38	04-01-18	0.52	2	300	5	0363 1726 3072 2F14 A2EA
76459	Yellow Studio in the heart of Amsterdam	400896	Edwin + Karin	De Baarsje	52.36261	4.876526	Private room	90	4	16	13-04-17	0.26	2	0	0	0363 1726 3072 2F14 A2EA
80635	TOP LOCA in the heart of Amsterdam	436145	Riks	Centrum-V	52.37828	4.8944	Private room	82	3	228	17-10-21	1.81	4	0	10	0363 4108 6EC3 C2FF 2493
82482	The Backri in the heart of Amsterdam	186729	Shawna	Centrum-V	52.36968	4.88122	Entire home/apt	112	2	885	30-09-21	7.03	1	245	29	0363 4ADE 41D8 0E67 1563
91535	Private room in the heart of Amsterdam	494281	Michiel	De Pijp - RI	52.35774	4.89647	Private room	115	1	45	02-03-20	0.7	1	54	1	0363 74BA 2074 E0CF 1CB8
97221	Beautiful room in the heart of Amsterdam	195859	Gianni	Slotervaar	52.34801	4.83639	Private room	45	2	201	20-10-21	1.88	1	333	6	0363 BCBA 6311 3268 DCBC

Sau đó bắt đầu import database listing với collection listing

1. Mở file listing.csv và nhập dữ liệu vào collection listing

mongoimport --db collection --collection listing --type csv --headerline --file listing.csv

Import completed.
21 documents imported.

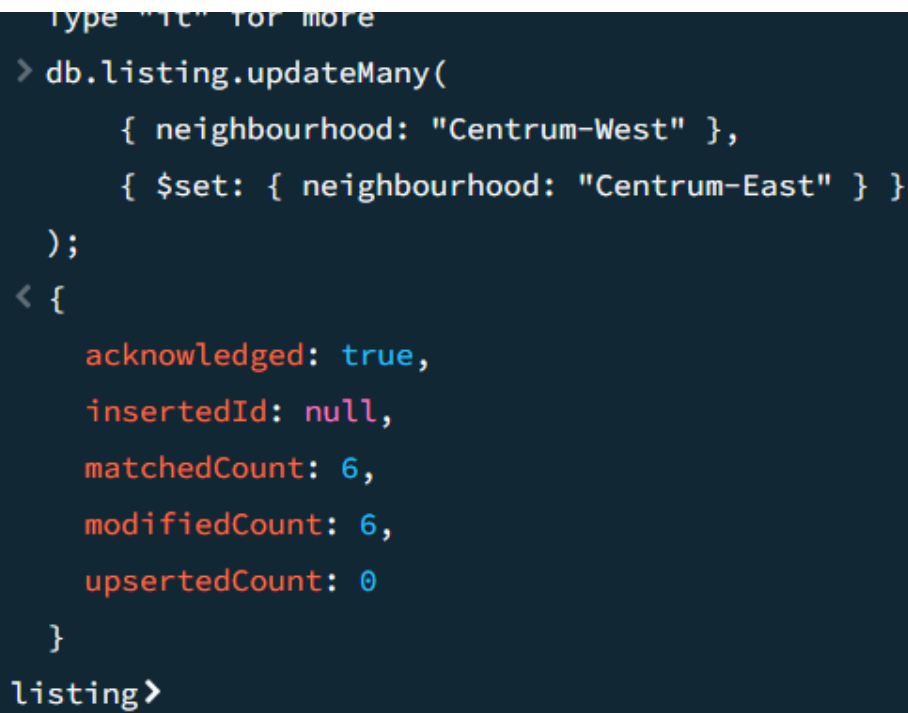
```
{
  "_id": ObjectId("67b039379bf2f4dc84b547d74"),
  "id": 2818,
  "name": "Quiet Garden View Room & Super Fast WiFi",
  "host_id": 3159,
  "host_name": "Daniel",
  "neighbourhood": "Oostelijk Havengebied - Indische Buurt",
  "latitude": 52.36435,
  "longitude": 4.94358,
  "room_type": "Private room",
  "price": 59,
  "minimum_nights": 3,
  "number_of_reviews": 282,
  "last_review": "21-11-19",
  "reviews_per_month": 2.83,
  "calculated_host_listings_count": 1,
  "availability_365": 33,
  "number_of_reviews_ltm": 4,
  "license": "0363 5F3A 5684 6750 D14D"
}
```

```
{
  "_id": ObjectId("67b039379bf2f4dc84b547d75"),
  "id": 20168,
  "name": "Studio with private bathroom in the centre 1",
  "host_id": 59484,
  "host_name": "Alexander",
  "neighbourhood": "Centrum-Oost",
  "latitude": 52.36407,
  "longitude": 4.89393,
  "room_type": "Private room",
  "price": 106
}
```

2. Cập nhật neighbourhood từ "Centrum-West" thành "Centrum-East"

Sử dụng lệnh:

```
db.listing.updateMany(  
  { neighbourhood: "Centrum-West" },  
  { $set: { neighbourhood: "Centrum-East" } }  
);
```



```
type "it" for more  
> db.listing.updateMany(  
  { neighbourhood: "Centrum-West" },  
  { $set: { neighbourhood: "Centrum-East" } }  
);  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 6,  
  modifiedCount: 6,  
  upsertedCount: 0  
}  
listing>
```

3. Cập nhật neighbourhood_group = [2, 4, 6] cho các document có host_name là Edwin

Sử dụng lệnh:

```
db.listing.updateMany(  
  { host_name: "Edwin" },  
  { $set: { neighbourhood_group: [2, 4, 6] } }  
);
```

```
> db.listing.updateMany(  
  { host_name: "Edwin" },  
  { $set: { neighbourhood_group: [2, 4, 6] } }  
);  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 2,  
  modifiedCount: 2,  
  upsertedCount: 0  
}  
listing>
```

4. Cập nhật neighbourhood_group = [1, 3, 5] cho các document có host_name không phải Edwin

Sử dụng lệnh:

```
db.listing.updateMany(  
  { host_name: { $ne: "Edwin" } },  
  { $set: { neighbourhood_group: [1, 3, 5] } }  
);
```

```
> db.listing.updateMany(
  { host_name: { $ne: "Edwin" } },
  { $set: { neighbourhood_group: [1, 3, 5] } }
);
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 19,
  modifiedCount: 19,
  upsertedCount: 0
}
listing>
```

5. Cập nhật neighbourhood từ "Centrum" thành "Central"

Sử dụng lệnh:

```
db.listing.updateMany(
  { neighbourhood: "Centrum" },
  { $set: { neighbourhood: "Central" } }
);
```

```
> db.listing.updateMany(  
  { neighbourhood: "Centrum" },  
  { $set: { neighbourhood: "Central" } }  
);  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 0,  
  modifiedCount: 0,  
  upsertedCount: 0  
}  
listing> |
```

6. Tăng giá thêm 10 cho các document có host_name là Edwin

Sử dụng lệnh:

```
db.listing.updateMany(  
  { host_name: "Edwin" },  
  { $inc: { price: 10 } }  
);
```

```
    }  
    > db.listing.updateMany(  
      { host_name: "Edwin" },  
      { $inc: { price: 10 } }  
    );  
    < {  
      acknowledged: true,  
      insertedId: null,  
      matchedCount: 2,  
      modifiedCount: 2,  
      upsertedCount: 0  
    }  
    listing>
```

7. Nhóm theo room_type và tính tổng price

Sử dụng lệnh:

```
db.listing.aggregate([  
  { $group: { _id: "$room_type", total_price: { $sum: "$price" } } }  
]);
```

```
> db.listing.aggregate([  
  { $group: { _id: "$room_type", total_price: { $sum: "$price" } } }  
]);  
< {  
  _id: 'Private room',  
  total_price: 940  
}  
{  
  _id: 'Entire home/apt',  
  total_price: 1560  
}  
listing>
```

8. Nhóm theo host_name và đếm số lượng neighbourhood

Sử dụng lệnh:

```
db.listing.aggregate([  
  { $group: { _id: "$host_name", count_neighbourhood: { $sum: 1 } } }  
]);
```

```
> db.listing.aggregate([  
  { $group: { _id: "$host_name", count_neighbourhood: { $sum: 1 } } }  
]);  
< {  
  _id: 'Raymond',  
  count_neighbourhood: 1  
}  
{  
  _id: 'Jan-Willem',  
  count_neighbourhood: 1  
}  
{  
  _id: 'Shawna',  
  count_neighbourhood: 1  
}  
{  
  _id: 'Michiel',  
  count_neighbourhood: 1  
}  
{  
  _id: 'Jan',  
  count_neighbourhood: 1  
}  
{  
  _id: 'Gianni',  
  count_neighbourhood: 1  
}  
{  
  _id: 'Jessica',
```

9. Thêm ["nhóm 2", "nhóm 4", "nhóm 6"] vào neighbourhood_group

Sử dụng lệnh:

```
db.listing.updateMany(
```

```
{}  
  
{ $addToSet: { neighbourhood_group: { $each: ["nhóm 2", "nhóm 4", "nhóm 6"] } } }  
  
);  
  
> db.listing.updateMany(  
  {},  
  { $addToSet: { neighbourhood_group: { $each: ["nhóm 2", "nhóm 4", "nhóm 6"] } } }  
);  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 21,  
  modifiedCount: 21,  
  upsertedCount: 0  
}  
listing>
```

10. Lấy những document có room_type là Private room và có number_of_reviews > 500

Sử dụng lệnh:

```
db.listing.find(  
  
  { room_type: "Private room", number_of_reviews: { $gt: 500 } }  
  
);
```

```
>_MONGOSH  
> db.listing.find(  
  { room_type: "Private room", number_of_reviews: { $gt: 500 } }  
);  
< {  
  _id: ObjectId('67b039379bf2fdc84b547d78'),  
  id: 29051,  
  name: 'Comfortable single room',  
  host_id: 124245,  
  host_name: 'Edwin',  
  neighbourhood: 'Centrum-Oost',  
  latitude: 52.36584,  
  longitude: 4.89111,  
  room_type: 'Private room',  
  price: 65,  
  minimum_nights: 2,  
  number_of_reviews: 509,  
  last_review: '09-10-21',  
  reviews_per_month: 5.52,  
  calculated_host_listings_count: 2,  
  availability_365: 282,  
  number_of_reviews_ltm: 30,  
  license: '0363 607B EA74 0BD8 2F6F',  
  neighbourhood_group: [  
    2,  
    4,  
    6,  
    'nhóm 2',  
    'nhóm 4',  
    'nhóm 6'  
  ]  
}
```


11. Lấy những document có room_type là Entire home, 100 <= price <= 180 và minimum_nights =3

Sử dụng lệnh:

```
db.listing.find(  
  {  
    room_type: "Entire home/apt",  
    price: { $gte: 100, $lte: 180 },  
    minimum_nights: 3  
  }  
);
```

```
<  
> db.listing.find(  
  {  
    room_type: "Entire home/apt",  
    price: { $gte: 100, $lte: 180 },  
    minimum_nights: 3  
  }  
);  
< {  
  _id: ObjectId('67b039379bf2fdc84b547d7b'),  
  id: 49552,  
  name: 'Multatuli Luxury Guest Suite in top location',  
  host_id: 225987,  
  host_name: 'Joanna & MP',  
  neighbourhood: 'Centrum-East',  
  latitude: 52.38028,  
  longitude: 4.89089,  
  room_type: 'Entire home/apt',  
  price: 157,  
  minimum_nights: 3,  
  number_of_reviews: 384,  
  last_review: '31-10-21',  
  reviews_per_month: 3.63,  
  calculated_host_listings_count: 1,  
  availability_365: 0,  
  number_of_reviews_ltm: 16,  
  license: '0363 576A D827 5085 6B83',  
  neighbourhood_group: [  
    1,  
    2
```

12. Xóa document có _id là 28871

Sử dụng lệnh:

```
db.listing.deleteOne({ id: 28871 });
```

```
}  
> db.listing.deleteOne({ id: 28871 });  
< {  
  acknowledged: true,  
  deletedCount: 1  
}  
listing> |
```

13. Xóa những document có host_name là "Daniel" hoặc neighbourhood là "Slotervaart"

Sử dụng lệnh:

```
db.listing.deleteMany({  
  $or: [{ host_name: "Daniel" }, { neighbourhood: "Slotervaart" }]  
});
```

```
}  
> db.listing.deleteMany({  
  $or: [{ host_name: "Daniel" }, { neighbourhood: "Slotervaart" }]  
});  
< {  
  acknowledged: true,  
  deletedCount: 4  
}  
listing>
```

14. Xóa các số [2, 4, 6] trong neighbourhood_group

```
db.listing.updateMany(  
  {},  
  { $pull: { neighbourhood_group: { $in: [2, 4, 6] } } }  
);
```

```
> db.listing.updateMany(
  {},
  { $pull: { neighbourhood_group: { $in: [2, 4, 6] } } }
);
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 37,
  modifiedCount: 1,
  upsertedCount: 0
}
listing> |
```

15. Thêm ["nhóm 1", "nhóm 3", "nhóm 5"] vào neighbourhood_group

```
db.listing.updateMany(
  {},
  { $addToSet: { neighbourhood_group: { $each: ["nhóm 1", "nhóm 3", "nhóm 5"] } } }
);
```

```
> db.listing.updateMany(
  {},
  { $addToSet: { neighbourhood_group: { $each: ["nhóm 1", "nhóm 3", "nhóm 5"] } } }
);
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 37,
  modifiedCount: 37,
  upsertedCount: 0
}
listing> |
```

16. Xóa các số [1, 3, 5] trong neighbourhood_group

```
db.listing.updateMany(
  {},
  { $pull: { neighbourhood_group: { $in: [1, 3, 5] } } }
```

);

```
> db.listing.updateMany(  
  {},  
  { $pull: { neighbourhood_group: { $in: [1, 3, 5] } } }  
);  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 37,  
  modifiedCount: 17,  
  upsertedCount: 0  
}  
listing>|
```