Setup

Required libraries/packages: python3, python3-pip, virtualenv, django>=4.0.0,<4.1.0, djangorestframework, djangorestframework-simplejwt, pillow, pyyaml, requests, django-cors-headers

To set up all above environment in your Ubuntu 20.04.5 LTS, run the following command in default WSL location (cannot work on a mounted drive!):

```
source ./startup.sh
```

To run the project:

```
source ./run.sh
```

Description

Apps:

- Accounts
- Properties
- Reservations
- Comments
- Notifications

Models:

- User
- Property
  - Pricetag
- Reservation
- Property Comment
- User Comment
- Notification

Model Breakdown:

User Model:

Fields: `username`, `password1`, `password2`, `first_name`, `last_name`, `email`, `phone_number`, `address_1`, `address_2`, `city`, `zip_postcode`, `state_province`, `country`, `avatar`

Property Model:

Fields: `owner`, `property_name`, `country`, `city`, `detailed_address`, `zip_postcode`, `phone_number`, `email`, `property_type`, `bedrooms`, `washrooms`, `livingrooms`, `place_type`, `guests`, `property_description`, `last_modified` , `wifi`, `tv`, `bath_tub`, `free_parking`, `air_condition`, `pool`, `gym`, `fire_extinguisher`, `status`, `price`, `image1-8`

Pricetag Model:

Fields: `property`, `start_date`, `end_date`, `price`

Reservation Model:

Fields: `reserve_guest`, `reserve_host`, `reserve_property`, `check_in`, `check_out`, `last_modified`, `STATUS_CHOICES(string, choices: 'pending', 'denied', 'approved', 'canceled', ‘terminated’, 'completed', ‘expired’, ‘pending_canceled’)`

Property Comment Model:

Fields: `text`, `property`, `parent_comment`, `user`

User Comment Model:

Fields: `user`, `host`, `text`

Notification Model:

Fields: `type(string, choices: 'NEW', 'deniedHCANCEL', 'APPROVED', 'UCANCEL'`, `user`, `property`

End Point Summary:

`/`: Index welcome page

User Endpoints:

`/accounts/signup/ [get, post]`: Register a new user

`/accounts/login/ [get, post]`: Log in user and get and cache an jwt authentication token (store in cookie)

`/accounts/logout/ [get]`: Log out user and delete authentication token from cookie

`/accounts/profile/view/ [get]`: View current user profile

`/accounts/profile/edit/ [get, post]`: Edit current user profile

`/accounts/changepassword/ [get, post]`: Change user password

Property Endpoints:

`/properties/create/ [get, post]`: For host to create a property, at the same time print all properties of this user

`/properties/<property_id>/edit/ [patch, put]`: For host to edit a property

`/properties/<property_id>/detail/ [get]`: Anyone can view a property detail

`/properties/<property_id>/delete/ [delete]`: For host to delete a property

`/properties/list/ [get]`: For host to see all his/her properties

`/properties/search/ [get]`: For any user to search for available property.

Pricetag Endpoints:

`/properties/<property_id>/price/create/ [post]` For a host to create special rates for certain period

`/properties/<property_id>/price/list/ [get]`: For a host to see all special rates for a certain property

`/properties/price/<price_id>/delete/ [delete]`: For a host to delete special rates

Reservation Endpoints:

`/reservations/property/<property_id>/book/:[post]`For a logged-in user to book a property.

`/reservations/guest/list/:[get]` For a logged-in user to see all his reservations as a guest

`/reservations/host/list/:[get]` For a logged-in user to see all reservations as a host

`/reservations/guest/<reservation_id>/?status=xxx :[patch, get]` For a guest to update status (cancel)

`/reservations/host/<property_id>/?status=xxx :[patch, get]` For a host to update status (approve, deny, terminate)

`/reservations/completed/list/ [get]` A list filter by status = completed

`/reservations/approved/list/ [get]`: A list filter by status = approved

`/reservations/denied/list/ [get]`: A list filter by status = denied

`/reservations/pending/list/ [get]`: A list filter by status = pending

`/reservations/expired/list/ [get]`: A list filter by status = expired

`/reservations/terminated/list/ [get]`: A list filter by status = canceled

`/reservations/canceled/list/ [get]`: A list filter by status = canceled

Comments Endpoints:

`/comments/property/<property_id>/ [get]`: List all comments of a property.

`/comments/property/<property_id>/ [post]`: For a user to add a new comment on a property that he or she just stayed at.

`/comments/property/<property_id>/<comment_id>/ [get]`: To view a property comments.

`/comments/property/<property_id>/<comment_id>/ [post]`: To reply a property comments.

`/comments/user/<user_id>/ [get]`: To view comments on a user

`/comments/user/<user_id>/ [post]`: For host to add a comment on a user

Notifications Endpoints:

`/notifications/ [get]`: List all notifications for a user.

`/notifications/ [post]`: Create a notification for a user.

`/notifications/<notification_id> [get]`: Mark a notification as read.

End Point Special Instructions:

User Endpoints:

Endpoint: `/accounts/login/`

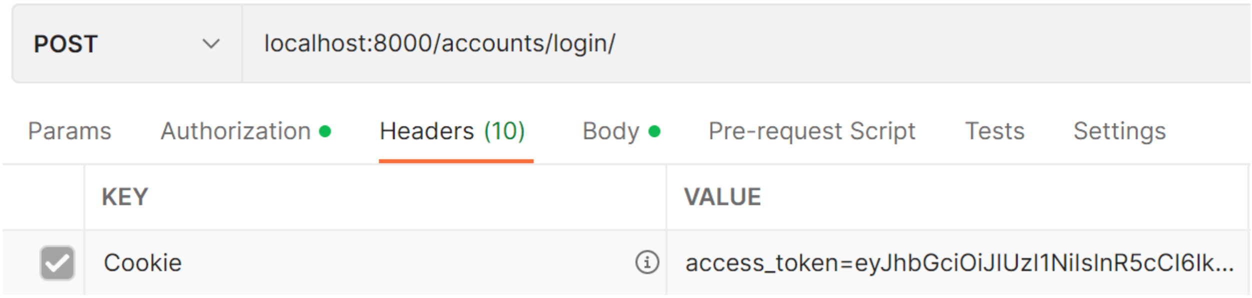
Methods: `GET`, `POST`

Fields/payload: `username`, `password`

Validation errors:

- All fields are required

Description: Login user using jwt token-based authentication. The generated token will be cached into a cookie. When the user logout, this cookie will get deleted.



POST localhost:8000/accounts/login/

	KEY	VALUE
☑	Cookie	access_token=eyJhbGciOiJIUzI1NiIsInR5cCI6Ik...

Please use the **Body** section to enter any form key and values.

Endpoint: `/accounts/profile/edit/`

Methods: `GET`, `POST`

Fields/payload: `username`, `first_name`, `last_name`, `email`, `phone_number`, `address_1`, `address_2`, `city`, `zip_postcode`, `state_province`, `country`, `avatar`

Validation errors:

- `username`, `first_name`, `last_name`, `email`, `phone_number` are required

Description: all fields will be prefilled for the user. A user can only view and edit his/her profile.

Property Endpoints Details:

Endpoint: `/properties/create/`

Methods: `GET`, `POST`

Fields/payload: `owner`, `property_name`, `country`, `city`, `detailed_address`, `zip_postcode`, `phone_number`, `email`, `property_type`, `bedrooms`, `washrooms`, `livingrooms`, `place_type`, `guests`, `property_description`, `last_modified` , `wifi`, `tv`, `bath_tub`, `free_parking`, `air_condition`, `pool`, `gym`, `fire_extinguisher,` `status`, `price`, `image1-8`

Validation errors:

- `property_name`, `country`, `city`, `detailed_address`, `zip_postcode`, `property_type`, `bedrooms`, `washrooms`, `livingrooms`, `guests`, are required

Description: POST for host to create a property. **GET** will list all properties that current user owns.

Endpoint: `/properties/<property_id>/edit/`

Methods: `PATCH`, `PUT`(overwritten to act same as PATCH, but you should use PATCH for any action)

Fields/payload: `property_name`, `country`, `city`, `detailed_address`, `zip_postcode`, `phone_number`, `email`, `property_type`, `bedrooms`, `washrooms`, `livingrooms`, `place_type`, `guests`, `property_description`, `last_modified` , `wifi`, `tv`, `bath_tub`, `free_parking`, `air_condition`, `pool`, `gym`, `fire_extinguisher`, `status`, `price`, `image1-8`

Description: All fields will be prefilled for the host, any new changes will be updated.

Endpoint: `/properties/search/`

Methods: `GET`

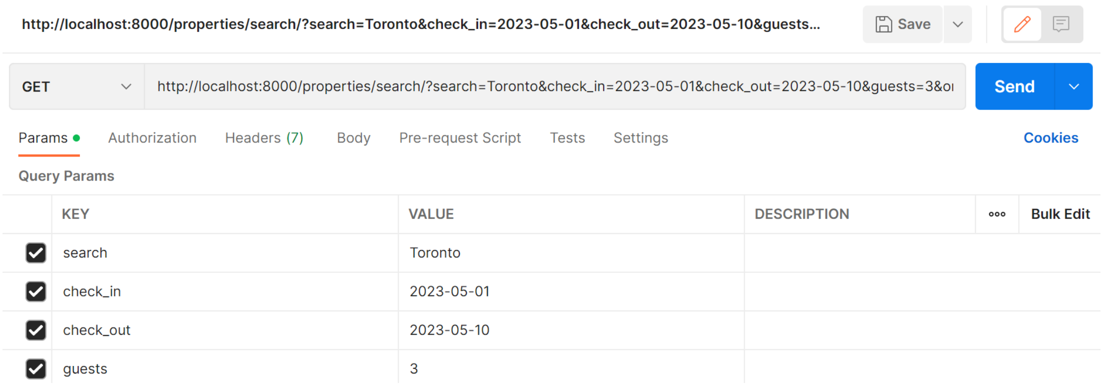
Keywords for filtering: `"search" (for location search), "check_in" (required), "check_out" (required), "min_price", "max_price", "guests", "bedrooms", "washrooms", "swimpool", "wifi", "tv", "gym", "fire_extinguisher", "aircondition", "parking"`

order_by: `"highest_price", "lowest_price", "bedrooms", "washrooms"`

Validation errors:

- `check_in`, `check_out` are required

Description: `data.json` are for testing search features



http://localhost:8000/properties/search/?search=Toronto&check_in=2023-05-01&check_out=2023-05-10&guests...

GET http://localhost:8000/properties/search/?search=Toronto&check_in=2023-05-01&check_out=2023-05-10&guests=3&o

Query Params

	KEY	VALUE	DESCRIPTION
☑	search	Toronto	
☑	check_in	2023-05-01	
☑	check_out	2023-05-10	
☑	guests	3	

You can either enter key and value through the url using ? at the beginning and & for the next key, or using the **Params** section in Postman to enter key value pair

Search location will search any keywords that match the property's city, country, state_province, zip_postcode.

- The database includes 4 cities: Los Angeles, Toronto, New York, London

check_in and check_out date required format of yyyy-mm-dd, it should prompt error messages if the format is incorrect.

`"swimpool", "wifi", "tv", "gym", "fire_extinguisher", "aircondition", "parking"` are boolean variables for filtering amenities.

If a property has a status of false, i.e., the host does not want his/her property to be a public listing, it cannot be searched.

- In data.json, property 1 (owned by john doe (user_id: 2), Beautiful Villa in Los Angeles) will never show up in any search result unless Joe set its status to be true.

Any reservations within the search date range that have a status of approved, will not be present in the search result.

- In data.json, property 3 (owned by john doe, Cozy House in Los Angeles) is reserved (approved) from 2023-08-20 to 2023-08-22 will not show up with search results that overlap this range.

If you want to test out amenities, you can try out London for location, most of the London property has aircondition set to false.

Hosts can set special rates for their preferred dates/durations. The preferred rates are also considered when filtering for min or max price.

- Property 2 (owned by john doe, Luxury Apartment in Los Angeles) has a default rate of $100/night, however, from 2023-04-01 to 2023-04-05, it has a special rate of $150/night.

Pricetag Endpoints:

Endpoint: `/properties/<property_id>/price/create/`

Methods: `POST`

Fields/payload: `start_date`, `end_date`, `price`

Description: For a host to create a special rate for a time period

Reservation Endpoints Details:

Endpoint: `/reservations/property/<property_id>/book/`

Methods: `POST`

Fields/payload:

Validation errors:

- All fields are required

Description: For a user to book a property. Only authenticated users can access this endpoint. Once the booking is confirmed, a reservation object is created.

Comments Endpoints Details:

Endpoint: `/comments/property/<property_id>/`

Methods: `GET`

Description: View all comments and replies on the property

Methods: `POST`

Fields/payload: `text`, `parent_comment`, `user, property`

Description: Most a reply or comment on the property. Only hosts can reply to messages, or users who have reserved the property in the past. Comments that contain parent_comment is a reply, if parent_comment is null then it is an original comment from the user.

Endpoint: `/comments/user/<user_id>/`

Methods: `GET`

Description: View all comments on a particular user

Methods: `POST`

Fields/payload: `text`, `user, host`

Description: Post a comment on the user from host

Endpoint: `/notifications/`

Methods: `GET`

Description: View all the notifications of the current user

Methods: `Post`

Fields/payload: `type`, `user,property`

Description: Post a notification to user regarding the status of the said property, the type is a choice:

```
CHOICES = (
  ("NEW", "Host: New Reservation"),
  ("HCANCLE", "Host: Reservation Canceled"),
  ("APPROVED", "User: Approved Reservation" ),
  ("UCANCLE", "User: Requst Canceled")
)
```

---

data.json Details:

Users:

id/pk	1	2	3	4	5
username	admin	john_doe	jane_smith	jackie_chan	alice_smith
first_name	Admin	John	Jane	Jackie	Alice
last_name	User	Doe	Smith	Chan	Smith
email	admin@example.com	johndoe@example.com	janesmith@example.com	jackiechan@example.com	alicesmith@example.com
password	12345678	12345678	12345678	12345678	12345678
phone_number	123-456-7890	555-123-4567	123-555-6789	999-888-7777	234-223-5566

is_superuser	true	false	false	false	false
is_staff	true	false	false	false	false
is_active	true	true	true	true	true
date_joined	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z
avatar	avatar/avatar.jpg				

Properties:
Total: 22 properties

John Joe’s Properties

id/pk	1	2	3	4	5	6	7
owner	2 john_doe	2 john_doe	2 john_doe	2 john_doe	2 john_doe	2 john_doe	2 john_doe
property_name	Beautiful Villa	Luxury Apartment	Cozy House	Stylish Townhouse	Rustic Cabin	Spacious House	Secluded Cabin
country	United States	United States	United States	United States	United States	United States	United States
city	Los Angeles	Los Angeles	Los Angeles	Los Angeles	Los Angeles	Los Angeles	Los Angeles
detailed_address	1234 Hollywood Blvd	4321 Wilshire Blvd	5678 Sunset Blvd	9876 Melrose Ave	2468 Mulholland Dr	1111 Rodeo Dr	3690 Laurel Canyon Blvd
zip_postcode	90028	90010	90027	90069	90069	90210	91604
phone_number	555-123-4567	555-123-4567	555-123-4567	555-123-4567	555-123-4567	555-123-4567	555-123-4567
email	johndoe@	johndoe@	johndoe@	johndoe@	johndoe@	johndoe@	johndoe@

	example.com	example.com	example.com	example.com	example.com	example.com	example.com
property_type	Apartment	Apartment	House	Townhouse	Cabin	House	Cabin
bedrooms	1	2	6	4	3	6	3
washrooms	1	2	6	3	2	4	3
livingrooms	1	1	2	1	1	2	1
guests	2	4	12	8	6	12	6
property_description	A beautiful and spacious villa in the heart of Los Angeles.	A luxurious and modern apartment in the heart of Los Angeles.	A cozy and charming house located in the heart of Los Angeles.	A stylish and elegant townhouse in the heart of Los Angeles.	A charming and rustic cabin nestled in the hills of Los Angeles.	A spacious and modern house in the prestigious Beverly Hills area of Los Angeles.	A secluded and peaceful cabin located in the scenic hills of Studio City, Los Angeles.
last_modified	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z
swimpool	false	false	true	false	false	true	false
wifi	true	true	true	true	true	true	true
tv	true	true	true	true	true	true	true
gym	false	true	true	true	false	true	false
fire_extinguisher	true	true	true	true	true	true	true
aircondition	true	true	true	true	true	true	true
parking	false	false	true	true	true	true	true
bathtub	false	false	false	false	false	true	false

status	false	true	true	true	true	true	true
price	100	120	300	180	150	320	175
image1	property_image\property_details1.jpg	property_image/place2.jpg	property_image/place3.jpg	property_image/place4.jpg	property_image/place5.jpg	property_image/place6.jpg	property_image/place7.jpg
image2	property_image\property_details2.jpg						

Jane Smith’s Properties

id/pk	8	9	10	11	12	13
owner	3 jane_smith	3 jane_smith	3 jane_smith	3 jane_smith	3 jane_smith	3 jane_smith
property_name	Downtown Condo	Victorian House	Modern Townhouse	Cozy Apartment	Chic Loft	Stylish Flat
country	Canada	Canada	Canada	Canada	United States	United Kingdom
city	Toronto	Toronto	Toronto	Toronto	New York	London
detailed_address	123 Yonge St	456 Queen St E	789 King St W	101 Elm St	123 Broadway	123 Oxford St
zip_postcode	M5C 1W4	M5A 1T7	M5V 1N4	M5G 1H1	10010	W1D 2EU
phone_number	123-555-6789	123-555-6789	123-555-6789	123-555-6789	123-555-6789	123-555-6789
email	janesmith@example.com	janesmith@example.com	janesmith@example.com	janesmith@example.com	janesmith@example.com	janesmith@example.com
property_type	Apartment	House	Townhouse	Apartment	Apartment	Apartment
bedrooms	3	7	4	3	2	3
washrooms	3	4	2	2	2	2

livingrooms	1	2	1	1	1	1
guests	6	14	8	6	4	6
property_description	A luxurious and modern condo in the heart of downtown Toronto.	A charming and historic Victorian house in the trendy neighbourhood of Leslieville, Toronto.	A sleek and contemporary townhouse in the vibrant King West neighbourhood of Toronto.	A cozy and comfortable apartment located in the heart of downtown Toronto.	A stylish and modern loft in the trendy neighbourhood of Flatiron, New York.	A stylish and modern flat located in the heart of London's West End.
last_modified	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z
swimpool	false	true	false	false	false	false
wifi	true	true	true	true	true	true
tv	true	true	true	true	true	true
gym	true	true	true	true	true	true
fire_extinguisher	true	true	true	true	true	true
aircondition	true	true	true	true	true	true
parking	false	true	true	true	false	true
bathtub	false	true	false	true	false	true
status	true	true	true	true	true	true
price	225	400	250	200	150	175
image1	property_image/place8.jpg	property_image/place9.jpg	property_image/place1.jpg	property_image/place2.jpg	property_image/place3.jpg	property_image/place4.jpg
image2						

Jackie Chan’s Properties

id/pk	14	15	16	17	18
owner	4 jackie_chan	4 jackie_chan	4 jackie_chan	4 jackie_chan	4 jackie_chan
property_name	Luxury House	Charming Cottage	Luxury Penthouse	Cozy Brownstone	Victorian Townhouse
country	Canada	Canada	United States	United States	United Kingdom
city	Toronto	Toronto	New York	New York	London
detailed_address	222 Bloor St W	333 High Park Ave	456 Park Ave	789 Brooklyn Ave	456 Camden Rd
zip_postcode	M5S 1T8	M6P 2S8	10022	11213	N7 0SH
phone_number	999-888-7777	999-888-7777	999-888-7777	999-888-7777	999-888-7777
email	jackiechan@example.com	jackiechan@example.com	jackiechan@example.com	jackiechan@example.com	jackiechan@example.com
property_type	House	House	Apartment	House	House
bedrooms	4	5	3	4	8
washrooms	3	3	2	4	7
livingrooms	1	1	1	1	2
guests	8	10	6	8	16
property_description	A luxurious and spacious house in the prestigious Yorkville neighbourhood of Toronto	A charming and cozy cottage located in the beautiful High Park neighbourhood of Toronto.	A luxurious and spacious penthouse located in the upscale Upper East Side neighbourhood of New York.	A charming and cozy brownstone located in the historic neighbourhood of Crown Heights, Brooklyn, New York.	A beautiful and historic Victorian townhouse located in the vibrant neighbourhood of Camden, London.
last_modified	2023-03-09T0	2023-03-09T0	2023-03-09T0	2023-03-09T0	2023-03-09T0

	0:00:00Z	0:00:00Z	0:00:00Z	0:00:00Z	0:00:00Z
swimpool	true	true	false	true	true
wifi	true	true	true	true	true
tv	true	true	true	true	true
gym	true	true	true	true	true
fire_extinguisher	true	true	true	true	true
aircondition	true	true	true	true	false
parking	true	true	true	true	true
bathtub	false	true	false	true	true
status	true	true	true	true	true
price	200	275	150	400	700
image1	property_image/place5.jpg	property_image/place6.jpg	property_image/place7.jpg	property_image/place8.jpg	property_image/place9.jpg
image2					

Alice Smith’s Properties

id/pk	19	20	21	22
owner	5 alice_smith	5 alice_smith	5 alice_smith	5 alice_smith
property_name	Modern Condo	Classic Apartment	Luxury Apartment	Cozy Cottage
country	United States	United States	United Kingdom	United Kingdom
city	New York	New York	London	London
detailed_address	1010 5th Ave	55 Central Park West	789 Chelsea Embankment	101 Highgate West Hill
zip_postcode	10028	10023	SW3	N6

			4LJ	6PB
phone_number	234-223-5566	234-223-5566	234-223-5566	234-223-5566
email	alicesmith@example.com	alicesmith@example.com	alicesmith@example.com	alicesmith@example.com
property_type	Apartment	Apartment	Apartment	House
bedrooms	2	3	2	3
washrooms	2	2	2	2
livingrooms	1	1	1	1
guests	4	6	4	6
property_description	A sleek and contemporary condo in the posh Upper East Side neighbourhood of New York.	A classic and elegant apartment overlooking Central Park, located in the iconic Upper West Side neighbourhood of New York.	A luxurious and spacious apartment overlooking the River Thames, located in the exclusive neighbourhood of Chelsea, London.	A charming and cozy cottage located in the leafy neighbourhood of Highgate, London.
last_modified	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z
swimpool	false	false	false	true
wifi	true	true	true	true
tv	true	true	true	true
gym	true	true	true	true
fire_extinguisher	true	true	true	true
aircondition	true	true	false	false
parking	false	true	false	true
bathtub	false	true	false	false
status	true	true	true	true

price	500	600	450	580
image1	property_image/place2.jpg	property_image/place3.jpg	property_image/place4.jpg	property_image/place5.jpg
image2				

Reservations:

id	1	2	3	4	5	6	7	8	9
reserve_guest	3	4	5	2	2	5	4	3	4
reserve_host	2	2	2	3	4	2	2	2	2
reserve_property	2	2	3	11	14	3	4	5	5
check_in	2023-07-01	2023-07-05	2023-08-20	2023-05-01	2023-05-03	2023-03-23	2023-05-23	2023-02-15	2023-02-15
check_out	2023-07-05	2023-07-08	2023-08-22	2023-05-03	2023-05-05	2023-03-24	2023-06-24	2023-02-17	2023-02-17
status	pending	pending	approved	pending	pending	terminated	denied	completed	canceled
last_modified	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z	2023-03-09T00:00:00Z

Pricetags:

id	1	2	3	4	5	6	7	8
property	2	2	2	3	4	5	11	14
start_date	2023-04-01	2023-06-01	2023-09-01	2023-05-01	2023-06-15	2023-07-01	2023-08-01	2023-09-01

end_date	2023-04-05	2023-06-03	2023-09-30	2023-05-05	2023-06-30	2023-07-31	2023-08-31	2023-09-30
price	150	200	250	120	180	200	150	175