River Admin Documentation

Release 0.6.0

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`River Admin` is a very modern and a shiny customizable admin extension with user friendly and easy to use interfaces for django-river . The power of it comes from the libraries it uses on both backend and frontend sides which are `django-river`, `django-rest-framework` `Vue` and `Vuetify`.

River Admin Website

CHAPTER 1

Donations

This is a fully open source project and it can be better with your donations.

If you are using `River Admin` to create a commercial product, please consider becoming our sponsor , patron or donate over PayPal

CHAPTER 2

Live Demo

http://demo.riveradminproject.com/river-admin/

- User: demo
- Password: demo

To run demo locally;

```
export LOCAL_DEMO=True
pip install -r requirements.txt
python manage.py migrate
python manage.py bootstrap_shipping_example
python manage.py bootstrap_issue_tracker_example
python manage.py bootstrap_river_admin_demo
python manage.py runserver
```

And then go to `http://127.0.0.1:8000/river-admin/`

Note: Create an admin user for yourself if you would like more access.

CHAPTER 3

Getting Started

You can easily get started with `django-river` by following *Getting Started*.

CHAPTER 4

Contents

4.1 Getting Started

4.1.1 Requirements

- django-river >= 3.2.0
- Any `Python` version that is supported by django-river
- Any `Django` version that is supported by django-river
- Any browser that is supported by Vuetify (Browser Support)

4.1.2 Installation

Note: Before you can set up your workflow, your app integration with `django-river` must be done. Don't worry it is with the easiest setup.To see how to do it with `django-river` pleas have a look at *django-river*

1. Install and enable it

```
pip install river-admin
```

```
# settings.py

INSTALLED_APPS=[
    ...
    'river',
    'rest_framework.authtoken',
    'river_admin'
    ...
]
```

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```
REST_FRAMEWORK = {
    'DEFAULT_AUTHENTICATION_CLASSES': [
        'rest_framework.authentication.BasicAuthentication',
        'rest_framework.authentication.TokenAuthentication',
    ],
    'EXCEPTION_HANDLER': 'river_admin.views.exception_handler'
}
```

2. Do migration;

```
python manage.py migrate
```

3. Register `River Admin` urls in your app `urls.py`

```
urlpatterns = [
    url(r'^', include("river_admin.urls")),
]
```

4. Collect statics and make sure `STATIC_URL` is `/static/` **(FOR PRODUCTION WHERE DEBUG=False)**;

```
python manage.py collectstatic --no-input --no-post-process
```

5. Run your application;

```
python manage.py runserver 0.0.0.0:8000
```

6. Open it up on the browser and login with an admin user and enjoy the best way of flowing your work ever :-)

```
http://0.0.0.0:8000/river-admin/
```

4.1.3 Out of the Box Examples

`River Admin` comes with few examples that you can fiddle with and find your way easier.

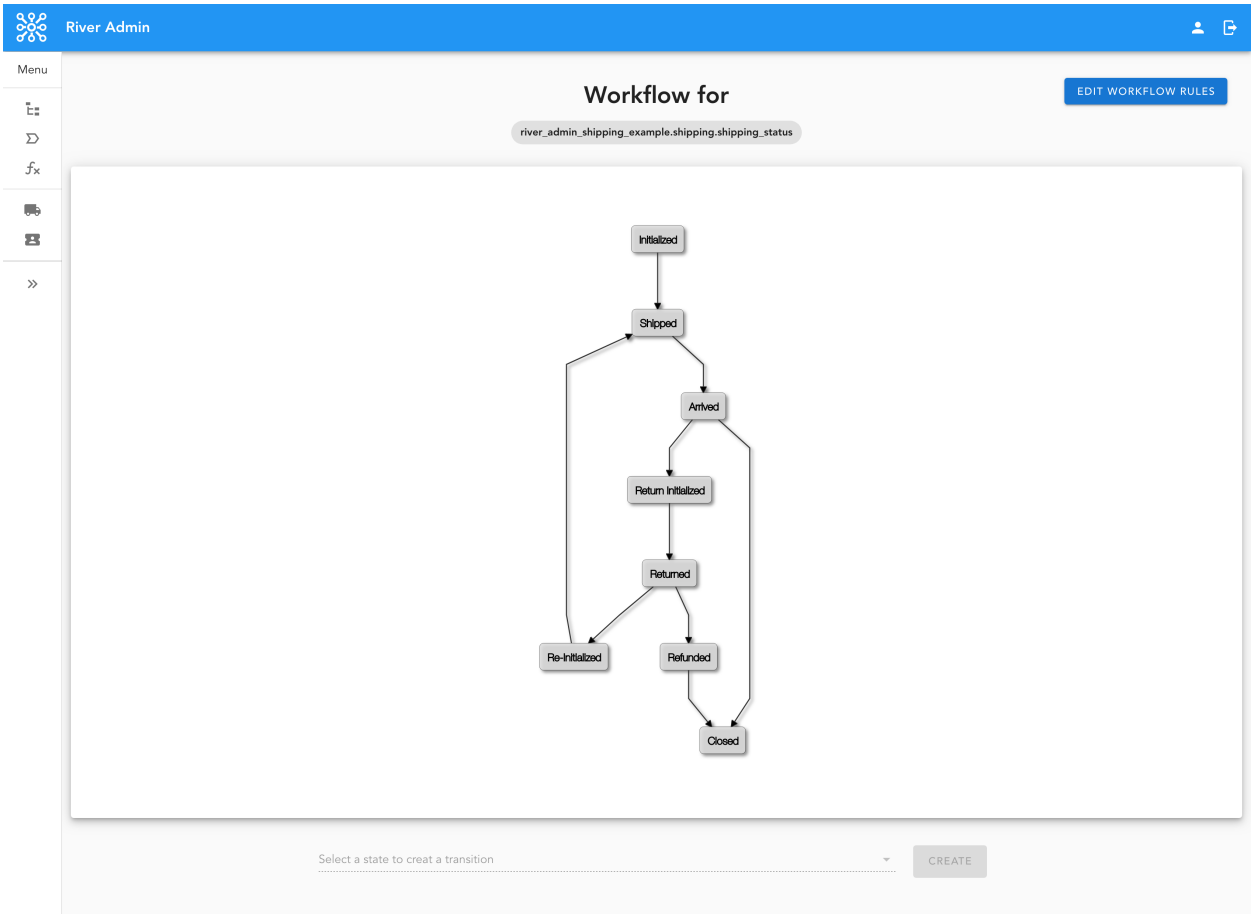
Note: Enabling them will create their tables and also the necessary workflow components in the DB for you. It might be good idea to try them out on a development database.

Shipping Flow

Enable the example app and then run your application

```
# settings.py

INSTALLED_APPS=[
    ...
    'river',
    'rest_framework.authtoken',
    'river_admin',
    'examples.shipping_example',
    ...
]
```

```
python manage.py migrate
python manage.py bootstrap_shipping_example
```

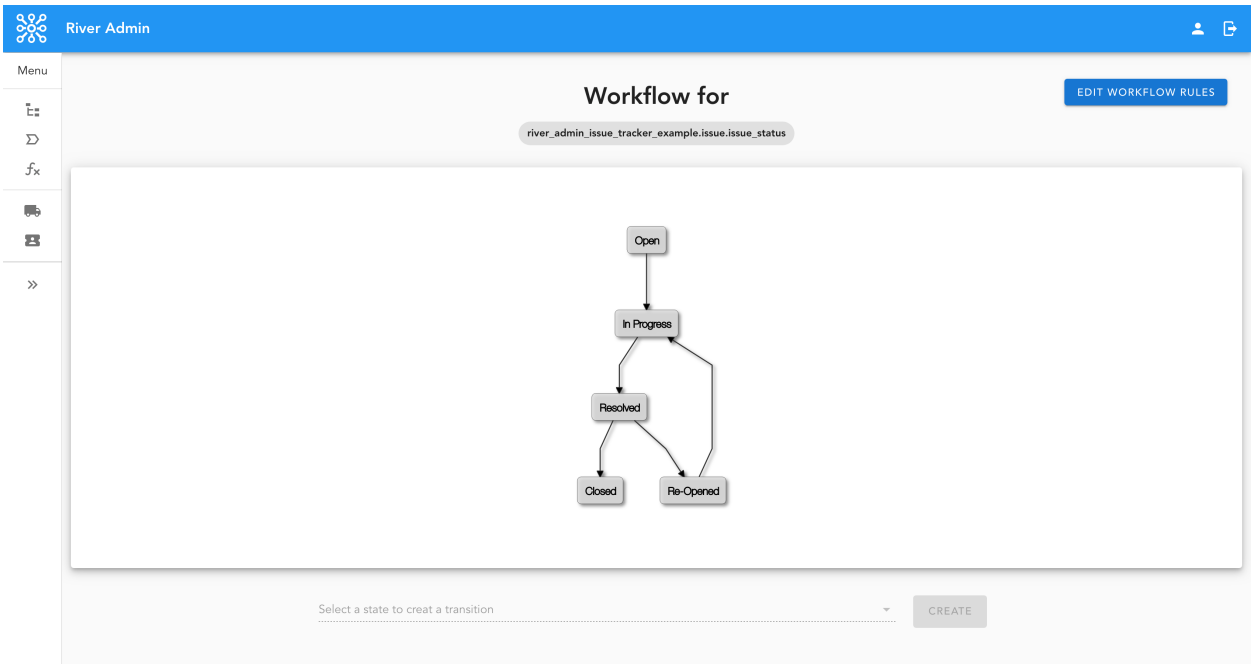


Issue Tracking Flow

Enable the example app and then run your application

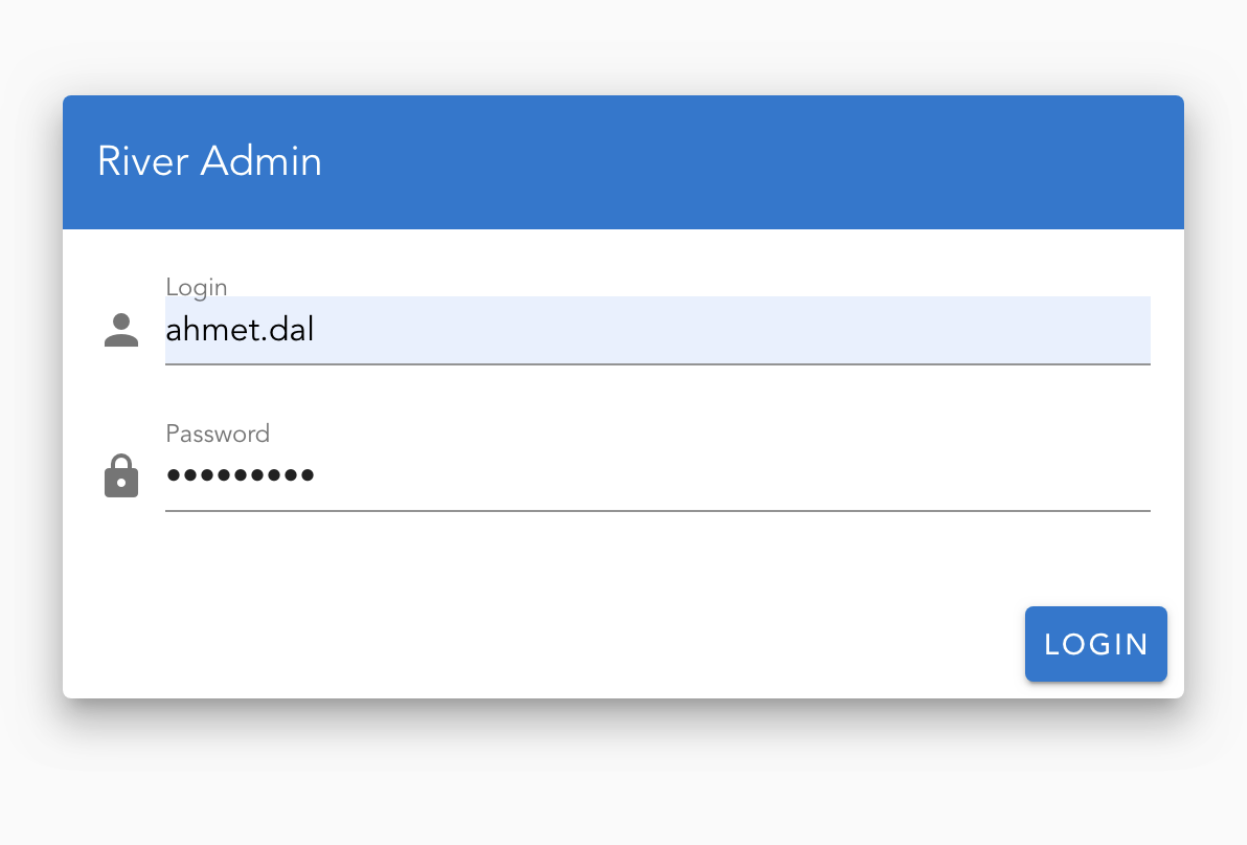
```
# settings.py

INSTALLED_APPS=[
    ...
    'river',
    'rest_framework.authtoken',
    'river_admin',
    'examples.issue_tracker_example',
    ...
]
```

```
python manage.py migrate
python manage.py bootstrap_issue_tracker_example
```



4.2 Authentication

`River Admin` is working like an administration interface and naturally it has an authentication mechanism. Even though it is working with the users who are created via Django API, it doesn't use Django Admin logged in your Django admin. So you will be asked to login with your user;



Note: In order to be able to login, your user has to be either an admin user or having `river_workflow.view` permissions. So to speak, `river_workflow.view` is the minimum required permission to be able to user `River Admin`

Once user is logged in, they won't be asked by their credentials until they are logged out or their minimum required permission described above is revoked.

4.3 Workflows

4.3.1 Create Workflow

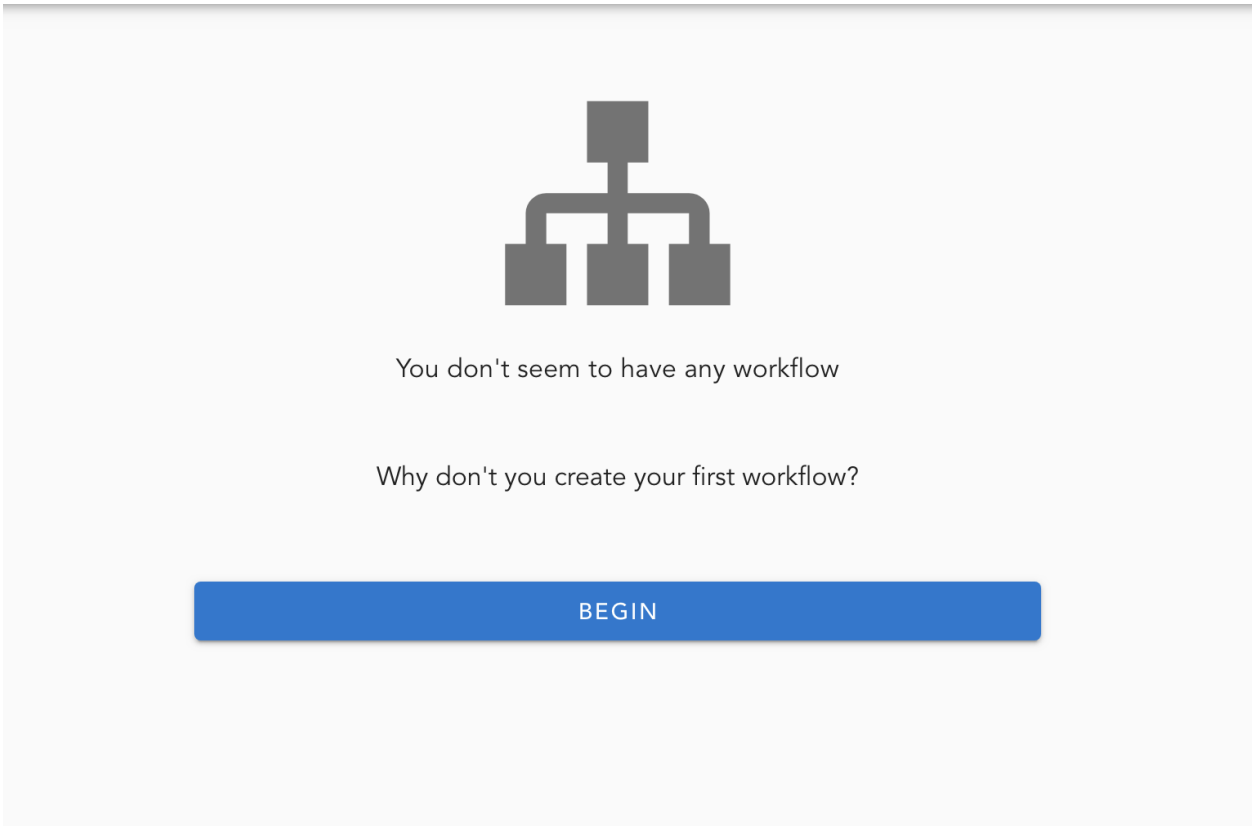
Note: Before you can set up your workflow, your app integration with `django-river` must be done. Don't worry it is with the easiest setup.To see how to do it with `django-river` pleas have a look at `django-river`

Note: In order to see this page, your user has to have `river.add_workflow` permission.

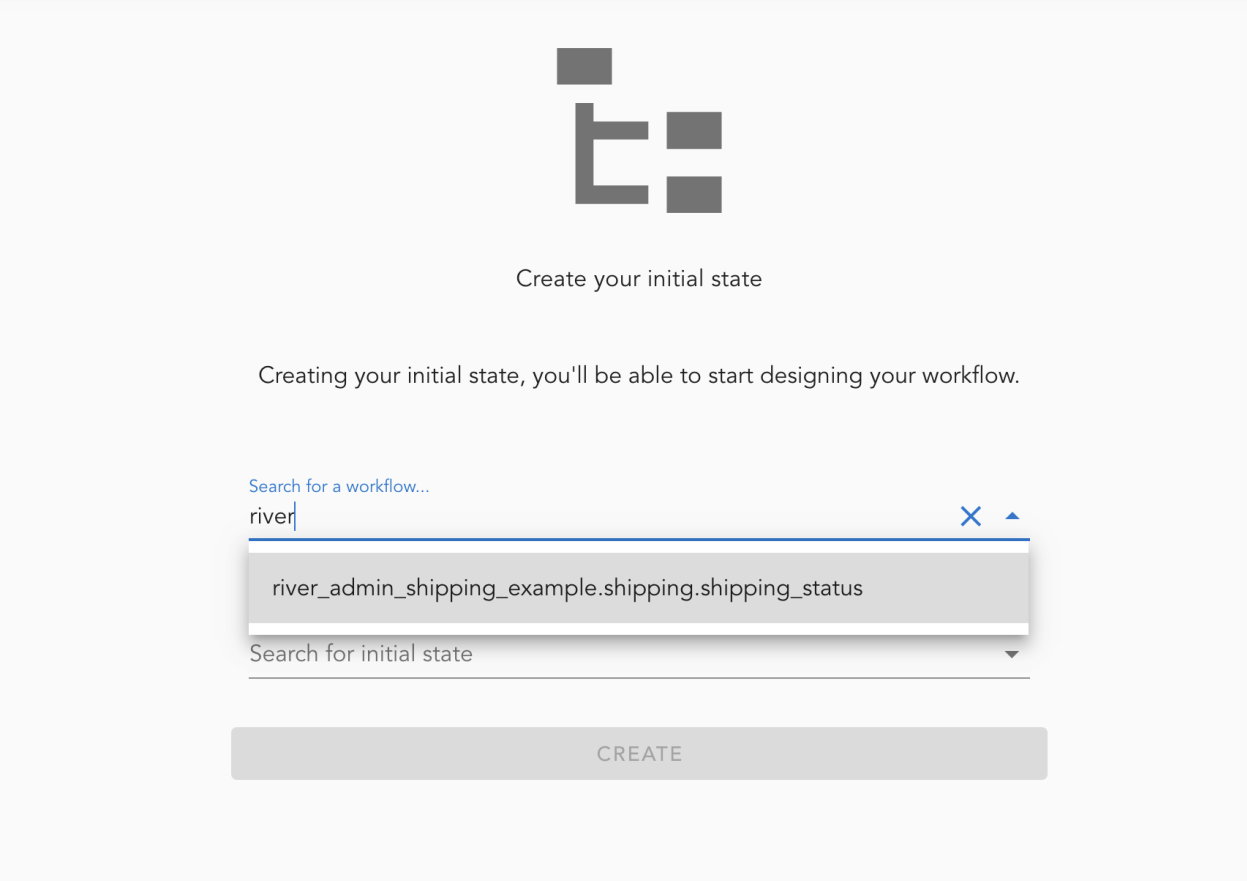
Creating a workflow consist of defining its intiial state and the state field along with the content type and later on the transitons buy just clicking.

Initiale Worklfow

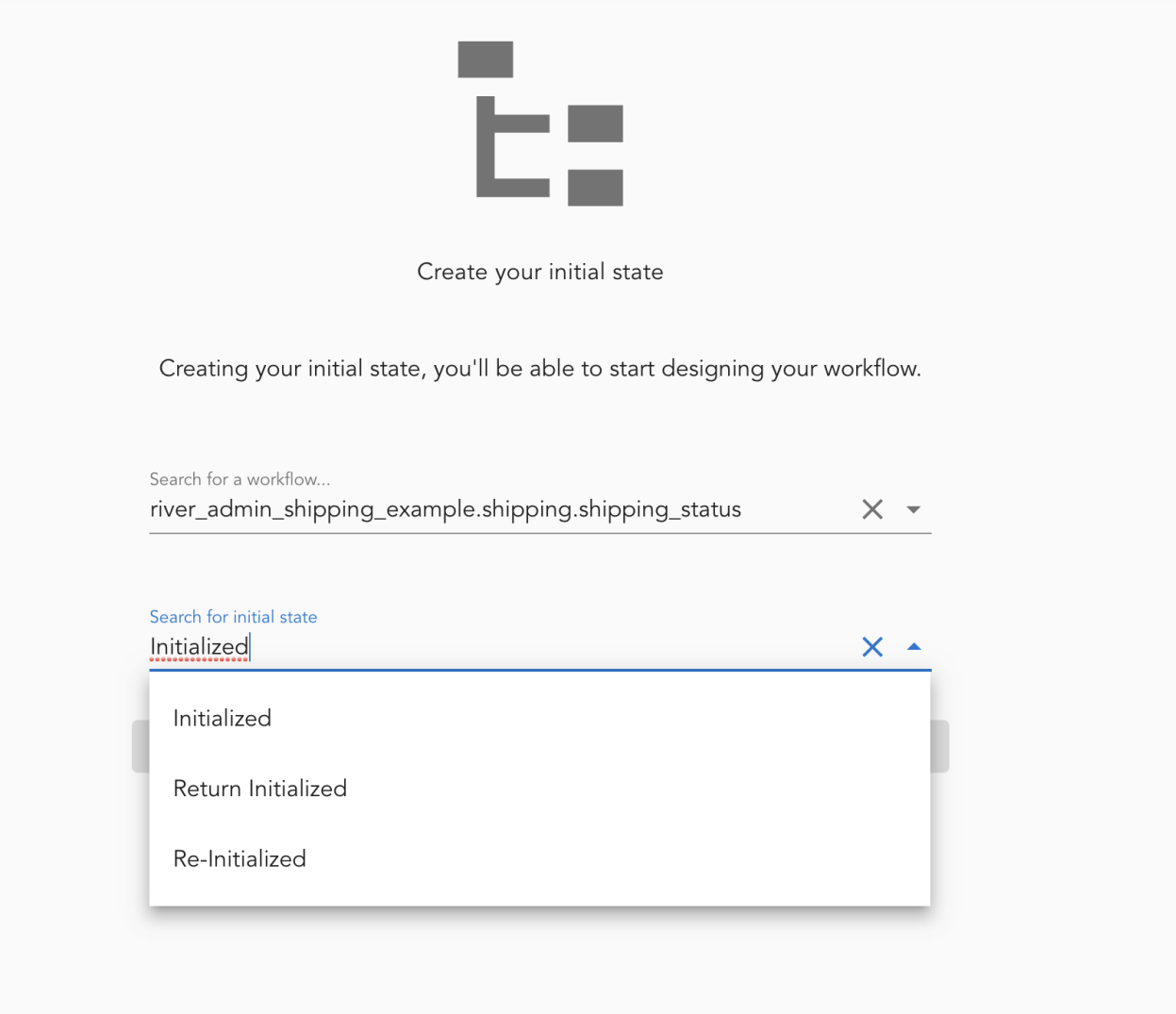
- if you haven't had any worklow before, `Home` page will wellcome you with a button which will take yo to the workflow creation page. If you have had a workflow before then just click the plus button on the right bottom corner to navigate to the page.



- Pick the workflow that you have had the integration with `django-river`



- Pick the initial state of your workflow and lastly hit the create button



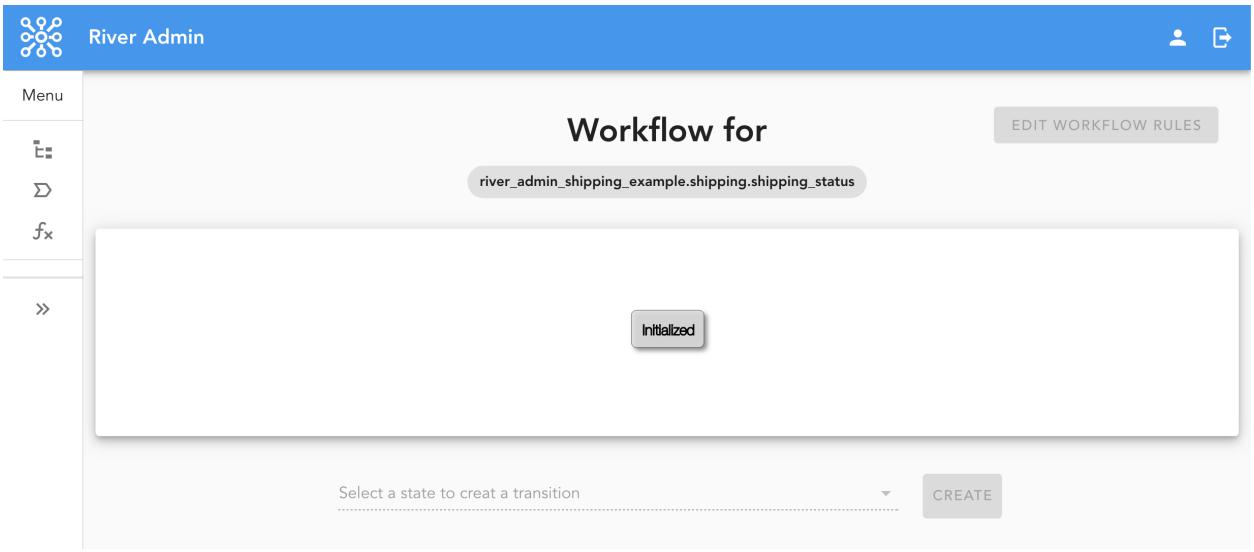
Create Transitions

This is the most fun part of `River Admin`. Becuase it provides a highly interactive one screen to create them all.

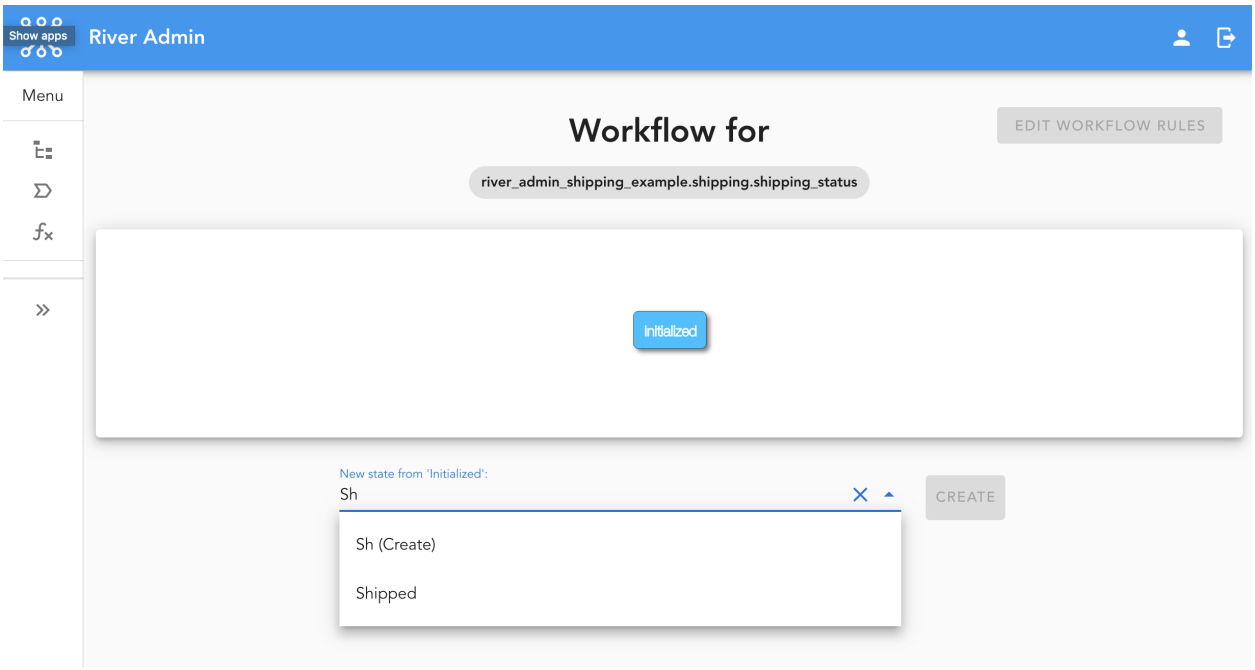
Note: Every change you make on that screen is an online action. Meaning that it will also be applied on the DB.

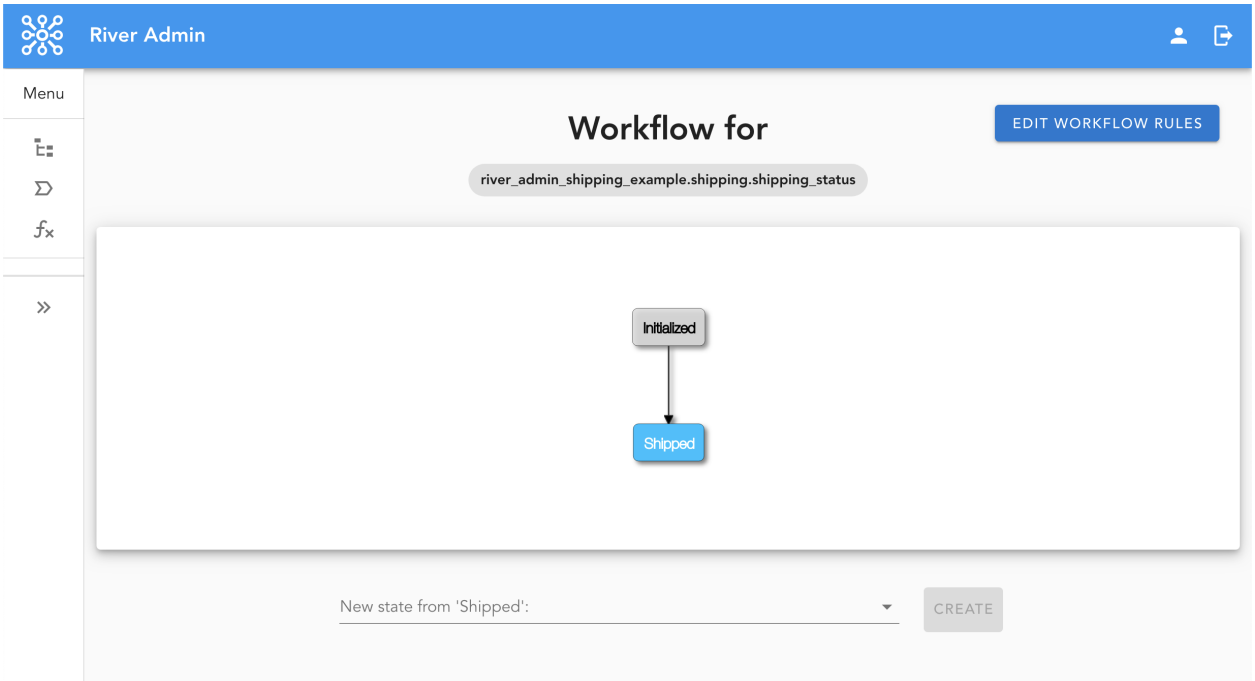
Note: Same screen can anytime be used to update the transitions in the workflow as well

- What you are going to run into after you have done the previous steps is something like this;



- This interface expects you to click the rectangles which are representing the transition states to create next state out of them. Simply click them and that will change their color so that you can understand you managed to select

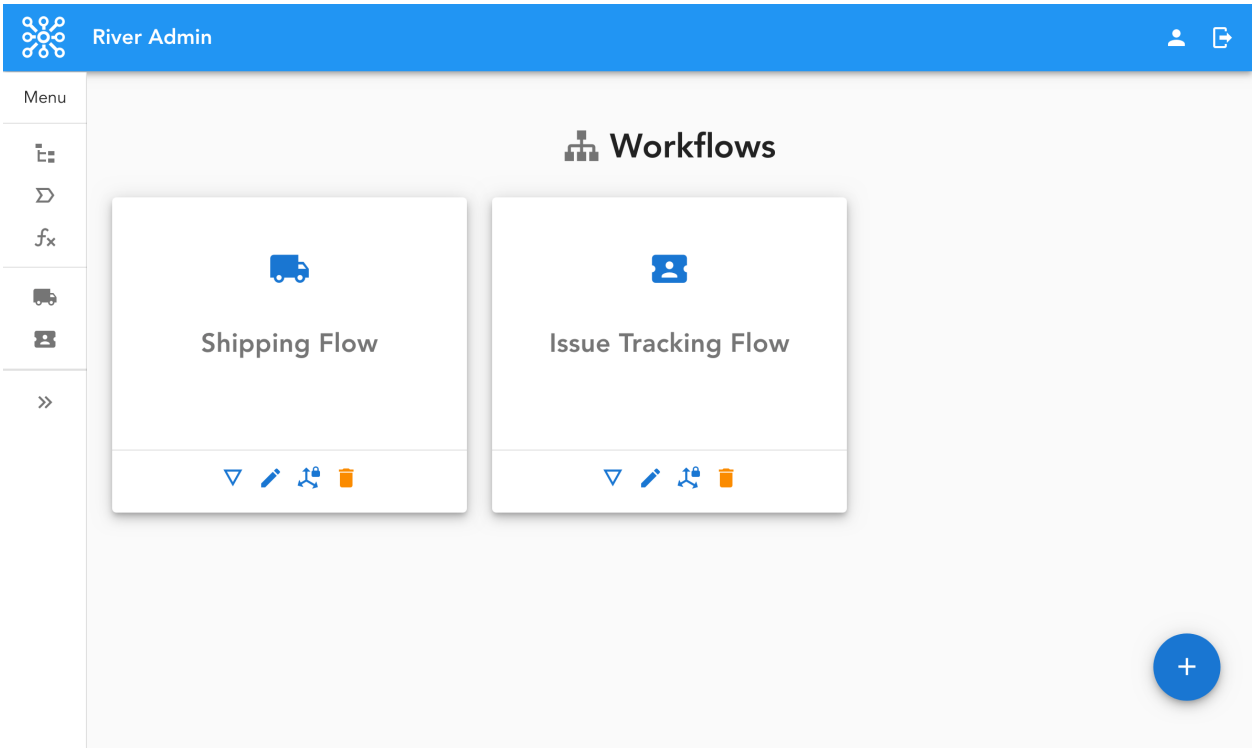




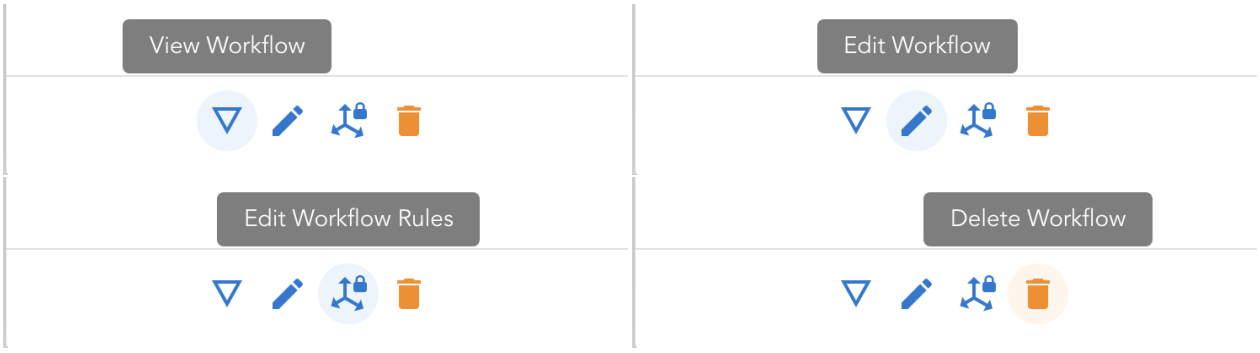
4.3.2 List Workflows

Note: In order to see this page, your user has to have `river.view_workflow` or `river.change_workflow` in older version of `Django`.

`Home` page of `River Admin` is also listing workflow page. If you are home for the first time meaning that you haven't had any workflow before, this page won't have any workflow to list. But once you have your first workflow you will start seeing them.



If your user is authorized to do those operations, the component comes with bunch of button that allows you to go to a workflow's `detail`, `editing the workflow`, `authorization rule management` pages and a button to delete it.



Note: Those buttons for the workflow will be disabled if you don't have the required permissions.

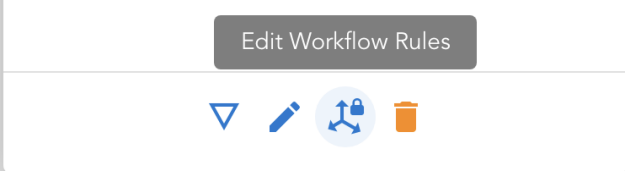
4.3.3 Authorizations

Thanks to `django-river` because it supports flexibility to manage workflow components on the fly meaning that the changes can be applied without a code change or a deployment. `River Admin` is extending this capability and providing a user friendly, easy to use screens to do that on top of `django-river`. One of these screens is managing the authorization rules of the transitions.

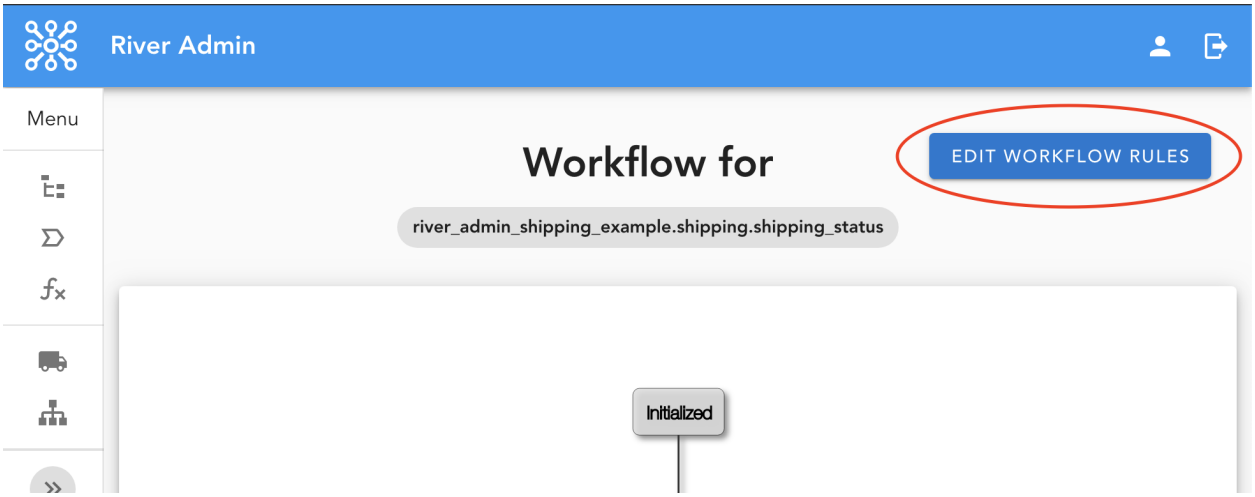
How to Navigate

Note: In order to see this page, your user has to have `river.view_workflow` together with `river.change_workflow` permissions.

In order to go to that screen you can either be navigated from the home screen by clicking the "Edit Workflow Rules" button;

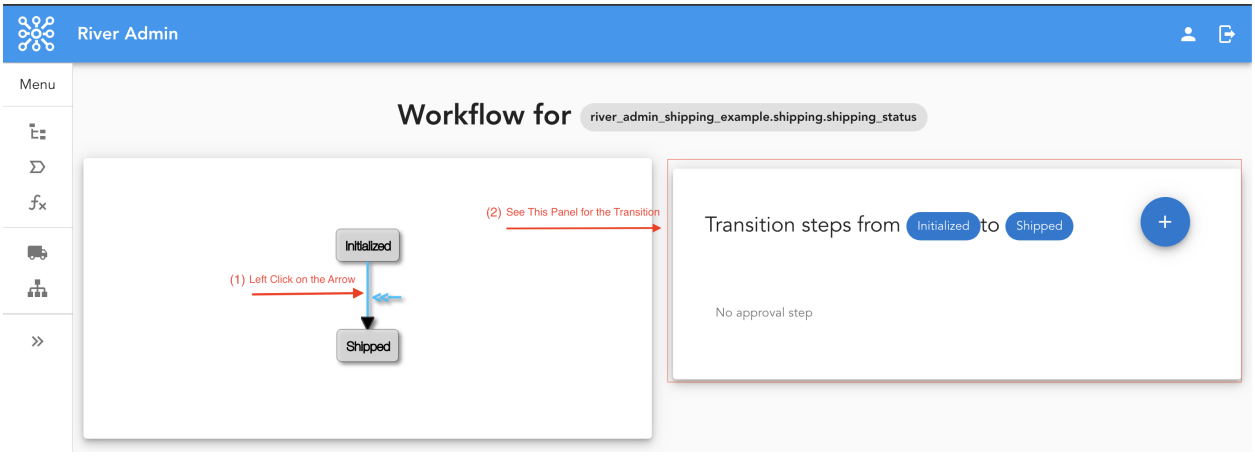


Or from the editing workflow page by clicking "Edit Workflow Rules" button;



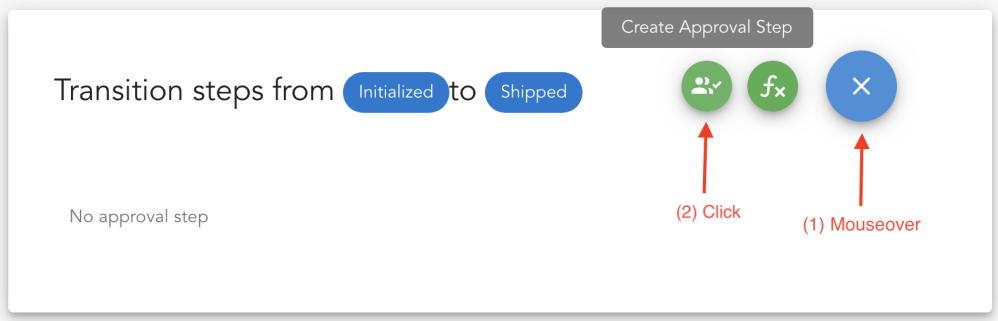
Add Authorization Rule

`River Admin` provides a graphical interface that illustrates states and transitions in the workflow which you have already seen while creating the workflow. Same component exists here but with more capability. That extra capability you have here is to be able to click transitions which are illustrated with arrows between the states. Later you will see another component on the right side of the screen where you can manage the authorization rules for the transition.

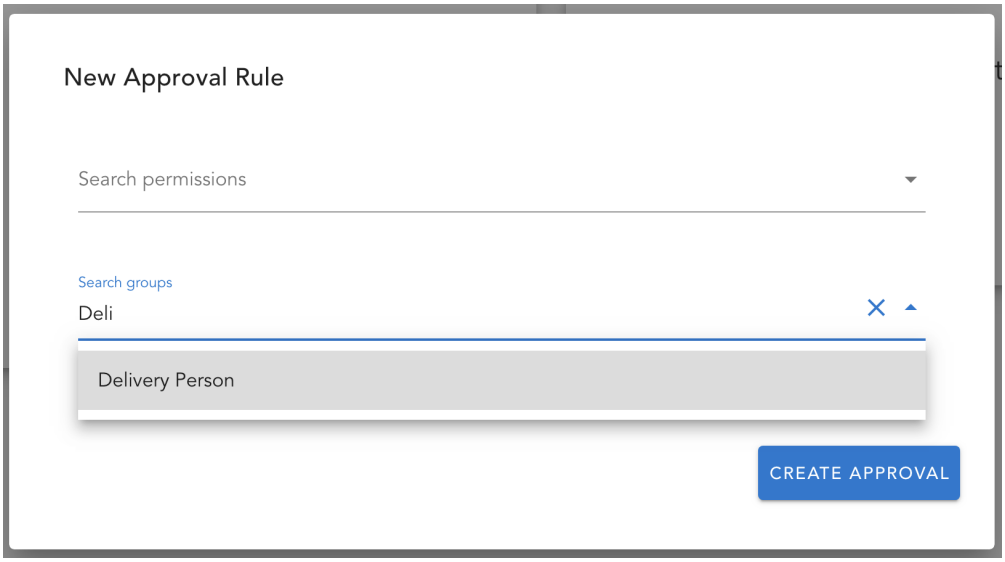


Step 1:

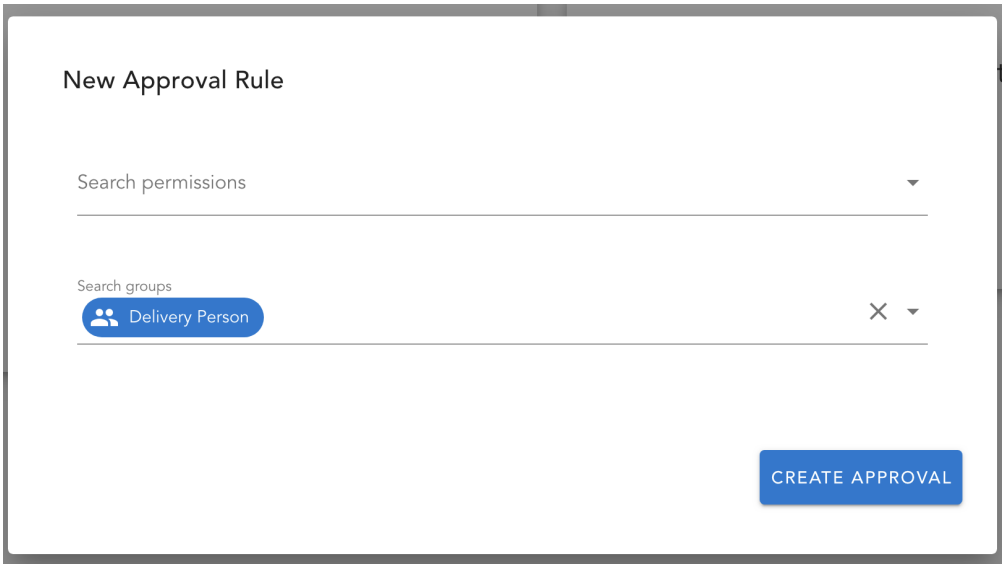
Step 2:



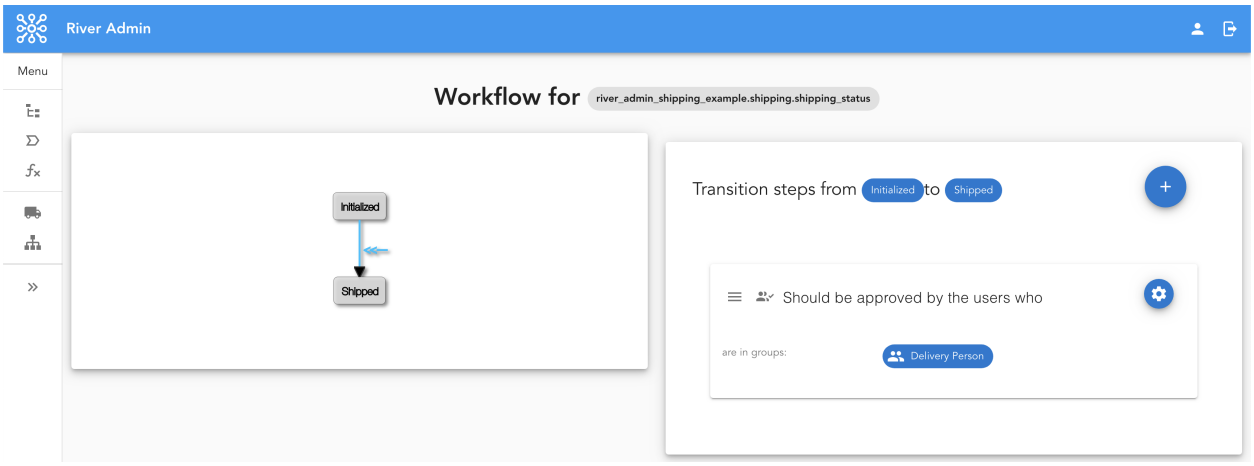
Step 3:



Step 4:



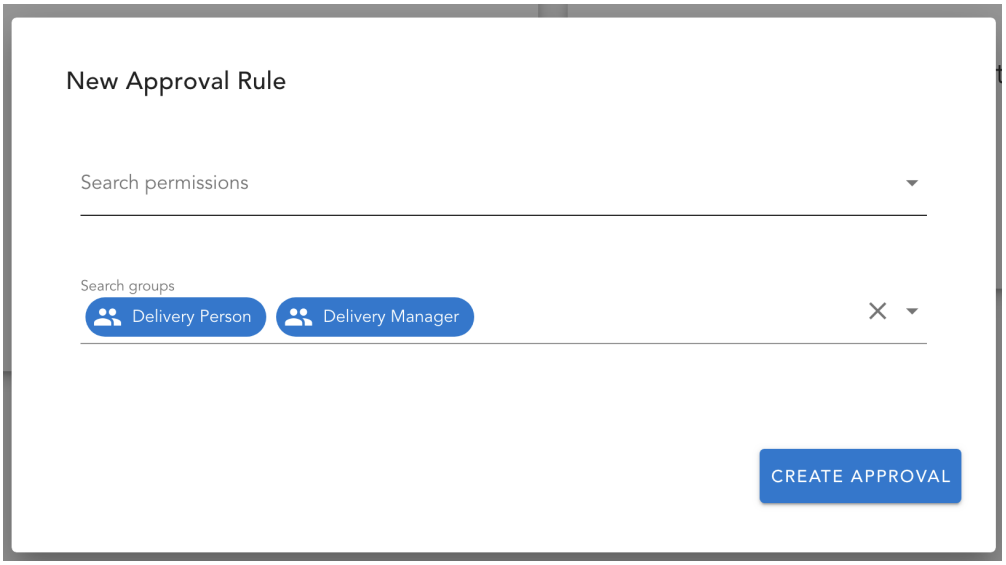
After the authorization rule is created successfully;

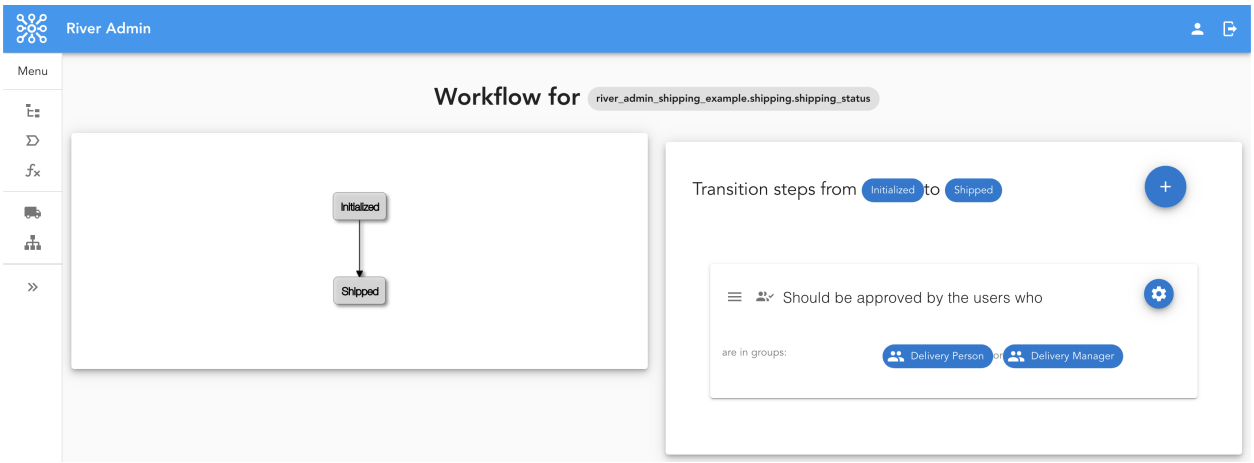


The authorization rule we have just created means that in order the transition to happen a user within `Delivery Person` user group should approve it.

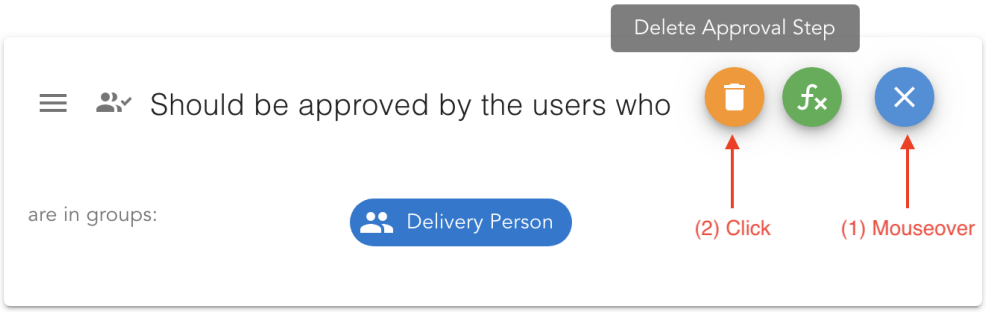
Multiple Groups

Multiple user groups can also be selected in one authorization rules as it is already supported by `django-river` and that would mean that anyone who is in those groups can approve the transition;





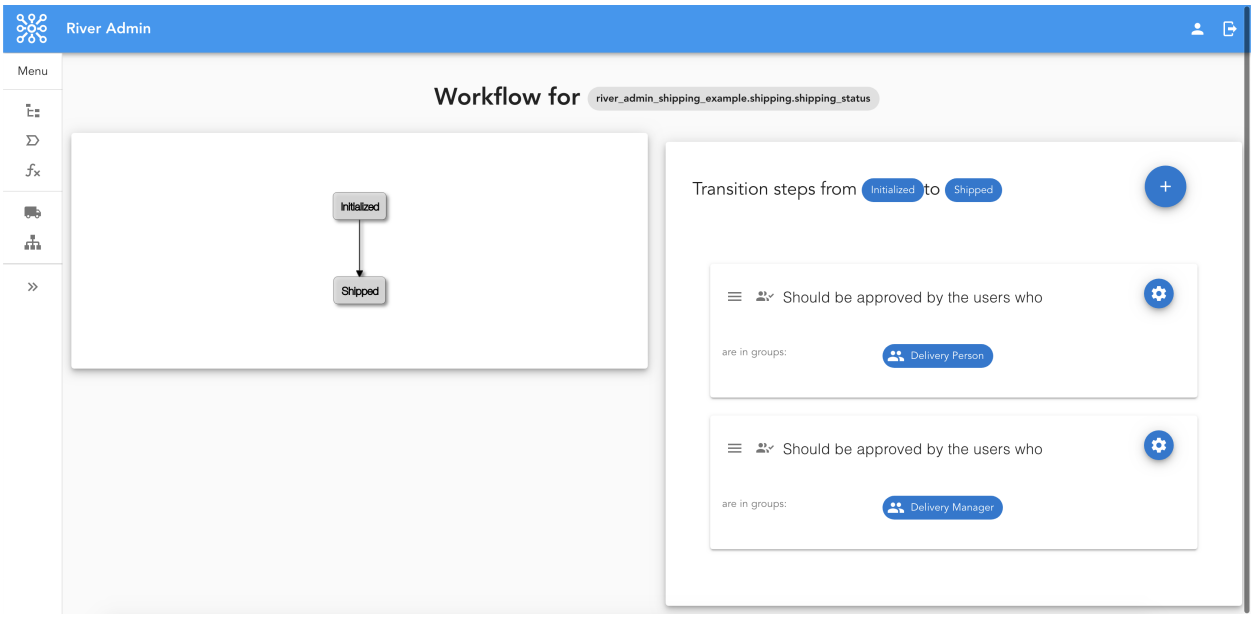
Delete Authorization Rule



Chain of Authorization Rules

This is one of the cool feature of `django-river` already. Multiple authorization rules can be chained togeter with a prioritization mechanism. With this a first authorization rule should be satisfied before the second one can kick in.

Note: This should not be mixed up with having multiple groups in one authorization rule. Because with multiple groups anytime any user in any of the specified group is authorized to approve the transition.

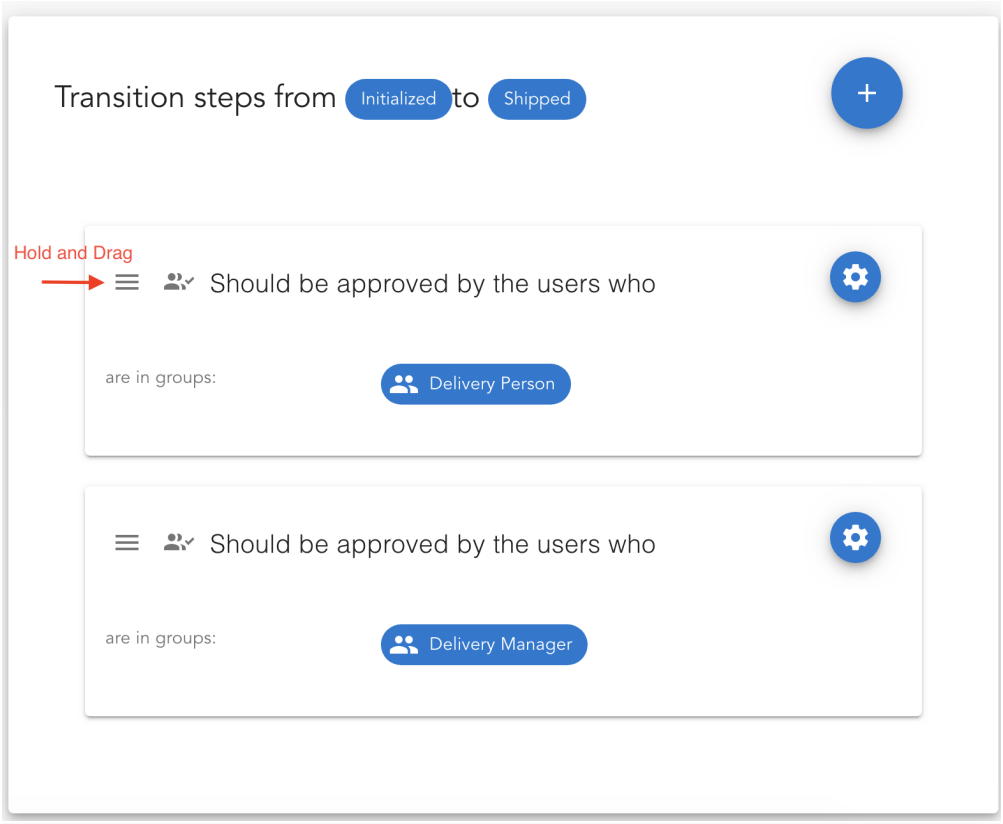


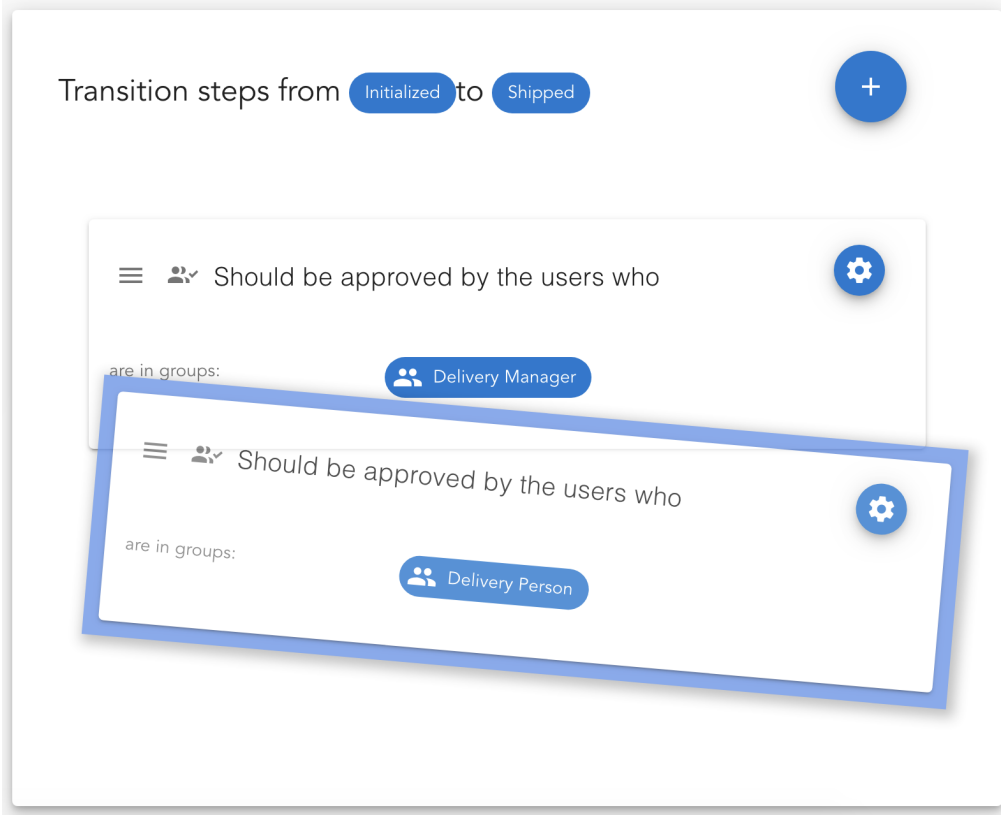
What is created in the image above is a chain of authorization rules for the transition. It means that a users within `Delivery Person` group should first approve it before it is on the user's approval who are in the `Delivery Manager` group.

Note: The prioritization order matters here.

Reprioritizition

One of the most convinient improvement with `River Admin` on top of `django-river` is changing the order of the chain by just a drag and drop.


Transition steps from
Initialized
to
Shipped
Hold and Drag
Should be approved by the users who
are in groups:
Delivery Person
Should be approved by the users who
are in groups:
Delivery Manager


Transition steps from
Initialized
to
Shipped
Should be approved by the users who
are in groups:
Delivery Manager
Should be approved by the users who
are in groups:
Delivery Person

4.3.4 Hooks

`Hooks` are the workflow component for you to subscribe certain events in your workflow like a transition happens, an auhorization rule is approved or the workflow is completed. It can be either a rule in general for whole workflow or for a specific workflow object too. In this section, we will be looking into the first one

After `django-river` version `3.0.0`, hooks are supported on the fly and this is another feature of `django-river` which `River Admin` has some interfaces for.

Hooks are managed on the same page with authorizations for a workflow. So, to know how to navigate to the page, please take a look at *How to Navigate*

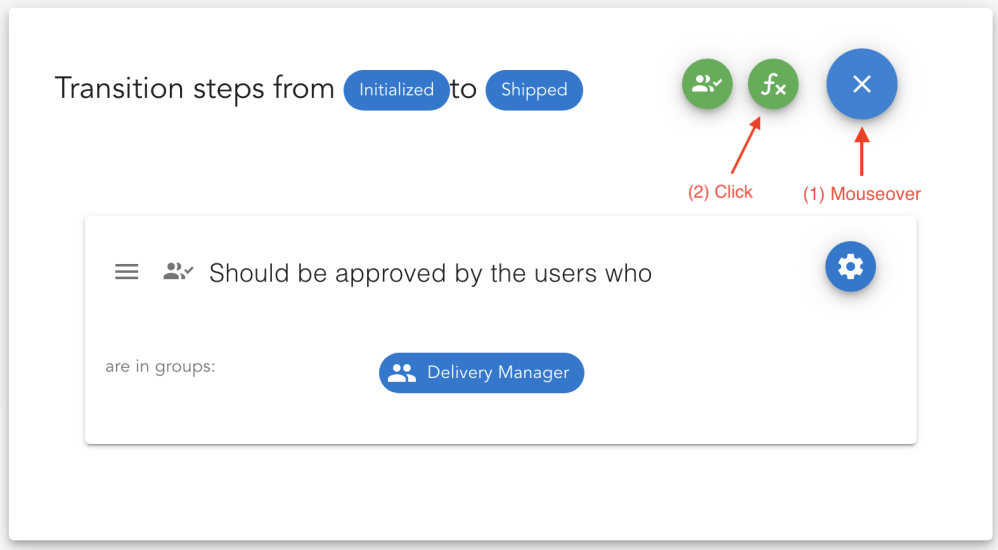
Note: To register a hook to a certain event, you need the required function to be defined preliminary. To see how to create a function please look at *Create & Update Function*

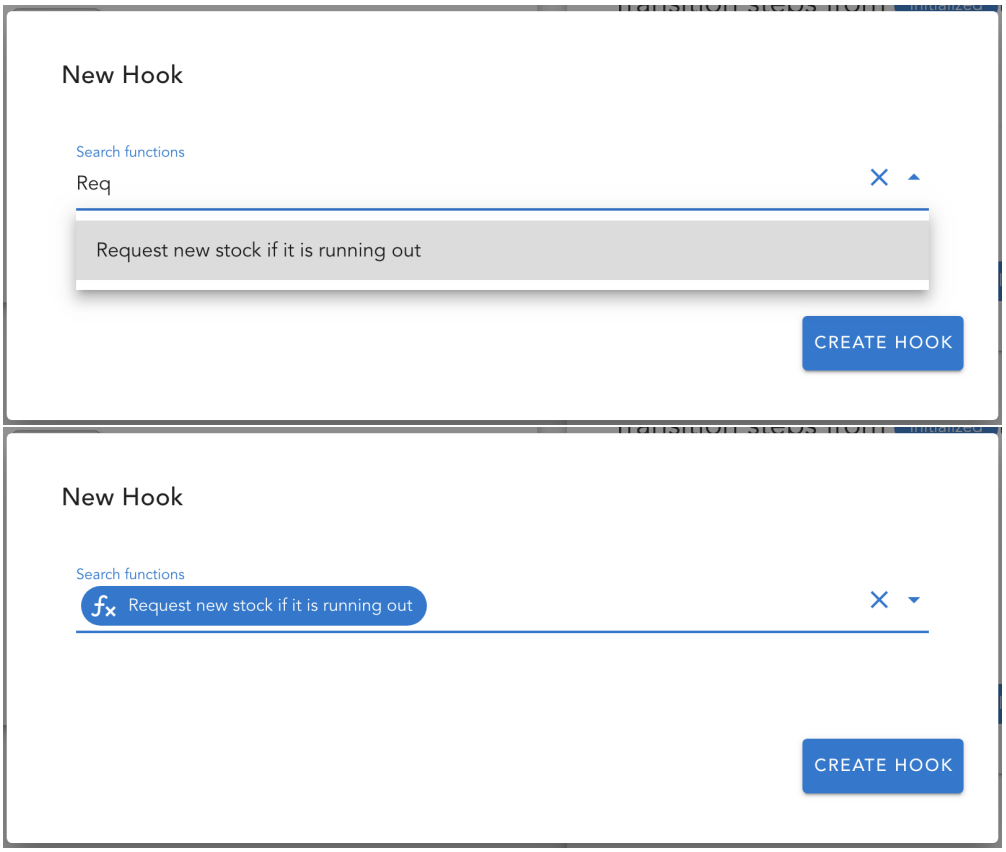
Note: Even though `django-river` supports transition, approvals and workflow completing events to hook up, `River Admin` currently supports only transitions and approval hooks.

Apart from that even tough `django-river` gives you the capability of defining your hooks before the event happens or after the event happens, `River Admin` simplifies this by just allowing `before transition happens` and `after an authorization rule is approved` for the sake of convinience. By this it is very smooth to create your workflow along with your hooks all together.

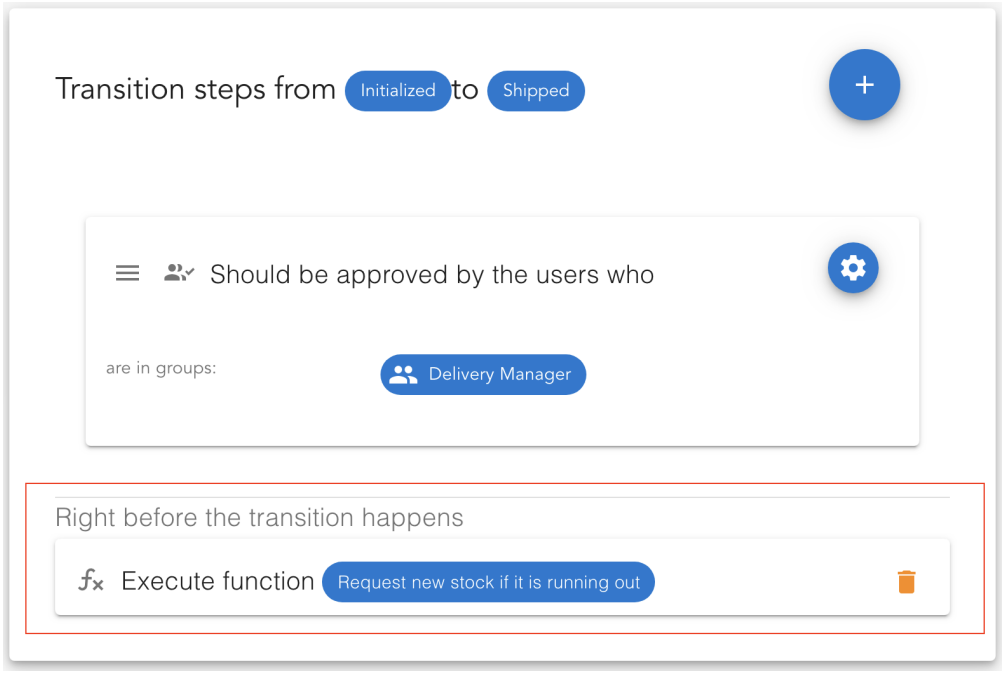
Create Transition Hooks

Transition hooks can be defined for whole transition. It means that the hook will be executed right before the transition happens.



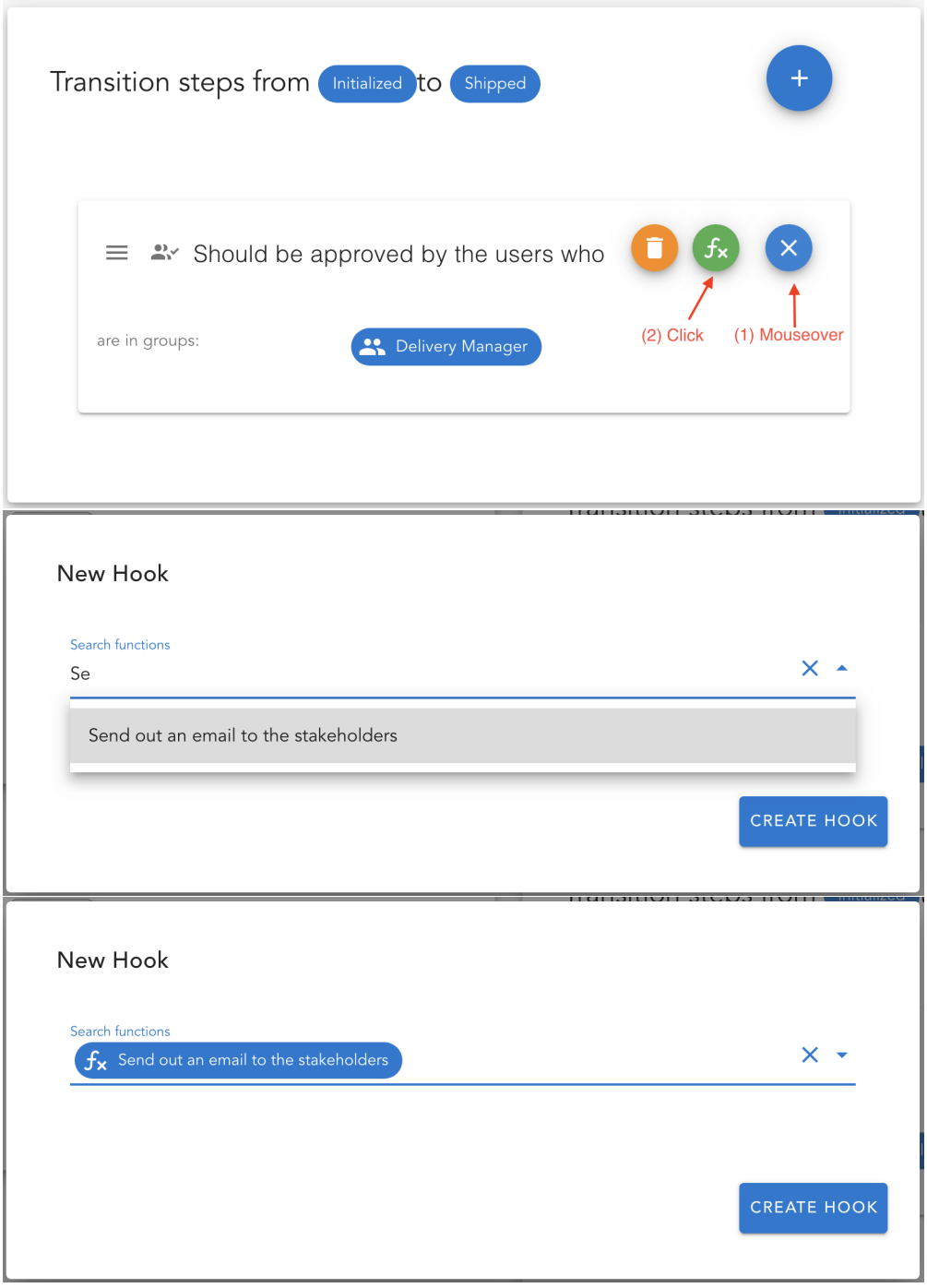


After you create, it should look like this;

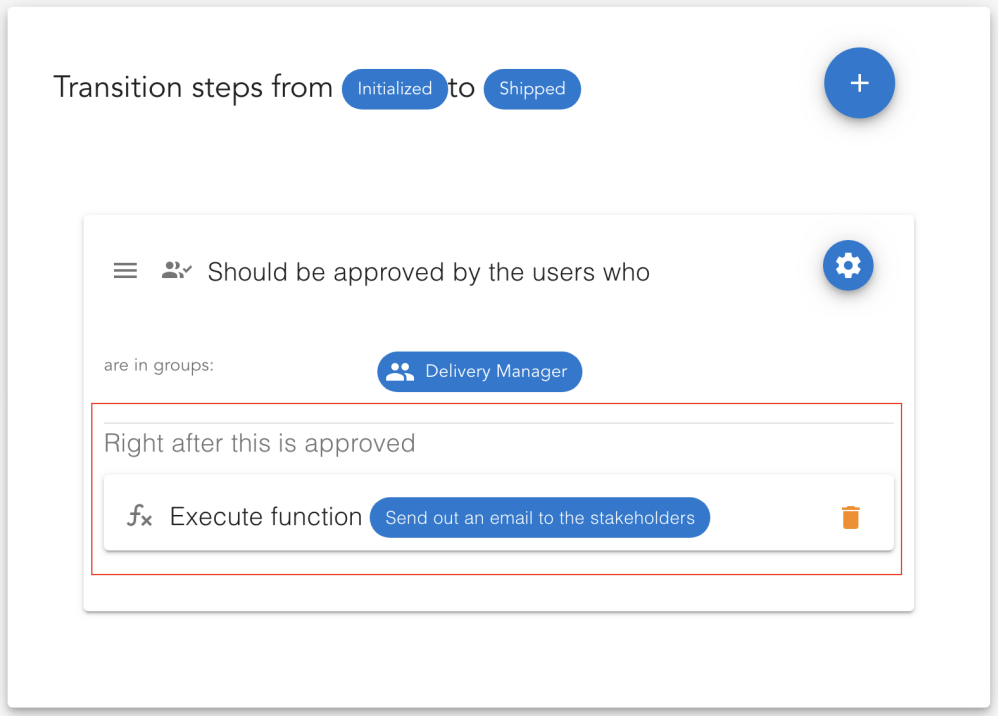


Create Approval Hooks

Approval hooks can be defined for a specific authorization rule not for whole transition. After the authorization rule is approved your hook will be invoked.



After you create, it should look like this;



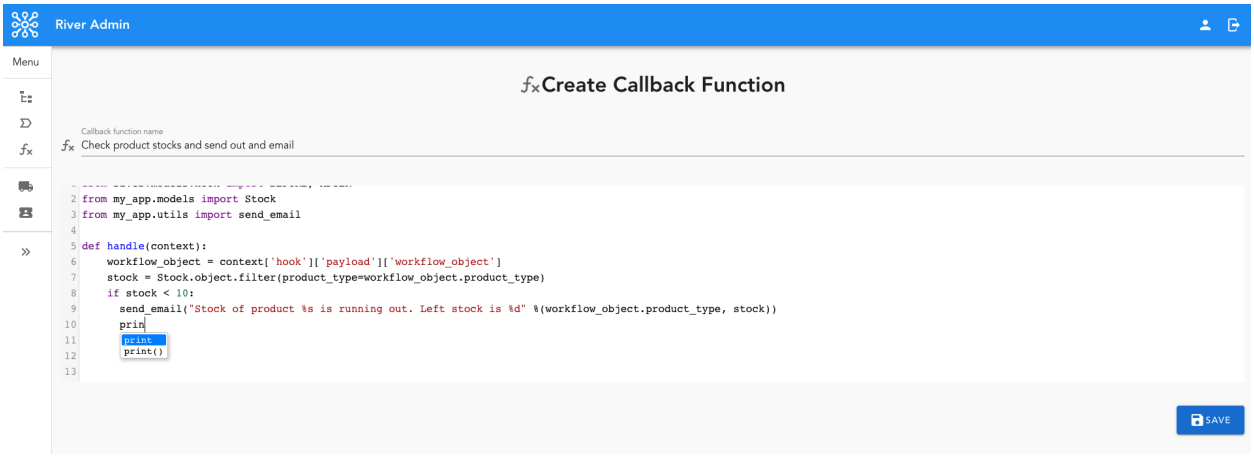
4.4 Functions

`django-river` after version `3.0.0` started to support on the fly functions and the hooks on certain events in a workflow. `River Admin` is making it very easy to use with some fency user interfaces. Here how you can manage your functions;

4.4.1 Create & Update Function

Note: `River Admin` is not extending the APIs of `django-river`. In order to see how your functions should look like please visit the django river function documentation itself

Note: In order to see this page, your user has to have `river.add_function` permission.

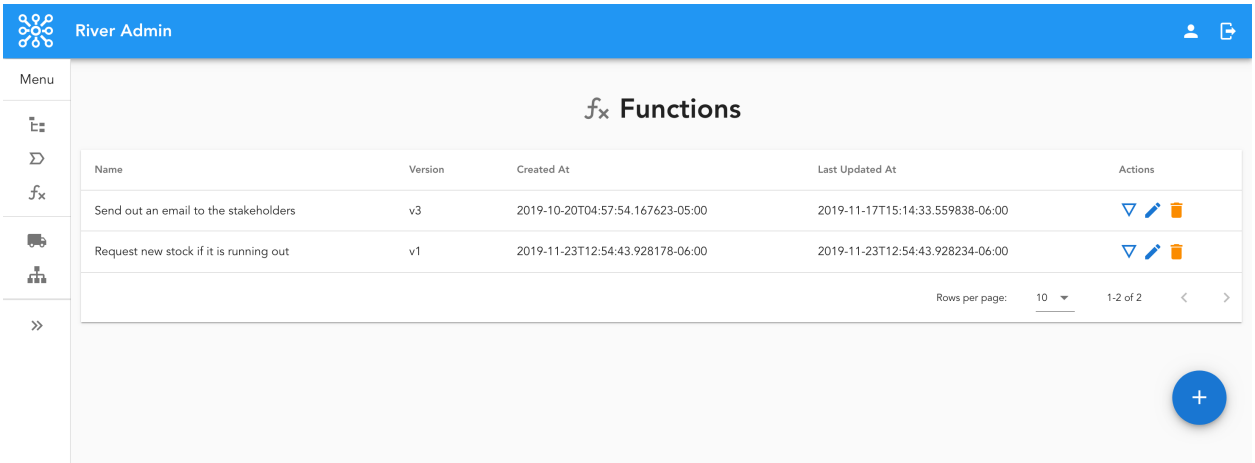


Note: Changes on the functions are applied to your hooks right away. It means that, next time a hook is kicked in with this function will be executed with the up to date version of the function.

4.4.2 List Functions

Note: In order to see this page, your user has to have `river.view_function` or `river.change_function` permissions in older version of `Django`.

On this page you can be navigated to the create page by clicking the button with the plus icon on the right bottom corner of the screen and viewing and editing the function pages by clicking the action button of the corresponding function. You can also delete a function on this page.



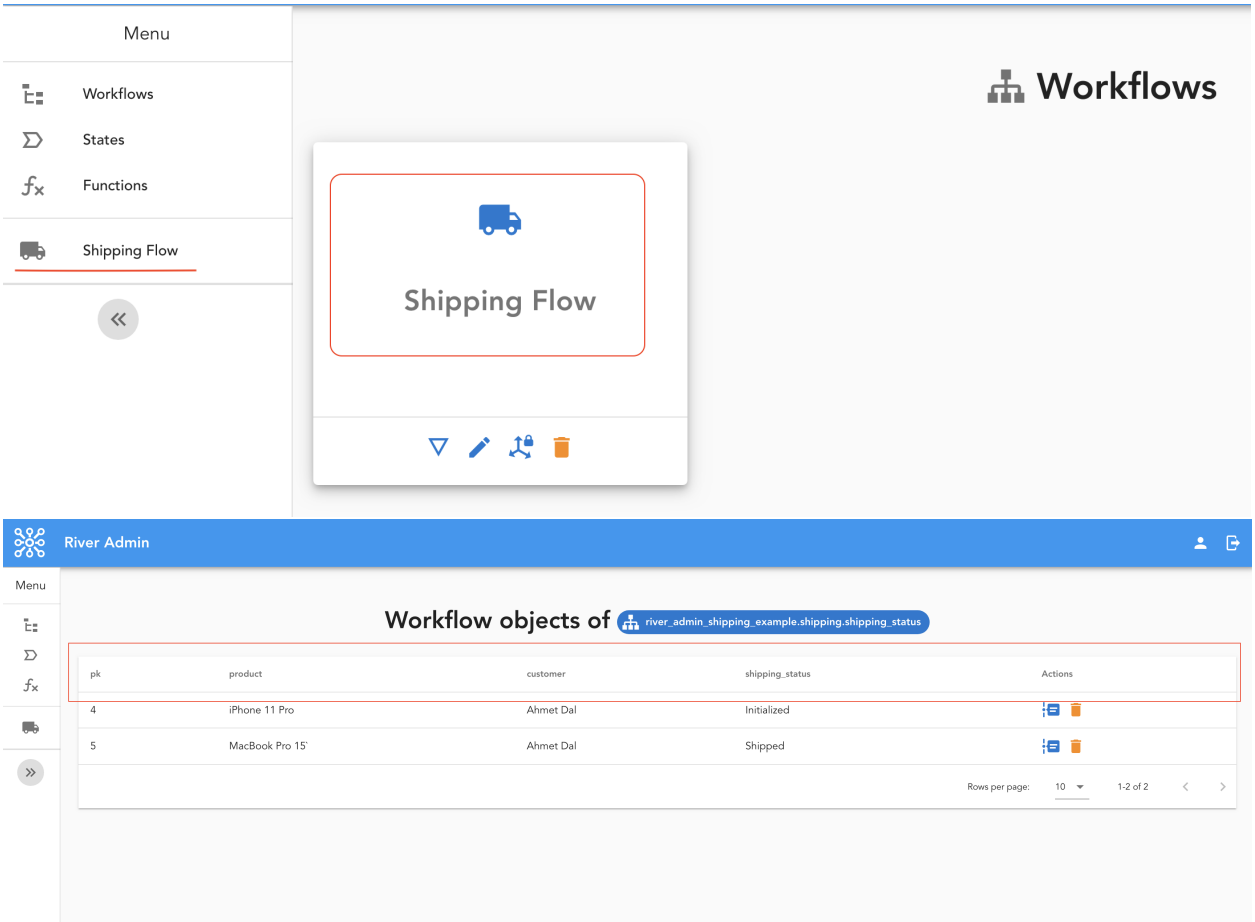
4.5 Custom Admin

`River Admin` is also meant to be functioning like any other django admin libraries but specificly for workflow operations. You can definitely be using `River Admin` as it comes but there are quite cool customizations you can do with `River Admin`. The way how to customize `River Admin` is very much like the way how you customize your `Django` model admin. We kept the same practice

```
# admin.py

import river_admin
from examples.shipping_example.models import Shipping

class ShippingRiverAdmin(river_admin.RiverAdmin):
    name = "Shipping Flow"
    icon = "mdi-truck"
    list_displays = ['pk', 'product', 'customer', 'shipping_status']

river_admin.site.register(Shipping, "shipping_status", ShippingRiverAdmin)
```

Note: `River Admin` users material icon sets. In order to see what icons you can use more please take a look at Material Design Icons. What ever you want to use from there just add `mdi-` prefix to the icon name.

Here is the output;



4.5.1 Method Field

`River Admin` supports custom field that can be fetched from a python method instead of the workflow object itself like in `Django` model admins.

```
# admin.py

import river_admin
from examples.shipping_example.models import Shipping

class ShippingRiverAdmin(river_admin.RiverAdmin):
    name = "Shipping Flow"
    icon = "mdi-truck"
    list_displays = ['custom_pk', 'product', 'customer', 'shipping_status']

    @classmethod
    def custom_pk(cls, obj):
        return "Primary Key: %d" % obj.pk


river_admin.site.register(Shipping, "shipping_status", ShippingRiverAdmin)
```

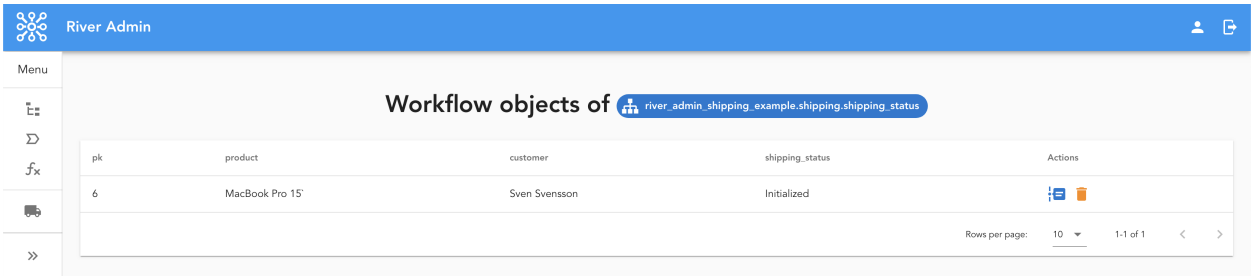
4.6 Workflow Objects

Workflow objects are active objects that are tied to the workflow specification you created. There are some more user interfaces for those workflow objects like the timeline of one and also customize the lifecycle of one with new hooks.

4.6.1 List Workflow Objects

Note: In order to see this page, your user has to have `river.view_workflow` or `river.change_workflow` in older version of `Django`.

After you are navigated by clicking your workflow icon on the left panel you will be run into a listing page where all of your workflow objects are listed. Then you can go to each of theirs timeline pages or you can delete the workflow objects.



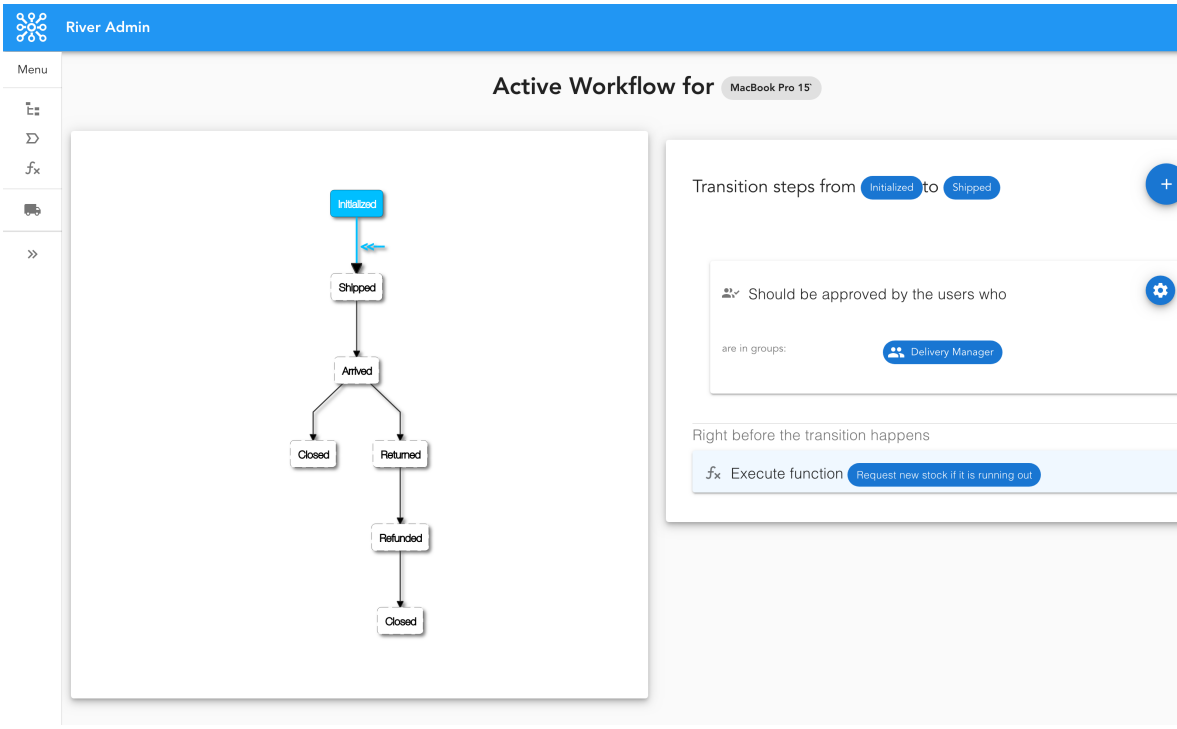
Note: To customize which columns of the workflow objects should show up on this interface, please look at *Custom Admin*.

4.6.2 Timeline

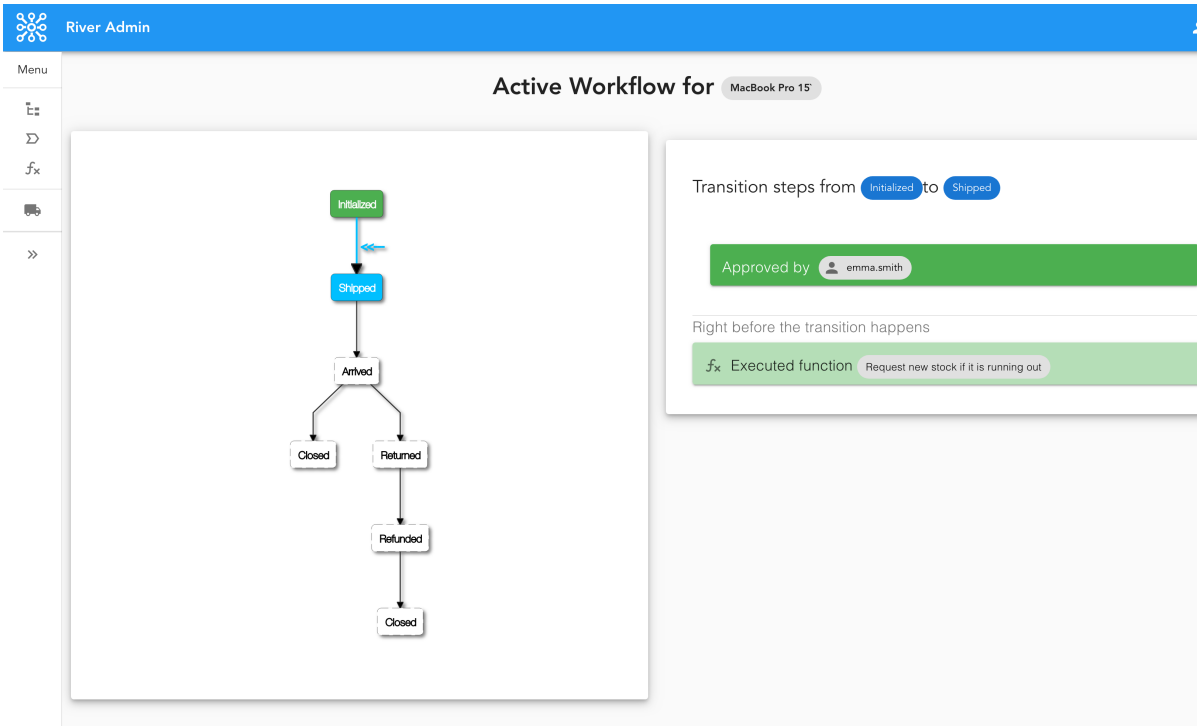
Each workflow object in `django-river` has a different instance of the the same lifecycle. The transitions, authorization rules and hooks are created out of the workflow specification once and special to the workflow object itself.

`River Admin` is showing the timeline of one workflow object that is consist of states, transitions, authorizations and hooks that scattered around in one useful user interface. On this page you can see what has happened so far along with what will possibly happen with the object. You can even add a transition and approval hooks tied to a particular object that is not for whole workflow object.

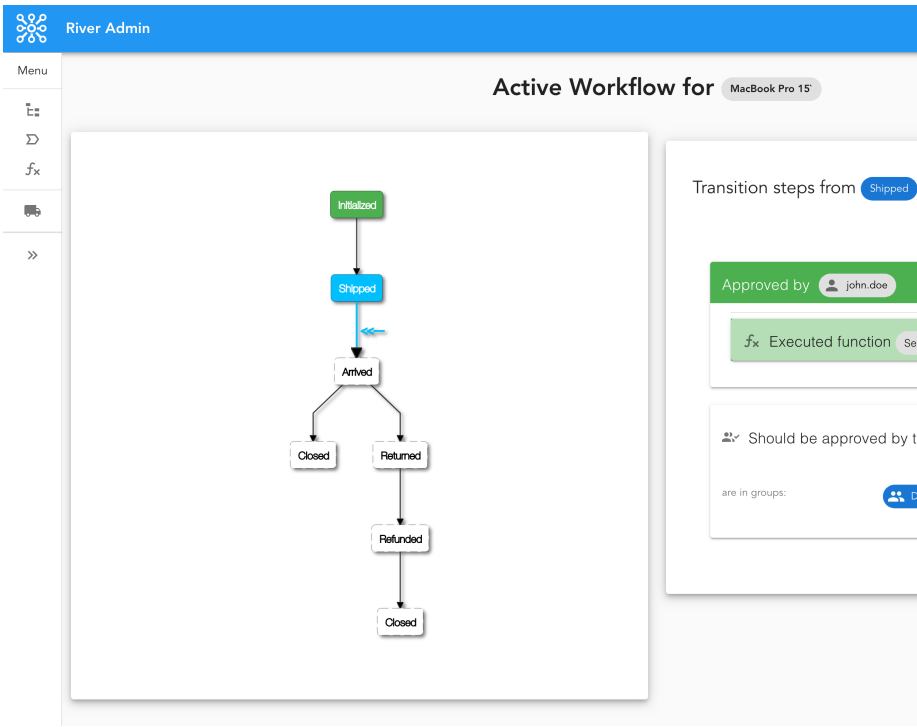
Here you can see an example of whole lifecycle of a workflow object;



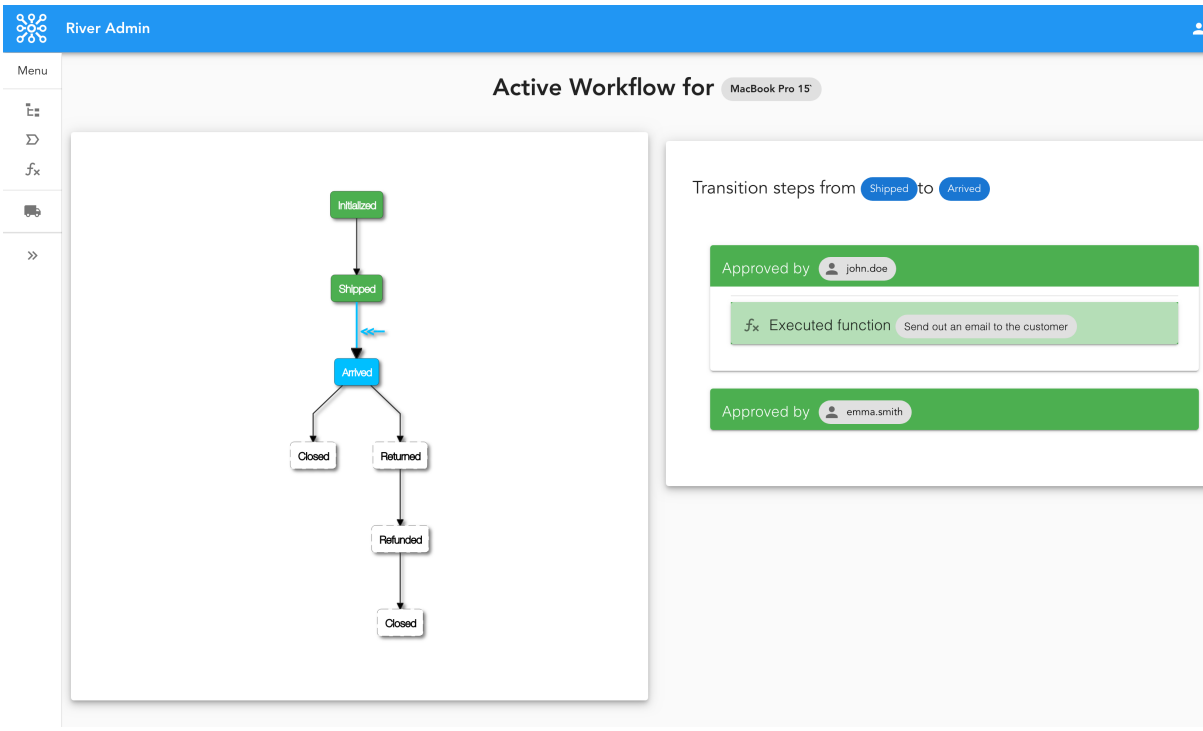
Current State: Initialized



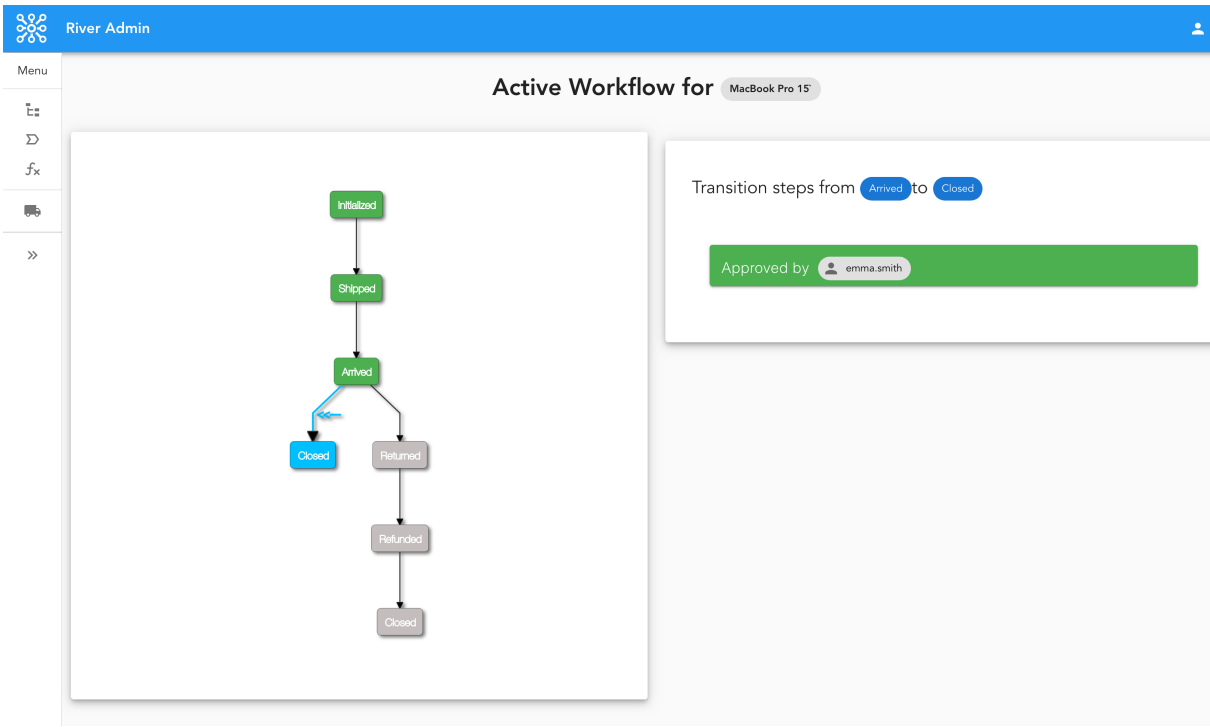
Current State: Shipped



Current State: Arrived Approved but still Shipped



Current State: Arrived



Current State: Closed

Colors

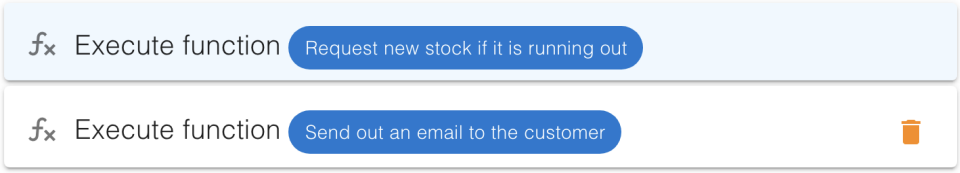
There are different type of indicator colors for different states like `current state` (Blue), `approved state` (Green), `possible state` (White with dashed border) or `impossible state` (Grey).

4.6.3 Object Hooks

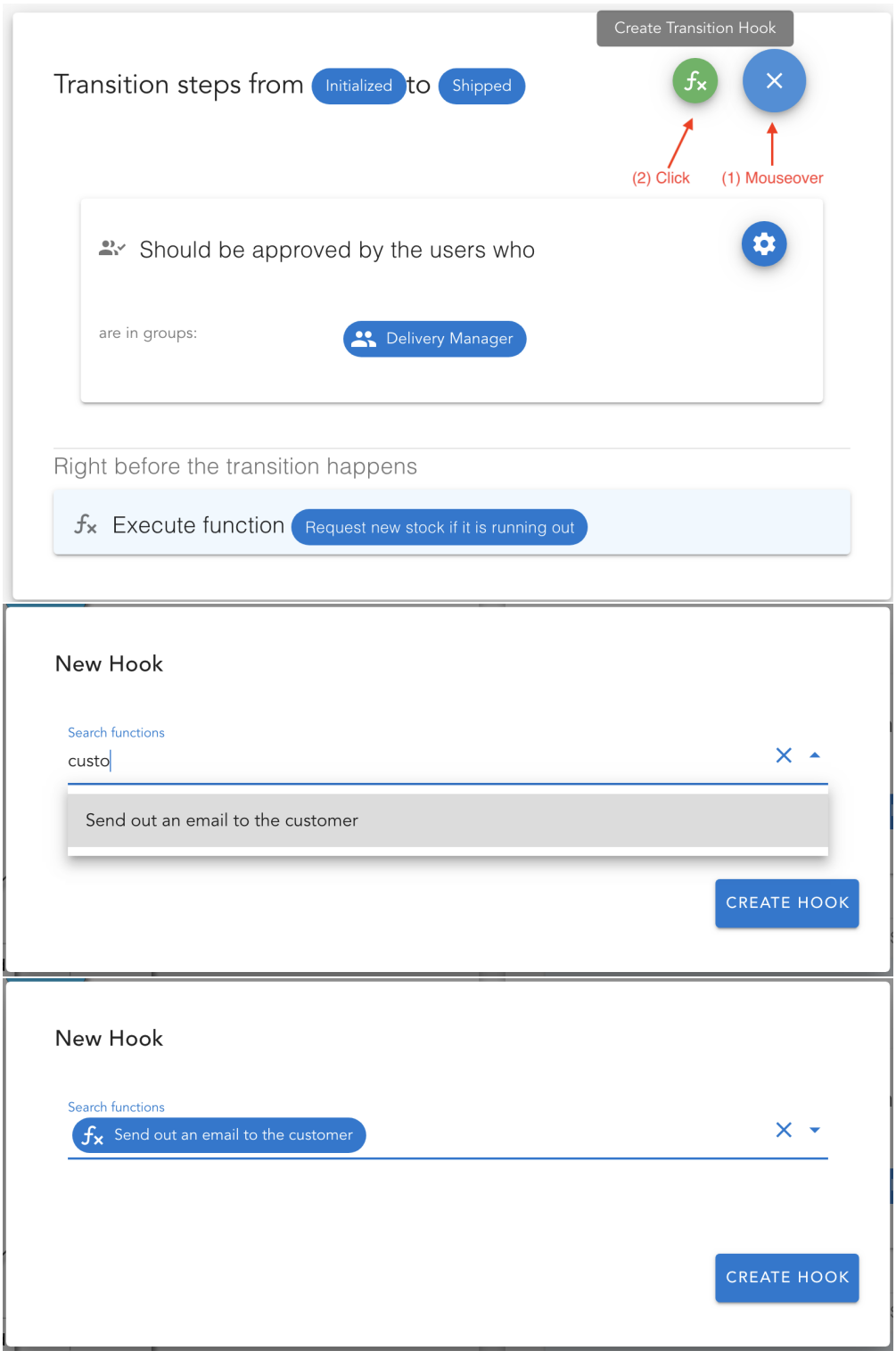
Note: What hooking is described in workflow level *Hooks*. So please visit there to get the idea of the hooks.

Object level hooking is tied to a specific object unlike workflow level hookings. It means the the hooks that you created for an object won't be kicked in for the other objects that are same kind.

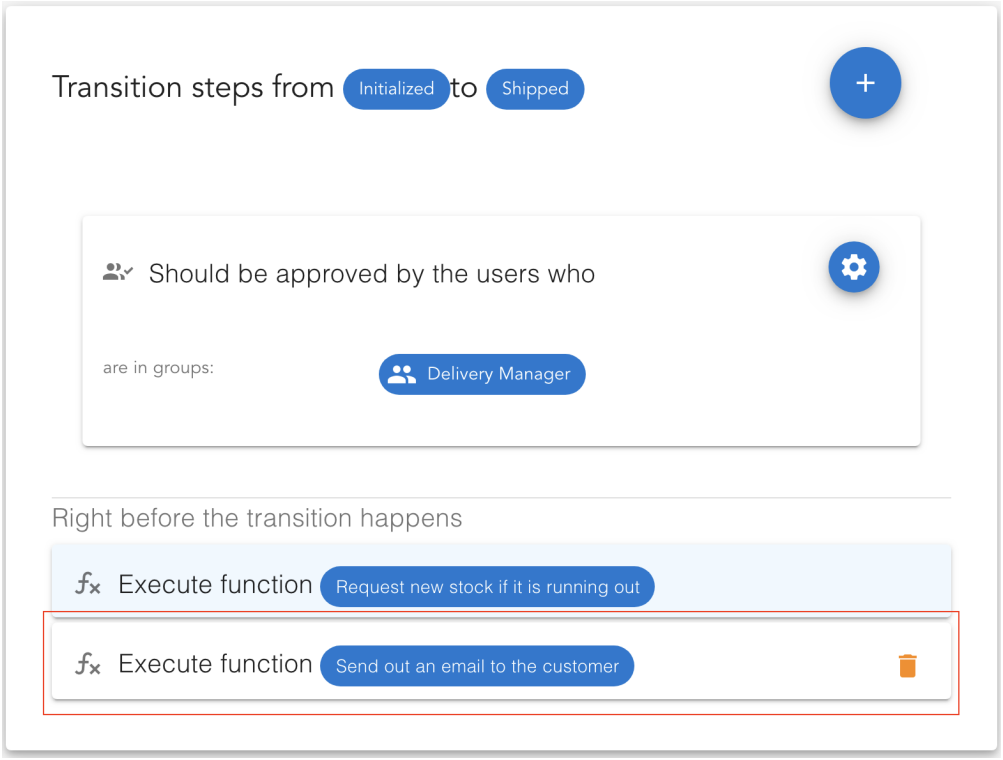
On the timeline page, those you created at the workflow level will be shown with `aliceblue` color and without a delete button since it is a general hook for all objects in the workflow. But you will see object level hooks with white color and a delete button as shown below;



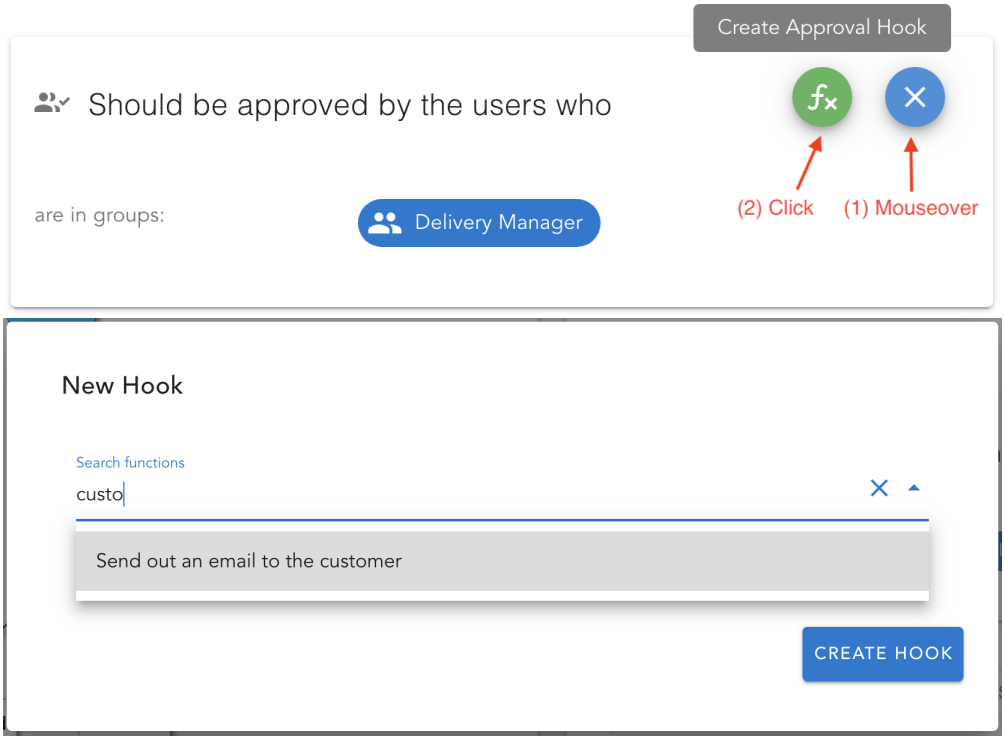
Create Transition Hooks

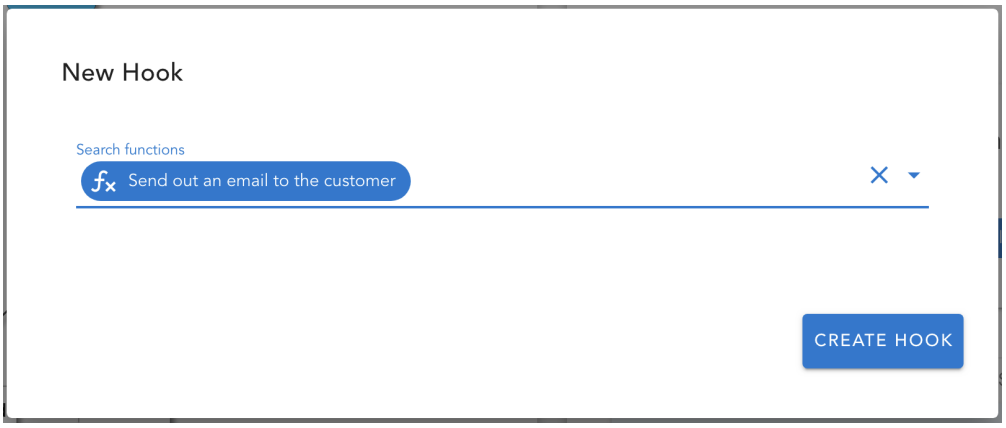


After you create, it should look like this;

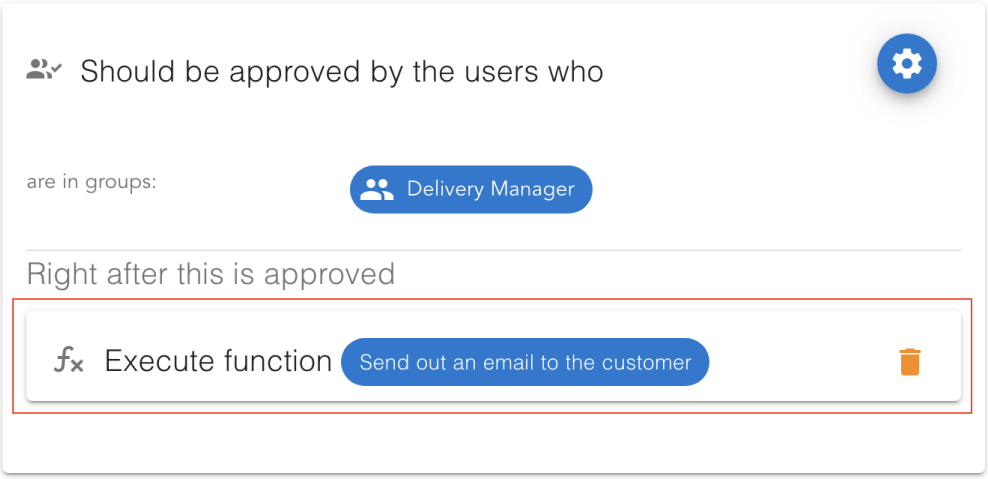


Create Approval Hooks





After you create, it should look like this;



4.7 Contribute

`River Admin` consists of two parts that are backend and ui. It is built with Django Rest Framework on the backend side whereas Vue on the front end side.

4.7.1 Rive Admin Backend

`River Admin` backend side is built with `Django` and Django Rest Framework. So you need `Django` development environment to be set up.

1. Install the dependencies

```
pip install -r requirements.txt
```

2. Install Tox to run the tests for all environments.

```
pip install tox
```

3. Install Twine and other necessary packages to upload packages to `PyPI`

```
pip install wheel setuptools twine
```

4. You are ready to develop the backend side now.

Development

```
python manage.py runserver
```

Tests

Tox is used on the backend side to automate `Python` & `Django` testing. Tests are under `river-admin/tets/`. Simply run

```
tox
```

To run it for a specific environment;

```
tox -e py34-dj2.1
```

4.7.2 River Admin UI

`River Admin` ui is built with Vue. So you need `Vue` development environment to be set up.

1. Install `node` & `npm`
2. Install `yarn` (Install Yarn)
3. Install dependencies

```
yarn install
```

Development

While developing the front end `Vue` app of `River Admin`, you can run it without building it and the server will auotmatically reload on any changes in the code. This is quite useful thing for fast feedback and debugging. One thing you should make sure before you run this, backend server is also running since it needs to call the backend

```
python manage.py runserver
```

```
yarn serve
```

Tests

UI tests are written with Jest javascript testing framework from Facebook. Tests are under `ui/tets/`. To run the tests simply;

```
yarn test:unit
```

To run a specific one;

```
yarn test:unit StateInput.spec.js
```

To run the tests with a fresh snapshot (to clean the snapshots);

```
yarn test:unit -u
```

Build

```
yarn build
```

The distribution folders of the `Vue` app are `river_admin/templates` and `river_admin/static`. The reason for that is because a `Django` app should contains all the `html` and `static` files under `templates` and `static` folders.

CHAPTER 5

Indices and tables

- genindex
- modindex
- search