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# Django Notify Documentation

*Release 0.1*

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## 1.1 Introduction

### 1.1.1 About the app

A normal web app with feature of social interaction requires to keep their users updated about recent happenings. For this, a notification system comes handy which stores numerous kinds of notifications and updates the user that a notification is received as soon as an action is performed.

The sole purpose of `django-notify-x` is to add a *facebook-like* notification system functionality and give you the ability to control everything.

**The key features of Django Notify are:**

- Send notifications to multiple user at once.
- AJAX supported views to update, read and delete notifications on the client-side.
- To provide activity-stream like field options.
- To distinguish notifications by their types, so that you can control their behaviours easily.
- To handle client-side javascript, the django way.
- And many more!

### 1.1.2 Disclaimer

This project may seem like a replica of `django-notifications` , yes, this project was highly inspired from `django-notifications`.

But to make it clear, when I started this, too many features were already committed on the project and they used different approach from what I wanted. So instead of forking, doing too many changes and sending a PR, I started my own version of it :).

## 1.2 Getting Started

### 1.2.1 Installation

Install a stable from PyPI using pip:

```
$ pip install django-notify-x
```

Install latest commit from Github:

```
$ pip install -e git+git://github.com/vlk45/django-notify-x.git#egg=notify
```

Add `notify` in `INSTALLED_APPS` of your project settings:

```
INSTALLED_APPS = (  
    ...  
    'notify',  
    ...  
)
```

Include `notify.urls` in your `urls.py` with `notifications` as namespace:

```
urlpatterns = [  
    ...  
    url(r'^notifications/', include('notify.urls', 'notifications')),  
    ...  
)
```

Finally, run migrations:

```
$ python manage.py migrate notify
```

### 1.2.2 Dependencies

`django-notify-x` currently supports Django 1.8 and above. There is no support for previous versions. Both, Python 2.7 as well as Python 3.4 are supported.

It uses `django-jsonfield` package to add support to attach JSON data to notifications using the `extra` field.

## 1.3 Using Django Notify

This page will describe how to use `django-notify-x`.

### 1.3.1 Component details

Just like `django-notifications`, this app also follows the approach described by [ActivityStrea.ms](#). Notifications are generated when an action is performed on concerning a recipient.

The following are the main components:

- **Actor:** The object which performed the activity.
- **Verb:** The activity.

- **Object:** The object on which activity was performed.
- **Target:** The object where activity was performed.

These parameters are nothing but `GenericForeignKey` relation to an arbitrary Django model object.

The parameters **Action Object** and **Target** can be left optional. Even **Actor** in some cases can be said as optional, there can be many cases for this. Therefore, all parameters can have *Anonymous* objects, not objects actually, but texts.

All three parameters, *Actor*, *Action Object* and, *Target* have their respective fields where the object property can be left empty and a simple text value can be used instead.

### 1.3.2 Example notification cases

- **John followed you. XX minutes ago.**
  - <actor> <verb> <created>
- **Jane commented on your post *Django is fun*. XX minutes ago.**
  - <actor> <verb> <target> <created>
- **John replied on your *comment on Django is fun*. XX minutes ago.**
  - <actor> <verb> <object> <target> <created>
- **You received 20 points. Today.**
  - <actor\_text> <verb> <created>
- *and many more...*

### 1.3.3 Sending Notifications

#### Sending notifications to single user

```
from notify.signals import notify

# your example view
def follow_user(request, user):
    user = User.objects.get(username=user)
    ...
    dofollow
    ...

    notify.send(request.user, recipient=user, actor=request.user
                verb='followed you.', nf_type='followed_by_one_user')

    return YourResponse
```

Easy as pie, isn't it?

#### Sending notifications to multiple users:

```
from notify.signals import notify

# your example view
def upload_video(request):
```

```
...
uploadvideo...
...
video = VideoUploader.getupload()
followers = list(request.user.followers())

notify.send(request.user, recipient_list=followers, actor=request.user
            verb='uploaded.', target=video, nf_type='video_upload_from_following')

return YourResponse
```

Just change the recipient to `recipient_list` and send notifications to as many users you want!

**Warning:** `recipient_list` expects supplied object to be a `list()` instance, make sure you convert your `QuerySet` to `list()` before assigning value.

## 1.4 Further configurations

After you've installed the app and made an entry in the `INSTALLED_APPS` of your project settings, there are things that you still need to know about.

If you are planning to handle things over AJAX, make sure you run this command before starting to hack the app:

```
$ python manage.py collectstatic
```

This will copy `notifyX.js` and `notifyX.min.js` to your static root directory.

The `notifyX.js` file handles all the AJAX related actions ranging from marking notifications as read/unread to fetching new notifications and updating the notification box.

Now, include the `notifyX.js` static file in your base template.:

```
{% load staticfiles %}
....
<script src="{% static "notify/notifyX.js" %}"></script>
<!-- OR -->
<script src="{% static "notify/notifyX.min.js" %}"></script>
```

**Note:** The other file, `notifyX.min.js` is a minified version of `notifyX.js`. It is intended work the same as the original file. The advantage of a minified javascript file is that it removes unnecessary things and ultimately reduces the size of the final file with same functionality.

**Warning:** Make sure you include `notifyX.js` after you've included latest JQuery javascript file. This script uses JQuery to handle AJAX calls and DOM manipulation. It will break if JQuery is not included before it.

### 1.4.1 Project level settings

All the settings defined below will mostly be used when making AJAX calls and DOM manipulations. These settings will be supplied to `include_notify_js_variables` template tag for JS inclusion.



The settings will be represented in the following way

**PROJECT\_LEVEL\_SETTING (default value)** Description for the project level setting.

**NOTIFY\_SOFT\_DELETE (True)** Whether to do delete notifications softly or not.

**NOTIFY\_NF\_LIST\_CLASS\_SELECTOR (.notifications)** Class selector of element containing list of notification elements.

**NOTIFY\_SINGLE\_NF\_CLASS\_SELECTOR (notifications)** Class selector of individual notification elements.

**NOTIFY\_NF\_BOX\_CLASS\_SELECTOR (.notification-box-list)** Class selector of element containing list of notification elements on *notification box*.

**NOTIFY\_SINGLE\_NF\_BOX\_CLASS\_SELECTOR (.notification-box)** Class selector of individual *notification-box* elements.

**NOTIFY\_MARK\_NF\_CLASS\_SELECTOR (.mark-notification)** Class selector for sub-element of notification element performing *mark* as read/unread action. This will be same for both, full page notifications as well as notification box on the navbar.

**NOTIFY\_MARK\_ALL\_NF\_CLASS\_SELECTOR (.mark-all-notifications)** Class selector for sub-element of notification element performing *mark\_all* as read/unread action.

**NOTIFY\_READ\_NOTIFICATION\_CSS (read)** Class of parent notification element when its status is read.

**NOTIFY\_UNREAD\_NOTIFICATION\_CSS (unread)** Class of parent notification element when its status is unread.

**NOTIFY\_DELETE\_NF\_CLASS\_SELECTOR (.delete-notification)** Class selector for sub-element of notification element performing *delete* action.

**NOTIFY\_UPDATE\_TIME\_INTERVAL (5000)** Time interval (in ms) between ajax calls for notification update.

## 1.5 Understanding Notification Attributes

This is a detailed walk through the functioning of `django-notify-x`. This page will describe the use of Notification Model fields and the `notify` signal, so that you can make the most out of it.

### 1.5.1 Important fields in Notification Model

#### Anonymous values:

- Each activity stream component can carry an anonymous value instead of being a model object.
- You can also specify the its URL as text. By default `get_absolute_url()` method is called to assign a URL to activity stream participator.
- **At Django Model level inserts, the field name of these components are as follows:**
  - `actor_content_object`: For directly populating the model using a model instance.
  - `actor_content_type`: For manually assigning the object's `content_type`.
  - `actor_object_id`: ID of the object for manual assignment.
  - `actor_text`: Name of the actor in plain text (useful when using anonymous actor).
  - `actor_url_text`: URL of the actor in plain text (useful when using anonymous actor).
  - ... the same goes for **target and obj** components of activity stream.

### Notification types:

- Each notification is different, they must be formatted differently during HTML rendering. For this, each notification gets to carry its own notification type.
- This notification type will be used to search the special template for the notification located at `notifications/includes/NF_TYPE.html` of your template directory.
- The main reason to add this field is to save you from the pain of writing `if...elif...else` blocks in your template file just for handling how notifications will get rendered.
- With this, you can just save template for an individual notification type and call the *template-tag* to render all notifications for you without writing a single `if...elif...else` block.
- You'll just need to do a `{% render_notifications using NOTIFICATION_OBJ %}` and you'll get your notifications rendered.
- By default, every `nf_type` is set to default.

### The shortcut properties for activity components:

- Every activity component has its property which returns either the `__str__` value of `ACTIVITYCOMPONENT_content_object` or the value of its anonymous text or None.
  - For example:

```
notification = Notification.objects.get(pk=1)

# Instead of doing this
if notification.actor_content_object:
    actor_value = notification.actor_content_object
elif notification.actor_text:
    actor_value = notification.actor_text
else:
    actor_value = 'fallback text'

# you can do this
notification.actor
```

- The same way, every activity component is supposed contain a URL which is either the model object's `get_absolute_url()` value or `ACTIVITYCOMPONENT_url_text` or None or a fallback value.
  - You guessed it right!, There's a property for this thing too.
  - You can just access the activity component's URL like `notification.actor_url`.
  - `notification.actor_url` will either return the URL using the above methods or just return a `"#"` as a fallback URL.
- Not a property, but a model method...
  - `.as_json()`, converts the values of the model instance to JSON or python dictionary, it is used when sending live notification updates as JSON format.

### Other fields:

#### verb

Carries the verb of the notification performed.

## description

Carries *optional* text description of the notification.

## extra

JsonField, allows arbitrary values in JSON format, so that you can store other useful information about a specific notification.

## deleted

Useful when you want to *soft delete* notifications instead of directly deleting them from database. The nature of this attribute can be controlled by a setting `NOTIFY_SOFT_DELETE = False`. This will delete notifications directly from database. By default, notifications are soft-deleted.

## 1.5.2 Important options in notify method

The keyword arguments when sending a `notify` signal are quite different than that of the Notification Model. Some fields are skipped and some are renamed for convenience. The below is the overview of the significant changes you need to know.

### The actor, target and obj components

The `actor` keyword argument acts as `actor_content_object` at Django model level insert. There is not explicit *kwarg* for `actor_content_type` and `actor_object_id`. Same goes for `target` and `obj`.

### The recipient and recipient\_list

The `notify` signal takes these two as conditionally optional keyword arguments. They can neither be supplied together nor be empty. The `recipient` takes a user model instance only, the same case is with the `recipient_list` which takes a `list()` of user model instances.

They're accessible from single signal because it would be highly redundant to create a separate signal with almost identical parameters just for the sake of making things distinguishable.

### The first positional argument

When sending a notification, the first argument stands for the `sender` of the signal. For most cases it will be your `User` model. You can either use a user instance or the model class itself as the first parameter.

## 1.6 Notification and templates

Django's templating system plays a very important role in formatting your notifications without hassles. The templates for `django-notify-x` app are supposed to be stored in `notifications` directory of your default template directory.

As explained in previous chapter, `django-notify-x` uses templates to format different kinds of notifications corresponding to the `nf_type` of the notification.

### 1.6.1 Templates for notification types

If you want to render notifications using the `render_notifications` template tag and want to distinguish notifications by their output locations (for example, *a typical web app has a notification page as well as a notification-box in it's navigation bar.*) you can use templates to store HTML format data for different kind of notifications.

The templates for notifications are stored in `notifications` directory of templates folder.

The tree structure representation of template directory

```
templates
|-- base.html
`-- notifications
    |-- all.html
    |-- base.html
    `-- includes
        |-- default_box.html
        |-- default.html
        |-- delete_success.js
        |-- js_variables.html
        |-- mark_all_success.js
        |-- mark_success.js
        |-- navbar.html
        `-- update_success.js
```

The `includes` sub-directory is for storing HTML output template for individual notifications and also Javascript files corresponding to the functions in the `notifyX.js` file.

#### For rendering notifications

The `all.html` and `base.html` under `notifications` directory are used when rendering the *all notifications page*. You can override both of them by creating them on your default template directory under `notifications` sub-directory.

#### For formatting notification

HTML output format for individual notifications are supposed to be stored in `notifications/includes/` with the name of their `nf_type` ending with a `.html`.

---

**Note:** If you're going to use live ajax notifications and you have a notification box to display instant notifications on your project, you might want to create one more file which starts with the corresponding `nf_type` and ends with `_box.html` in order to use different formatting.

---

For example, if you have notifications with `nf_type` set to `followed_user`, the name of the custom template files will be:

```
followed_user.html
followed_user_box.html
```

Put those files in `notifications/includes/` directory of your template directory.

For full page notifications, we'll try to find a template in the following order:

```
followed_user.html
default.html
```

For live ajax notifications, we'll try to find a template in the following order:

```
followed_user_box.html
default_box.html
followed_user.html
default.html
```

#### Contents of 'notifications/includes/followed\_user.html':

```
<!-- this format is not compulsory, you can have HTML that suits your project -->
<li data-nf-id="{{ notification.id }}"
class="notification list-group-item {{ notification.read|yesno:'read,unread' }}">
  <a href="{{ notification.actor_url }}">{{ notification.actor }}</a> {{
↳notification.verb }}
  <span class="timesince">{{ notification.created|timesince }} ago</span>

  <button data-id="{{ notification.id }}" class="mark-notification"
    data-mark-action="{{ notification.read|yesno:'unread,read' }}"
    data-toggle-text="Mark as {{ notification.read|yesno:_'read,unread' }}">

    Mark as {{ notification.read|yesno:'unread,read' }}

  </button>
  <button class="delete-notification" data-id="{{ notification.id }}">X</button>
</li>
```

#### Contents of 'notifications/includes/followed\_user\_box.html':

```
<!-- this format is not compulsory, you can have HTML that suits your project -->
<li data-nf-id="{{ notification.id }}"
class="notification list-group-item {{ notification.read|yesno:'read,unread' }}">
  <a href="{{ notification.actor_url }}">{{ notification.actor }}</a> {{
↳notification.verb }}
  <span class="timesince">{{ notification.created|timesince }} ago</span>

  <button data-id="{{ notification.id }}" class="mark-notification"
    data-mark-action="{{ notification.read|yesno:'unread,read' }}"
    data-toggle-text="Mark as {{ notification.read|yesno:_'read,unread' }}">

    Mark as {{ notification.read|yesno:'unread,read' }}

  </button>
  <button class="delete-notification" data-id="{{ notification.id }}">X</button>
</li>
```

**Note:** The contents of the examples above are identical, in this case you might create only the `followed_user.html` file.

### Things to take care when writing notification templates

Other than what we just discussed above, we need to make sure we do the following things correctly in order to make this app work. These things are mostly the html attribute values which will be used by the javascript file in order to perform DOM manipulation/

**data-nf-id** Attribute assigned to the parent element of notification. This will help our javascript to correctly select the parent notification element.

**data-mark-action & data-id** Attribute assigned to an element which will handle the control for marking a notification as read or unread. `data-mark-action` will also be used when marking all notifications as read or unread.

**data-mark-action & data-toggle-text** The element that holds the attribute `data-mark-action` will have its innerHTML text replaced to reflect the toggle behavior. In order to customize the toggled text, you should provide the opposite text into a `data-toggle-text` attribute.

**delete-notification & data-id** Attribute assigned to an element which handles deleting of a notification.

---

**Note:** The above settings are only necessary if you want things happen over AJAX. If you want to control things with POST request, there is absolutely no need of keeping these attributes.

---

### 1.6.2 Notification Template tags

This app comes with two notification tags, one renders notifications for you and the other includes javascript variables and functions relating to the `notifyX.js` file.

#### render\_notifications

As its name reflects, it will render notifications for you. `render_notifications` will take at least one parameter and maximum two parameters.

You can use them to render notifications using a `Notification QuerySet` object, like this:

```
{% load notification_tags %}
{% render_notifications using request.user.notifications.active %}
```

By default, the above tag will render notifications on the notifications page and not on the notification box. So it will use a template corresponding to its `nf_type` with a `.html` suffix nothing more.

To render notifications on a notifications box:

```
{% load notification_tags %}
{% render_notifications using request.user.notifications.active for box %}
```

This tag will look for template name with `_box.html` suffixed when rendering notification contents.

The `request.user.notifications.active` is just used to show an example of notification queryset, you can use any other way to supply a `QuerySet` of your choice.

As each notification has many generic relations (actor, target, object), and the Django's default behavior when evaluating queries is to hit the database once per relation per record, the amount of queries to render many notifications can grow quickly. To handle this case, the `Notification` queryset has a method `prefetch`, that prefetches the relations and reduces the number of queries needed to  $N+Y$ , where  $N$

is the number of notifications on the master queryset, and  $Y$  is the number of distinct models that your notifications refers to.

Use `prefetch` to reduce the number of queries:

```
{% load notification_tags %}
{% render_notifications using request.user.notifications.active.prefetch %}
```

## include\_notify\_js\_variables

This tag uses `notifications/includes/js_variables.html` to include a template populated with JS variables and functions. You can override the values of any JS variables by creating your own version of `js_variables.html` template.

To include JS variables for AJAX notification support, do this:

```
{% load notification_tags %}
{% include_notify_js_variables %}
```

This template inclusion includes four javascript files from the template includes directory, they are:

```
mark_success.js
mark_all_success.js
delete_success.js
update_success.js
```

All of them are nothing but javascript function declarations which are supposed to run when a JQuery AJAX request is successfully completed.

---

**Note:** In the previous versions, it was necessary to add notification check before including the JS variables using the `include_notify_js_variables` template tag. It is no more required. The new update checks for authenticated users and then renders the template if required.

---

## user\_notifications

---

**Note:** The `user_notifications` tag is a shortcut to the `render_notifications` tag. It directly renders the notifications of the logged-in user on the specified target.

---

You can use this tag like this:

```
{% load notification_tags %}
{% user_notifications %}
```

This tag renders active notifications of the user by using something like `request.user.notifications.active()`.

Just like `render_notifications` it also takes rendering target as an optional argument. You can specify rendering target like this:

```
{% load notification_tags %}
{% user_notifications for box %}
```

By default, it'll use 'page' as the rendering target and use full page notification rendering template corresponding to the `nf_type` of the template.

## 1.7 The client-side flow

All the `views` of `django-notify-x` are compatible with both, AJAX and non-AJAX requests. The included javascript file helps you control the result of actions performed by user. Common tasks like making notifications fade out, changing background color when a notification is mark as read/ unread are already handled by default javascript functions.

Of course, you want things to appear differently for your project, for doing so, you can simply write your own version of the javascript functions and save them in the corresponding templates directory of app and the things will get overridden easily.

The contents of default javascript fuction-files may seem to be useless, may be they are. But the files are just to give you idea about how things are supposed to work.

### See also:

You might want to have a look on [Important HTML attributes](#) of a notification templates. They'll play an important role in AJAX an DOM manipulation of notifications.

### 1.7.1 How notifications are updated

The `notification_update` view explains the total flow of notification update requests.

The AJAX requests for updatation of notifications are fired in every 5 seconds by default. You can control the time interval between the update requests by adding an entry named `NOTIFY_UPDATE_TIME_INTERVAL` set you the number of milliseconds you want.

## 1.8 Models

```
class notify.models.Notification(*args, **kwargs)
    Notification Model for storing notifications. (Yeah, too obvious)
```

This model is pretty-much a replica of `django-notifications`'s model. The newly added fields just adds a feature to allow anonymous actors, targets and object.

### Attributes:

**recipient** The user who receives notification.

**verb** Action performed by actor (not necessarily).

**description** Option description for your notification.

**actor\_text** Anonymous actor who is not in content-type.

**actor\_url** Since the actor is not in content-type, a custom URL for it.

... Same for target and obj.

### **nf\_type**

Each notification is different, they must be formatted differently during HTML rendering. For this, each notification gets to carry it own *notification type*.



This notification type will be used to search the special template for the notification located at `notifications/includes/NF_TYPE.html` of your template directory.

The main reason to add this field is to save you from the pain of writing `if...elif...else` blocks in your template file just for handling how notifications will get rendered.

With this, you can just save template for an individual notification type and call the *template-tag* to render all notifications for you without writing a single `if...elif...else` block.

You'll just need to do a  

```
{% render_notifications using NOTIFICATION_OBJ %}
```

and you'll get your notifications rendered.

By default, every `nf_type` is set to default.

**Extra JSONField**, holds other optional data you want the notification to carry in JSON format.

**Deleted** Useful when you want to *soft delete* your notifications.

#### **actor**

Property to return actor object/text to keep things DRY.

**Returns** Actor object or Text or None.

#### **actor\_url**

Property to return permalink of the actor. Uses `get_absolute_url()`.

If `get_absolute_url()` method fails, it tries to grab URL from `actor_url_text`, if it fails again, returns a "#".

**Returns** URL for the actor.

#### **as\_json()**

Notification data in a Python dictionary to which later gets supplied to `JSONResponse` so that it gets JSON serialized the *django-way*

**Returns** Dictionary format of the QuerySet object.

#### **static do\_escape(obj)**

Method to HTML escape an object or set it to None conditionally. performs `force_text()` on the argument so that a foreignkey gets serialized? and spit out the `__str__` output instead of an Object.

**Parameters** `obj` – Object to escape.

**Returns** HTML escaped and JSON-friendly data.

#### **mark\_as\_read()**

Marks notification as read

**mark\_as\_unread()**

Marks notification as unread.

**obj**

See `actor` property.

**Returns** Action Object or Text or None.

**obj\_url**

See `actor_url` property.

**Returns** URL for Action Object.

**target**

See `actor` property

**Returns** Target object or Text or None

**target\_url**

See `actor_url` property.

**Returns** URL for the target.

**class** `notify.models.NotificationQueryset` (*model=None, query=None, using=None, hints=None*)

Chain-able QuerySets using `.as_manager()`.

**active()**

QuerySet `filter()` for retrieving both read and unread notifications which are not soft-deleted.

**Returns** Non soft-deleted notifications.

**active\_all** (*user=None*)

Method to soft-delete all notifications of a User (if supplied)

**Parameters** `user` – Notification recipient.

**Returns** Updates QuerySet as soft-deleted.

**delete\_all** (*user=None*)

Method to soft-delete all notifications of a User (if supplied)

**Parameters** `user` – Notification recipient.

**Returns** Updates QuerySet as soft-deleted.

**deleted()**

QuerySet `filter()` for retrieving soft-deleted notifications.

**Returns** Soft deleted notification filter()

**prefetch()**

Marks the current queryset to prefetch all generic relations.

**read()**

QuerySet `filter()` for retrieving read notifications.

**Returns** Read and active Notifications filter().

**read\_all** (*user=None*)

Marks all notifications as read for a user (if supplied)

**Parameters** `user` – Notification recipient.

**Returns** Updates QuerySet as read.

**unread()**

QuerySet filter() for retrieving unread notifications.

**Returns** Unread and active Notifications filter().

**unread\_all** (*user=None*)

Marks all notifications as unread for a user (if supplied)

**Parameters** **user** – Notification recipient.

**Returns** Updates QuerySet as unread.

## 1.9 Views

`notify.views.delete` (*request, \*args, \*\*kwargs*)

Deletes notification of supplied notification ID.

Depending on project settings, if `NOTIFICATIONS_SOFT_DELETE` is set to `False`, the notifications will be deleted from DB. If not, a soft delete will be performed.

By default, notifications are deleted softly.

**Parameters** **request** – HTTP request context.

**Returns** Response to delete action on supplied notification ID.

`notify.views.mark` (*request, \*args, \*\*kwargs*)

Handles marking of individual notifications as read or unread. Takes `notification_id` and `mark_action` as POST data.

**Parameters** **request** – HTTP request context.

**Returns** Response to mark action of supplied notification ID.

`notify.views.mark_all` (*request, \*args, \*\*kwargs*)

Marks notifications as either read or unread depending of POST parameters. Takes `action` as POST data, it can either be `read` or `unread`.

**Parameters** **request** – HTTP Request context.

**Returns** Response to `mark_all` action.

`notify.views.notification_redirect` (*request, ctx*)

Helper to handle HTTP response after an action is performed on notification

**Parameters**

- **request** – HTTP request context of the notification
- **ctx** – context to be returned when a AJAX call is made.

**Returns** Either JSON for AJAX or redirects to the calculated next page.

`notify.views.notification_update` (*request, \*args, \*\*kwargs*)

Handles live updating of notifications, follows ajax-polling approach.

Read more: <http://stackoverflow.com/a/12855533/4726598>

Required URL parameters: `flag`.

Explanation:

- The `flag` parameter carries the last notification ID received by the user's browser.

- This `flag` is most likely to be generated by using a simple JS/JQuery DOM. Just grab the first element of the notification list.
  - The element will have a `data-id` attribute set to the corresponding notification.
  - We'll use it's value as the `flag` parameter.
- The view treats the `last_notification_flag` as a `model`filter()` and fetches all notifications greater than the `flag` for the user.
- Then the a JSON data is prepared with all necessary details such as, `verb`, `actor`, `target` and their URL etc. The foreignkey are serialized as their default `__str__` value.
  - Everything will be HTML escaped by django's `escape()`.
- Since these notification sent will only serve temporarily on the notification box and will be generated fresh using a whole template, to avoid client-side notification generation using the JSON data, the JSON data will also contain a rendered HTML string so that you can easily do a JQuery `$yourNotificationBox.prepend()` on the rendered html string of the notification.
- The template used is expected to be different than the template used in full page notification as the css and some other elements are highly likely to be different than the full page notification list.
- The template used will be the `notification_type` of the notification suffixed `_box.html`. So, if your notification type is `comment_reply`, the template will be `comment_reply_box.html`.
  - This template will be stored in `notifications/includes/` of your template directory.
  - That makes: `notifications/includes/comment_reply_box.html`
- The rest is self-explanatory.

**Parameters** `request` – HTTP request context.

**Returns** Notification updates (if any) in JSON format.

`notify.views.notifications` (*request*, \*args, \*\*kwargs)

Returns a rendered page of all notifications for the logged-in user. Uses `notification.nf_type` as the template for individual notification. Each notification type is expected to have a render template at `notifications/includes/NOTIFICATION_TYPE.html`.

**Parameters** `request` – HTTP request context.

**Returns** Rendered notification list page.

`notify.views.read_and_redirect` (*request*, \*args, \*\*kwargs)

Marks the supplied notification as read and then redirects to the supplied URL from the `next` URL parameter.

**IMPORTANT:** This is CSRF - unsafe method. Only use it if its okay for you to mark notifications as read without a robust check.

**Parameters**

- `request` – HTTP request context.
- `notification_id` – ID of the notification to be marked a read.

**Returns** Redirect response to a valid target url.

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