Executive Summary

Executive Summary: Airbnb Neighborhood Analysis in New York

Purpose

The purpose of this analysis was to identify popular Airbnb neighborhoods in New York based on guest reviews. We focused on vacation rentals with a minimum stay of 7 days and reviews posted within the last year.

Key Findings

Initially, we examined 31 neighborhoods, but 10 neighborhoods stood out as the most popular, with the highest number of reviews.

The top ten neighborhoods had an average of over 3,319 reviews each.

These neighborhoods are:

Chelsea
East Harlem
The East Village
Harlem
Lower East Side
Nolita
Upper West Side
West Village
Hell's Kitchen
Midtown

Bedroom Size Preferences

While some neighborhoods were popular overall (such as the Lower East Side and Hell's Kitchen), specific neighborhoods had distinct preferences based on bedroom sizes.

Key observations:

1BR Rentals: One-bedroom rentals were the most popular across most neighborhoods, including Chelsea, East Harlem, The East Village, Harlem, Lower East Side, Nolita, Upper West Side, and West Village.

Hell's Kitchen: In Hell's Kitchen, 2BR rentals were the most popular, accounting for 48% of their reviews.

Lower East Side: The Lower East Side dominated the 1BR apartment market, with 87% of their reviews coming from this category.

Midtown: Studios were the hottest choice in Midtown, representing 64% of reviews.

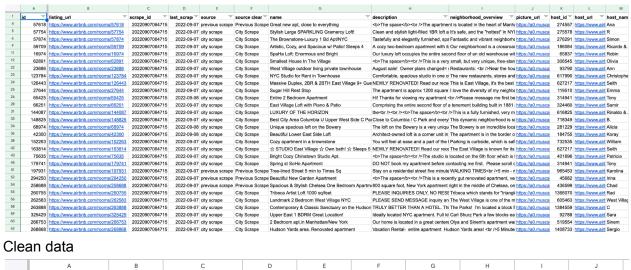
Data Log Sample

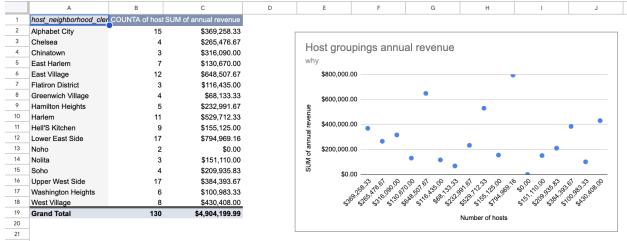
Changes	Description
Step 1	Froze first row to look at descriptions of data
Step 2	Freeze first Column to look at descriptions of data
Step 3	Created a new sheet (Listings data clean)
Step 4	Created a new column for source
Step 5	hid initial column for source
Step 6	Trimmed white space between all columns
Step 7	Created Pivot Table to make general inferences
Step 8	Filled in neighborhood for Row 112 column X
Step 9	Pivot Table 1 shows Harlem having a high number of properties
Step 10	Created filter for all columns
Step 11	Created Filter looking at conditional value of 7 or less for column AR
Step 12	Removed values of 0 in column bc
Step 13	Created a new column AE titled neighborhood clean to fix inconsistencies in data
Step 14	Created Pivot Table with neighborhoods as rows and the price as the value
Step 15	Created a Pivot Table "analysis of rental activity to discover which properties has been rented.
Step 16 Step 17	Created filter in neighborhood clean to remove any blanks Analysis of rental activity shows the sum of reviews from the last 12 months as values in which neighborhoods as rows. This highlights what are the top 10 neighborhoods for vacation rentals.
Step 18	Created a Histogram to display findings
Step 19	Created new column bedroom clean (A0)
Step 20	Used replaced blank values (studios for example) with a value of 0
Step 21	Created new pivot table highlighting which bedroom sizes are most popular
Step 22	Created filter in popularity by bedroom size table removing blanks and neighborhoods that are not in the top ten
Step 23	copy and pasted histogram from rental activity table to popularity table
Step 24	Created Pie chart to view percentage
Step 24	First analysis: 1BR rentals are the most popular in a majority of neighborhoods. - Chelsea, East Harlem, and The East Village, Harlem, Lower East Side, Nolita, Upper West Side, and West Village In Hell's Kitchen, 2BR rentals are the most popular
Step 25	In Midtown, Studios are the most popular.

Data

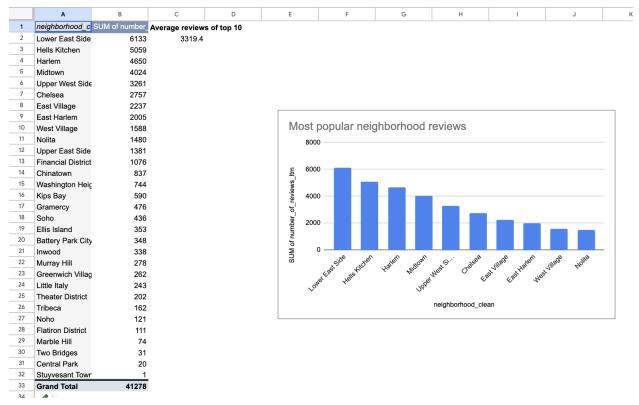
	A	В	С	D	E		F	G	Н	1
1	listing_id	date	day_of_week	available	occupied		price	adjusted_price	minimum_nights	maximum_nights
2	9357	2022-09-07	Wednesday	f		1	\$175.00	\$175.00	30	1125
3	9357	2022-09-08	Thursday	f		1	\$175.00	\$175.00	30	1125
4	9357	2022-09-09	Friday	f		1	\$175.00	\$175.00	30	1125
5	9357	2022-09-10	Saturday	f		1	\$175.00	\$175.00	30	1125
6	9357	2022-09-11	Sunday	f		1	\$175.00	\$175.00	30	1125
7	9357	2022-09-12	Monday	f		1	\$175.00	\$175.00	30	1125
8	9357	2022-09-13	Tuesday	f		1	\$175.00	\$175.00	30	1125
9	9357	2022-09-14	Wednesday	f		1	\$175.00	\$175.00	30	1125
10	9357	2022-09-15	Thursday	f		1	\$175.00	\$175.00	30	1125
11	9357	2022-09-16	Friday	f		1	\$175.00	\$175.00	30	1125
12	9357	2022-09-17	Saturday	f		1	\$175.00	\$175.00	30	1125
13	9357	2022-09-18	Sunday	f		1	\$175.00	\$175.00	30	1125
14	9357	2022-09-19	Monday	f		1	\$175.00	\$175.00	30	1125
15	9357	2022-09-20	Tuesday	f		1	\$175.00	\$175.00	30	1125
16	9357	2022-09-21	Wednesday	f		1	\$175.00	\$175.00	30	1125
17	9357	2022-09-22	Thursday	f		1	\$175.00	\$175.00	30	1125
18	9357	2022-09-23	Friday	f		1	\$175.00	\$175.00	30	1125
19	9357	2022-09-24	Saturday	f		1	\$175.00	\$175.00	30	1125
20	9357	2022-09-25	Sunday	f		1	\$175.00	\$175.00	30	1125
21	9357	2022-09-26	Monday	f		1	\$175.00	\$175.00	30	1125
22	9357	2022-09-27	Tuesday	f		1	\$175.00	\$175.00	30	1125
23	9357	2022-09-28	Wednesday	f		1	\$175.00	\$175.00	30	1125
24	9357	2022-09-29	Thursday	f		1	\$175.00	\$175.00	30	1125
25	9357	2022-09-30	Friday	f		1	\$175.00	\$175.00	30	1125
26	9357	2022-10-01	Saturday	f		1	\$175.00	\$175.00	30	1125
27	9357	2022-10-02		f		1	\$175.00		30	
28		2022-10-03		f		1			30	

AirBnB data

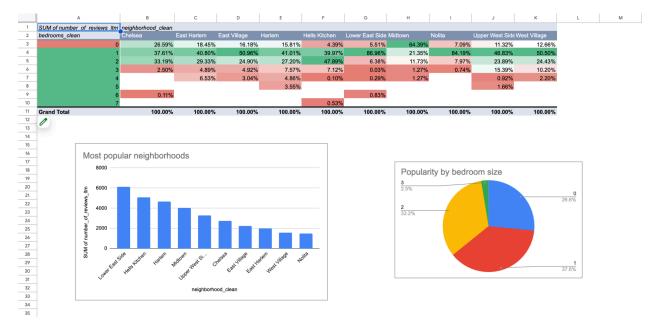




Pivot Tables showing Grouping annual rev



Most Popular Neighborhoods Reviews



Popularity by bedroom size

	Α	В	С	D
		bedrooms_clean	Values	
		0		
neig	ghborhood_clean	AVERAGE of price	AVERAGE of annual revenue	AVERAGE of occupancy rate
Mid	ltown	\$251.38	78352.84925	0.863130
Gra	and Total	\$251.38	78352.84925	0.863130
5				
7				
В		bedrooms_clean	Values	
•		1		
o neig	ghborhood_clean	AVERAGE of occupancy rate	AVERAGE of annual revenue	AVERAGE of price
Low	ver East Side	63.68%	\$ 67,248.81	\$300.88
2				
3		bedrooms_clean	Values	
4		2		
5 nei g	ghborhood_clean	AVERAGE of annual revenue	AVERAGE of occupancy rate	AVERAGE of price
6 Hel	ls Kitchen	103233.845	0.920651	\$307.63
7				

Top 3 apartment data

	Α	В	С	D
1		bedrooms_clean	Values	
2		0		
3	neighborhood_clean	AVERAGE of occupancy rate	AVERAGE of annual revenue	AVERAGE of price
4	Midtown	86.31%	\$78,352.85	\$251.38
5	1			
6				

Midtown data

	Α	В		С	D
1		bedrooms_clean		Values	
2		1			
3	neighborhood_clean	AVERAGE of occupancy rate		AVERAGE of annual revenue	AVERAGE of price
4	Lower East Side		63.68%	\$ 67,248.81	\$300.88
_					

LES data

	A	В	С	D
1		bedrooms_clean	Values	
2		2		
3	neighborhood_clean	AVERAGE of occupancy rate	AVERAGE of annual revenue	AVERAGE of price
4	Hells Kitchen	92.07%	\$ 103,233.85	\$307.63
5				

Hells Kitchen data

	Α	В
1	neighborhood_clean	AVERAGE of price
2	West Village	\$370.56
3	Washington Heights	\$210.74
4	Upper West Side	\$263.24
5	Upper East Side	\$414.52
6	Two Bridges	\$341.00
7	Tribeca	\$660.33
8	Theater District	\$411.75
9	Stuyvesant Town	\$241.00
10	Soho	\$485.23
11	Nolita	\$368.06
12	Noho	\$369.60
13	Murray Hill	\$336.14
14	Midtown	\$397.31
15	Marble Hill	\$276.50
16	Lower East Side	\$344.77
17	Little Italy	\$278.00
18	Kips Bay	\$416.53
19	Inwood	\$163.25
20	Hells Kitchen	\$343.65
21	Harlem	\$245.02
22	Greenwich Village	\$430.00
23	Gramercy	\$326.50
24	Flatiron District	\$352.20
25	Financial District	\$434.56
26	Ellis Island	\$155.00
27	East Village	\$309.57
28	East Harlem	\$364.29
29	Chinatown	\$338.38
30	Chelsea	\$397.72
31	Central Park	\$370.00
32	Battery Park City	\$339.67
33		\$244.34

Average price per neighborhood

	A	В	С
1	listing_id	AVERAGE of occupied	
2	953314	0.00%	
3	993575	0.00%	
4	1056445	0.00%	
5	5525510	0.00%	
6	6559926	0.00%	
7	7310835	0.00%	
8	7630422	0.00%	
9	12325045	0.00%	
10	13373898	0.00%	
11	15528972	0.00%	
12	16758426	0.00%	
13	17662555	0.00%	
14	21427176	0.00%	
15	23369991	0.00%	
16	25521700	0.00%	
17	27437145	0.00%	
18	32137481	0.00%	
19	34059931	0.00%	
20	34659944	0.00%	
21	39312932	0.00%	
22	44799007	0.00%	
23	45414303	0.00%	
24	45914463	0.00%	
25	46472388	0.00%	
26	46787572	0.00%	
27	48121041	0.00%	
28	48861059	0.00%	
29	50444487	0.00%	
30	50912283	0.00%	
31	51228351	0.00%	
32	52568963	0.00%	
33	53346294	0.00%	
34	5730746563553	0.00%	
35	6073837986954	0.00%	
36	6339354366189	0.00%	
37	6671861547958	0.00%	
38	6674940014841	0.00%	
39	7065974609418	0.00%	
40	664047	3.33%	

Sample of Calendar Values

	A	В	С	D
1	Data Dictionary for Listings			
2	Field	Туре	Calculated	Description
3	id	integer		Airbnb's unique identifier for the listing
4	listing_url	text	у	
5	scrape_id	bigint	у	Inside Airbnb "Scrape" this was part of
6	last_scraped	datetime	у	UTC. The date and time this listing was "scraped".
7	source	text		One of "neighbourhood search" or "previous scrape". "neighbourhood search"
8	name	text		Name of the listing
9	description	text		Detailed description of the listing
10	neighborhood_overview	text		Host's description of the neighbourhood
11	picture_url	text		URL to the Airbnb hosted regular sized image for the listing
12	host_id	integer		Airbnb's unique identifier for the host/user
13	host_url	text	у	The Airbnb page for the host
14	host_name	text		Name of the host. Usually just the first name(s).
15	host_since	date		The date the host/user was created. For hosts that are Airbnb guests this could be
16	host_location	text		The host's self reported location
17	host_about	text		Description about the host
18	host_response_time			
19	host_response_rate			
20	host_acceptance_rate			That rate at which a host accepts booking requests.
21	host_is_superhost	boolean [t=true; f=false]		
22	host_thumbnail_url	text		
23	host_picture_url	text		
24	host_neighborhood	text		
25	host_listings_count	text		The number of listings the host has (per Airbnb calculations)
26	host_total_listings_count	text		The number of listings the host has (per Airbnb calculations)
27	host_verifications			
28	host_has_profile_pic	boolean [t=true; f=false]		
29	host_identity_verified	boolean [t=true; f=false]		
30	neighborhood	text	у	The neighbourhood as geocoded using the latitude and longitude against
31	neighbourhood_group	text	у	The neighbourhood group as geocoded using the latitude and longitude against
32	latitude	numeric		Uses the World Geodetic System (WGS84) projection for latitude and longitude.
33	longitude	numeric		Uses the World Geodetic System (WGS84) projection for latitude and longitude.
34	property_type	text		Self selected property type. Hotels and Bed and Breakfasts are described as such b
35	room_type	text		All homes are grouped into the following three room types:
36	accommodates	integer		The maximum capacity of the listing
37	bathrooms	numeric		The number of bathrooms in the listing
38	bathrooms text	strina		The number of bathrooms in the listing.

Sample of data dictionary for listings

	A	В	С	D	E	F	G	Н	l l	J	K	L	M
i	d	listing_url	scrape_id	last_scraped	source	name	description	neighborhood_overview	picture_url	host_id	host_url	host_name	host_since
2	82638	https://www.airbnb.com/rooms/82638	20220907064715	2022-09-07	city scrape	Charming Artist's Flat, East Village	The space If it's an author	The East Village is the best neig	https://a0.musca	449787	https://www.air	t Sarah	2011-03-18
3	9357	https://www.airbnb.com/rooms/9357	20220907064715	2022-09-07	previous scrape	Midtown Pied-a-terre	HELLO. PLEASE DO NOT HIT "REQ	Quiet residential block near man	https://a0.musca	30193	https://www.air	Tommi	2009-08-0
4	57618	https://www.airbnb.com/rooms/57618	20220907064715	2022-09-07	previous scrape	Great new apt, close to everything	The space The apartment	nt is located in the heart of Manha	https://a0.musca	274557	https://www.air	t Ana	2010-10-30
5	57754	https://www.airbnb.com/rooms/57754	20220907064715	2022-09-07	city scrape	Stylish Large SPARKLING Gramercy Loft!	Clean and stylish light-filled 1BR loft a	It's safe, and the "hottest" in NYO	https://a0.musca	275578	https://www.air	t R	2010-10-3
5	57874	https://www.airbnb.com/rooms/57874	20220907064715	2022-09-07	city scrape	The Brownstone-Luxury 1 Bd Apt/NYC	Tastefully and elegantly furnished, spa	Fantastic and vibrant neighborho	https://a0.musca	276291	https://www.air	Simon	2010-11-0
7	15341	https://www.airbnb.com/rooms/15341	20220907064715	2022-09-08	city scrape	* Bright, One Bedroom in Doorman Elevator Bldg *	Greetings! Come relax her	This 1-bedroom apartment is con	https://a0.musca	60049	https://www.air	t Ted	2009-12-0
В	59014	https://www.airbnb.com/rooms/59014	20220907064715	2022-09-07	city scrape	Spacious 1BR, Adorable Clean Quiet	IMPORTANT: PLEASE DON'T MAKE	NEIGHBORHOOD: Lower East	https://a0.musca	282927	https://www.air	Drica	2010-11-1
9	59709	https://www.airbnb.com/rooms/59709	20220907064715	2022-09-07	city scrape	Artistic, Cozy, and Spacious w/ Patio! Sleeps 4	A cozy two-bedroom apartment with it	Our neighborhood is a crossroad	https://a0.musca	186084	https://www.air	Ricardo & Ash	2010-07-3
0	60164	https://www.airbnb.com/rooms/60164	20220907064715	2022-09-07	city scrape	Beautiful, elegant 3 bed SOHO loft	An amazing 1500sq ft full 3 bedroom I	Great Neighborhood, right near	https://a0.musca	289653	https://www.air	Harrison	2010-11-1
1	16974	https://www.airbnb.com/rooms/16974	20220907064715	2022-09-07	city scrape	SpaHa Loft: Enormous and Bright	Our luxury loft occupies the entire sec	and floor of an old warehouse wit	https://a0.musca	65837	https://www.air	Robin	2009-12-2
2	60611	https://www.airbnb.com/rooms/60611	20220907064715	2022-09-07	city scrape	SpaHa Studio Monthly Rental	This is the real New York City experier	Our neighborhood is quite safe a	https://a0.musca	292204	https://www.air	Blanca	2010-11-1
3	107895	https://www.airbnb.com/rooms/107895	20220907064715	2022-09-07	city scrape	Riverside Charm with Fire Place	Cozy, sunny and quiet on on charming	historic Upper West Side block.	https://a0.musca	3088389	https://www.air	t Kai	2012-07-2
4	17037	https://www.airbnb.com/rooms/17037	20220907064715	2022-09-07	city scrape	Lovely EV Artist's Home	I am happy to host responsible visitors	The neighborhood is friendly, ac	https://a0.musca	66035	https://www.air	t Anna	2009-12-2
5	60680	https://www.airbnb.com/rooms/60680	20220907064715	2022-09-07	city scrape	Bright, High Ceiling, Spacious & Cozy 1BR - Enjoy	You will have this full 1 bedroom for yo	My neighborhood is a safe, resid	https://a0.musca	292630	https://www.air	Mich	2010-11-2
6	61509	https://www.airbnb.com/rooms/61509	20220907064715	2022-09-07	previous scrape	Quiet, clean midtown apt w. elevato	This apartment is available until July 3	It is located steps away from Gra	https://a0.musca	23619	https://www.air	Anna/Fonzy	2009-06-2
7	62427	https://www.airbnb.com/rooms/62427	20220907064715	2022-09-07	city scrape	Great East Village Apartment Rental	Be in the heart of the best neighborho	od in NYC! The sp	https://a0.musca	303882	https://www.air	t Brie	2010-11-2
8	19159	https://www.airbnb.com/rooms/19159	20220907064715	2022-09-07	city scrape	Spacious luminous apt Upper West NYC	1000sq feet: master bedroom-large st	After walking all day downtown i	https://a0.musca	73051	https://www.air	t Sybilla	2010-01-2
9	62891	https://www.airbnb.com/rooms/62891	20220907064715	2022-09-07	city scrape	Smallest House In The Village	The space This is a very	small, but very unique, free-stan	https://a0.musca	306545	https://www.air	t Olivia	2010-12-0
0	116551	https://www.airbnb.com/rooms/116551	20220907064715	2022-09-07	city scrape	Beautiful Harlem Studio Apartment - private acces	Fully furnished Apartment! . Private	, Safe, Clean. Wi-Fi, Laundry, C	https://a0.musca	497672	https://www.air	Cynthia And	2011-04-1
1	63693	https://www.airbnb.com/rooms/63693	20220907064715	2022-09-07	city scrape	Cottage in the Village	The space This is a 2-sterms.	ory, 2-bedroom house in the East	https://a0.musca	306545	https://www.air	t Olivia	2010-12-0
2	23686	https://www.airbnb.com/rooms/23686	20220907064715	2022-09-07	city scrape	West Village outdoor living private townhouse	August sale! Owner plans changed=	Restaurants: Near the hou	https://a0.musca	93790	https://www.air	t Ann	2010-03-1
3	123784	https://www.airbnb.com/rooms/123784	20220907064715	2022-09-07	city scrape	NYC Studio for Rent in Townhouse	Comfortable, spacious studio in one o	The new restaurants, stores and	https://a0.musca	617990	https://www.air	Christopher	2011-05-2
4	126443	https://www.airbnb.com/rooms/126443	20220907064715			Massive Duplex, 2BR & 2BTH East Village 9+ Gue	NEWLY RENOVATED! Read our rece	This is East Village, it's the best	https://a0.musca	627217	https://www.air	Seith	2011-05-2
5	27644	https://www.airbnb.com/rooms/27644	20220907064715	2022-09-07	city scrape	Sugar Hill Rest Stop	The apartment is approx 1200 square	I love the diversity of my neighbor	https://a0.musca	119510	https://www.air	t Emma	2010-05-0
6	65425	https://www.airbnb.com/rooms/65425	20220907064715			Entire 2 Bedroom Apartment	Hi! Thanks for viewing my apartment.	br />Please message me first be	https://a0.musca	314941	https://www.air	Tony	2010-12-1
7	29683	https://www.airbnb.com/rooms/29683	20220907064715	2022-09-07	city scrape	Stylish Apartment with office space Near SoHo!	Modern 1 bedroom apartment with sty	NoHo is perfectly situated downt	https://a0.musca	125857	https://www.air	t Uli	2010-05-1
8	66251	https://www.airbnb.com/rooms/66251	20220907064715			East Village Loft with Piano & Patio	Comprising the entire second floor of a	tenement building built in 1881	https://a0.musca		https://www.air		2010-12-2
9		https://www.airbnb.com/rooms/140973	20220907064715			East Village Charmer	Added in the most recent renovation is	-			https://www.air		2011-06-1
0		https://www.airbnb.com/rooms/67288	20220907064715			Central Park 1BR sunny condo	Enjoy everything New York has to offe				https://www.air		2010-03-3
11		https://www.airbnb.com/rooms/144087	20220907064715			LUXURY OF THE HORIZON	the the /> /> the space					Rinaldo & Jess	
2		https://www.airbnb.com/rooms/36703	20220907064715			Sunny, clean 1 bdrm in W. Village	 				https://www.air		2010-07-0
3		https://www.airbnb.com/rooms/148825	20220907064715			Best City Area Columbia U Upper West Side C Pa					https://www.air		2011-06-1
4		https://www.airbnb.com/rooms/68974	20220907064715			Unique spacious loft on the Bowery	The loft on the Bowery is a very unique	, ,			https://www.air		2010-11-0
5		https://www.airbnb.com/rooms/69894	20220907064715			Nice renovated apt, prime location!	Come enjoy your stay in New York Cit	•			https://www.air		2011-01-1
6		https://www.airbnb.com/rooms/42300	20220907064715			Beautiful Lower East Side Loft	Architect-owned loft is a corner unit in				https://www.air		2010-07-2
7		https://www.airbnb.com/rooms/71248	20220907064715			Bright and lovely 1-bdrm LES apt w/ balcony	READ BEFORE MAKING BOOKING I				https://www.air	,	2011-01-2
0	71240	https://www.airbiib.com/rooms/71246	20220907004713	2022-09-07		bright and lovely 1-burn LES apt w/ balcony	NEAD BET ONE WAKING BOOKING I		inups.ird0.iiiusca	303034	inups.//www.all	Jennier	2011-01-20

Sample of listings data

	А	В	С	D	E	F	G
1	listing id	date	available	price	adjusted_price	minimum_nights	maximum_nights
2	9357	2022-09-07	f	\$175.00	\$175.00	30	1125
3	9357	2022-09-08	f	\$175.00	\$175.00	30	1125
4	9357	2022-09-09	f	\$175.00	\$175.00	30	1125
5	9357	2022-09-10	f	\$175.00	\$175.00	30	1125
6	9357	2022-09-11	f	\$175.00	\$175.00	30	1125
7	9357	2022-09-12	f	\$175.00	\$175.00	30	1125
8	9357	2022-09-13	f	\$175.00	\$175.00	30	1125
9	9357	2022-09-14	f	\$175.00	\$175.00	30	1125
10	9357	2022-09-15	f	\$175.00	\$175.00	30	1125
11	9357	2022-09-16	f	\$175.00	\$175.00	30	1125
12	9357	2022-09-17	f	\$175.00	\$175.00	30	1125
13	9357	2022-09-18	f	\$175.00	\$175.00	30	1125
14	9357	2022-09-19	f	\$175.00	\$175.00	30	1125
15	9357	2022-09-20	f	\$175.00	\$175.00	30	1125
16	9357	2022-09-21	f	\$175.00	\$175.00	30	1125
17	9357	2022-09-22	f	\$175.00	\$175.00	30	1125
18	9357	2022-09-23	f	\$175.00	\$175.00	30	1125
19	9357	2022-09-24	f	\$175.00	\$175.00	30	1125
20	9357	2022-09-25	f	\$175.00	\$175.00	30	1125
21	9357	2022-09-26	f	\$175.00	\$175.00	30	1125
22	9357	2022-09-27	f	\$175.00	\$175.00	30	1125
23	9357	2022-09-28	f	\$175.00	\$175.00	30	1125
24	9357	2022-09-29	f	\$175.00	\$175.00	30	1125
25	9357	2022-09-30	f	\$175.00	\$175.00	30	1125
26	9357	2022-10-01	f	\$175.00	\$175.00	30	1125
27	9357	2022-10-02	f	\$175.00	\$175.00	30	1125
28	9357	2022-10-03	f	\$175.00	\$175.00	30	1125
29	9357	2022-10-04	f	\$175.00	\$175.00	30	1125
30	9357	2022-10-05	f	\$175.00	\$175.00	30	1125
31	9357	2022-10-06	f	\$175.00	\$175.00	30	1125
32	15341	2022-09-08	f	\$205.00	\$205.00	30	1125
33	15341	2022-09-09	f	\$221.00	\$221.00	30	1125
34	15341	2022-09-10	f	\$216.00	\$216.00	30	1125
35	15341	2022-09-11	f	\$201.00	\$201.00	30	1125
36	15341	2022-09-12	f	\$196.00	\$196.00	30	1125
37	15341	2022-09-13	f	\$198.00	\$198.00	30	1125
38	152/1	2022 00 14	f	മോഗാ ഗഗ	¢202 00	30	1105

Sample of listing_id