

Payment Gateway User Guide



Setup

Follow the below steps to get the setup up and running.

1. Clone the Github repository.

```
git clone https://github.com/BharathChandraKS/PaymentGateway.git
```

2. Create a virtual environment.

```
virtualenv env -p python3
```

3. Activate virtualenv.

```
source env/bin/activate
```

4. Enter the project folder.

```
cd PaymentGateway
```

5. From the project directory run the below command to install all the necessary packages.

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

6. Create all the database tables by doing Django migrate.

```
python manage.py migrate
```

7. Create admin user or super user.

```
python manage.py createsuperuser --username 'admin' --email admin@email.com
```

Enter admin password when there are prompts.

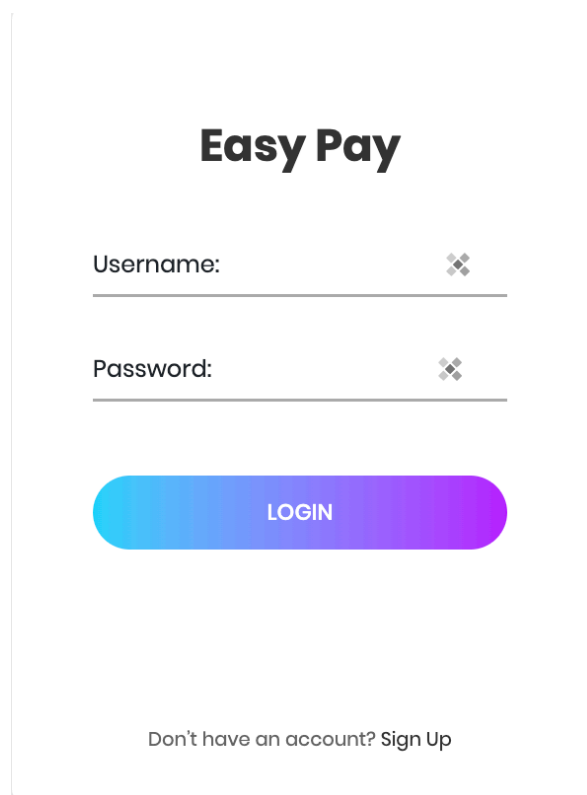
7. Start the Django server.

```
python manage.py runserver
```


Getting Started


After the application is running access the application through your browser using the URL <http://127.0.0.1:8000/>

The default page is the login page where you can login if you have already registered.



Since you have not already registered, click on the Sign Up button in the login page. On clicking Sign Up you will see the registration as shown below. Enter all the required fields.

Username:  Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.


Email address: 

Password: 

- Your password can't be too similar to your other personal information.
- Your password must contain at least 8 characters.
- Your password can't be a commonly used password.
- Your password can't be entirely numeric.

Password confirmation:  Enter the same password as before, for verification.

Company Name: 

Account Number: 

BSB:

Username and password are required to login to the application or to make API requests.
Company name, Account number and BSB are required to process payments.

Click submit button, upon successful registration you will enter the home page or welcome page.

[Easy Pay](#) [Logout](#)

Welcome

Company Name: Eddy Inc

User Name: eddy

Email: eddy@email.com

Account Number: 12345678

BSB: 345987

Here details specific to the Company who signed up is displayed.

Click on the logout button if you wish to logout, this will take to login in page incase you wish to login again.

[Easy Pay](#) [Logout](#)

For testing purposes let us signup one more company.

Username: Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

Email address:

Password:

- Your password can't be too similar to your other personal information.
- Your password must contain at least 8 characters.
- Your password can't be a commonly used password.
- Your password can't be entirely numeric.

Password confirmation: Enter the same password as before, for verification.

Company Name:

Account Number:

BSB:

Welcome

Company Name: Blair and Company

User Name: blair

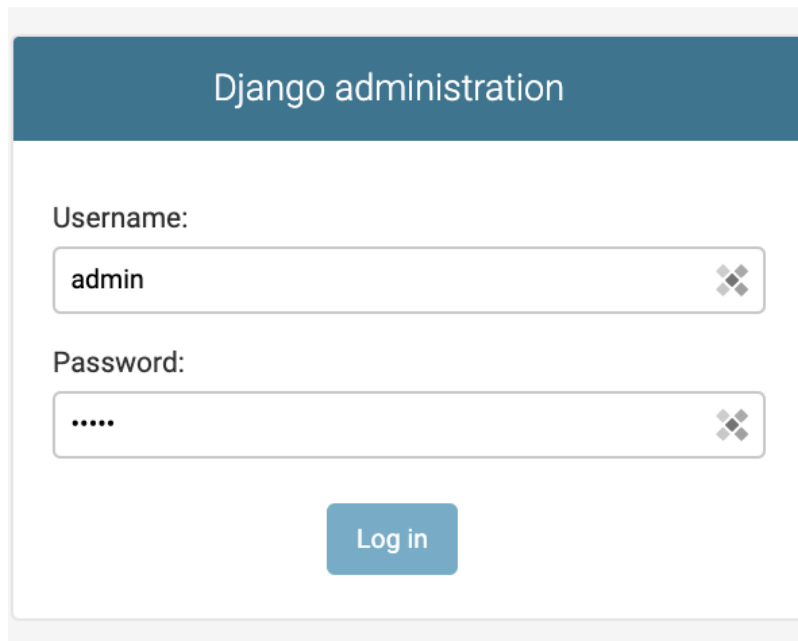
Email: blair@email.com

Account Number: 2452315652

BSB: 345876

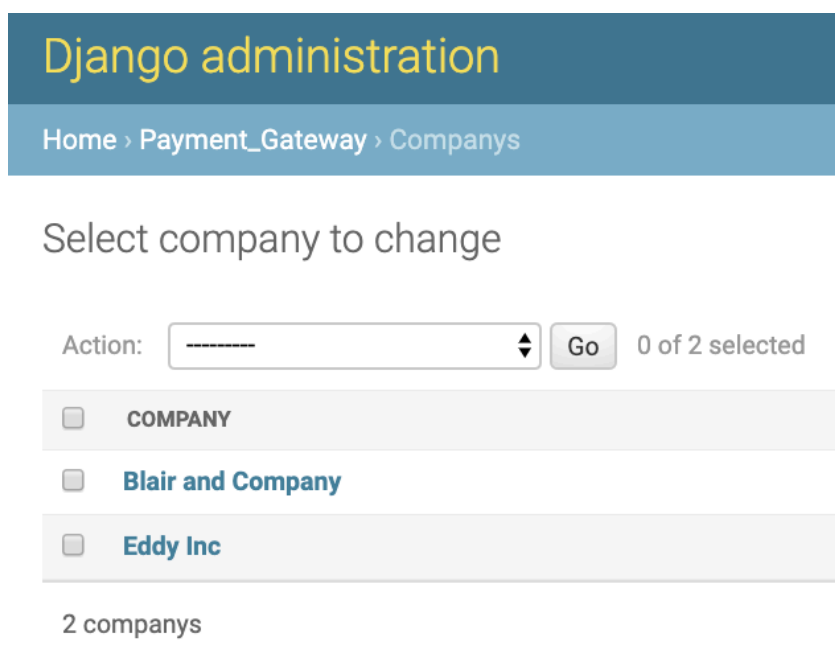
Admin Page

The application also has an admin backend which can be very useful to manage the application. To access admin page access the URL <http://127.0.0.1:8000/admin> using your browser and enter the username and password.



The screenshot shows the Django administration login interface. It features a dark blue header with the text "Django administration". Below the header, there are two input fields: "Username:" with the value "admin" and "Password:" with masked characters ".....". Each input field has a small icon on the right. Below the password field is a blue "Log in" button.

Note: Admin login and password were created during the setup state while creating the super user for the application



The screenshot shows the Django administration page for managing companies. The header is dark blue with the text "Django administration" in yellow. Below the header is a light blue breadcrumb trail: "Home > Payment_Gateway > Companys". The main content area has the heading "Select company to change". Below this is a table with two columns: "Action:" and "Go". The "Action:" column has a dropdown menu with "-----" selected. The "Go" column has a "Go" button. To the right of the "Go" button is the text "0 of 2 selected". Below the table are two rows of company names: "COMPANY" and "Blair and Company". Each row has a checkbox on the left. Below the table is the text "2 companys".

Here is how the Admin site looks after login.

Django administration

Site administration

| AUTH TOKEN | |
|------------|--|
| Tokens | + Add ✎ Change |

| AUTHENTICATION AND AUTHORIZATION | |
|----------------------------------|--|
| Users | + Add ✎ Change |

| PAYMENT_GATEWAY | |
|-----------------|--|
| Bank accounts | + Add ✎ Change |
| Companyys | + Add ✎ Change |
| Payments | + Add ✎ Change |

Click on company to view a list of registered companies.

Select company to change

Action:

Go

 0 of 2 selected

☐ COMPANY

☐ Blair and Company

☐ Eddy Inc

2 companyys

Click on Bank Accounts to view all the bank accounts in the system.

Django administration

Home > Payment_Gateway > Bank accounts

Select bank account to change

Action:

Go

 0 of 2 selected

☐ BANK ACCOUNT

☐ 2452315652

☐ 12345678

2 bank accounts

Django administration

WELCOME, ADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT

Home > Payment_Gateway > Bank accounts > 2452315652

Change bank account

HISTORY

Account:

2452315652

Bsb:

345876

Delete

Save and add another

Save and continue editing

SAVE

Click on payments to view a list of payments.

Django administration

WELCOME, ADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT

Home > Payment_Gateway > Payments

Select payment to change

ADD PAYMENT +

0 payments

As of now we do not have any payments in the system so here is how it can be created.
Let us create two payments for two different companies.

Django administration

WELCOME, **ADMIN** / [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > [Payment_Gateway](#) > [Payments](#) > Add payment

Add payment

Status:

created

Payment status

Company:

Blair and Company

Shopper:

Kevin

User who initiated the transaction

Amount:

69

Transaction amount

Save and add another

Save and continue editing

SAVE

Django administration

WELCOME, **ADMIN** / [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > [Payment_Gateway](#) > [Payments](#) > Add payment

Add payment

Status:

created

Payment status

Company:

Eddy Inc

Shopper:

Katie

User who initiated the transaction

Amount:

37

Transaction amount

Save and add another

Save and continue editing

SAVE

Here is the Payments page after creating two payments for two different companies.

Django administration

WELCOME, **ADMIN** / [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > [Payment_Gateway](#) > [Payments](#)

Select payment to change

ADD PAYMENT +

Action:

Go

0 of 2 selected

☐

PAYMENT

☐

Blair and Company

☐

Eddy Inc

2 payments

At any point modifications can be done from the admin portal as shown below.

The screenshot shows the Django administration interface. At the top, there's a blue header bar with 'Django administration' on the left and 'WELCOME, **ADMIN**. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)' on the right. Below the header, a breadcrumb trail reads 'Home > Payment_Gateway > Companys > Blair and Company'. The main content area is titled 'Change company' with a 'HISTORY' button on the right. The form contains three sections: 'User:' with a dropdown menu showing 'blair' and edit/add icons; 'Company name:' with a text input field containing 'Blair and Company' and a label 'Name of the company' below it; and 'Payment details:' with a dropdown menu showing '2452315652' and edit/add icons. At the bottom, there's a row of buttons: a red 'Delete' button, a blue 'Save and add another' button, a blue 'Save and continue editing' button, and a blue 'SAVE' button.

If you wish to logout you may click the logout button.



Security

Upon successful registration you can login to the application using the username and password.

Note: Passwords are hashed and NOT stored as clear text in the database.

Easy Pay

Username: eddy

Password:

LOGIN

Don't have an account? [Sign Up](#)

Note: Details of the other company are not displayed.

Easy Pay Logout

Welcome

Company Name: Eddy Inc
User Name: eddy
Email: eddy@email.com
Account Number: 12345678
BSB: 345987

APIs

One of the main requirements of the payment gateway is to enable APIs so that payments can be processed by the application.

API security

Payments cannot be processed by anyone, it has to be done only by the registered company upon providing valid credentials.

Below demonstrates that no operation can be performed without credentials.

```
curl -X GET http://127.0.0.1:8000/api/payment/  
{"detail":"Authentication credentials were not provided."}
```

API implements token based authentication. Which means that upon providing correct credentials a token is returned to the user by the application. This token is unique for to the user and needs to be used for any API transaction.

API login

```
curl -d "username=eddy&password=p@ssw0rd123" -X POST http://  
127.0.0.1:8000/api/login/  
  
{"token":"648e383858b006afe1c7304645bace7b041bd28d"}
```

Read operation

Using the token now access the APIs will return only that information specific to the user.

```
curl -X GET http://127.0.0.1:8000/api/payment/ -H 'Authorization: Token  
648e383858b006afe1c7304645bace7b041bd28d'  
  
{
```

```

    "count":1,
    "next":null,
    "previous":null,
    "results":[

        {

            "id":1,
            "status":"CREATED",
            "created_on":"2020-04-26T11:49:07.940625Z",
            "transacted_on":"2020-04-26T11:49:07.940654Z",
            "company":"Eddy Inc",
            "amount":37.0,
            "shopper":"Katie"
        }
    ]
}

```

Note: Please note that payments for Eddy Inc is displayed and payments for other companies are not returned.

Create Operation

Now let us create a new payment.

```
curl -d "amount=22&shopper=Shane" -X POST http://127.0.0.1:8000/api/payment/
```

```
{"detail":"Authentication credentials were not provided."}
```

Since the token was not provided the post failed with the message that credentials were not provided.

```
curl -d "amount=22&shopper=Shane" -X POST http://127.0.0.1:8000/api/payment/ -H 'Authorization: Token 648e383858b006afe1c7304645bace7b041bd28d'
```

```

{

    "id":3,

```

```

    "status":"CREATED",
    "created_on":"2020-04-26T12:10:34.911580Z",
    "transacted_on":"2020-04-26T12:10:34.911611Z",
    "company":"Eddy Inc",
    "amount":22.0,
    "shopper":"Shane"
  }

```

Update operation

Now let us update a transaction which we just created.

```
curl -d "amount=92&shopper=Murf" -X PUT http://127.0.0.1:8000/api/payment/3/
```

```
{"detail":"Authentication credentials were not provided."}
```

Fails again since credentials were not provided.

```
curl -d "amount=92&shopper=Murf" -X PUT http://127.0.0.1:8000/api/payment/3/ -H 'Authorization: Token 648e383858b006afe1c7304645bace7b041bd28d'
```

```

{
  "id":3,
  "status":"CREATED",
  "created_on":"2020-04-26T12:10:34.911580Z",
  "transacted_on":"2020-04-26T12:25:08.514546Z",
  "company":"Eddy Inc",
  "amount":92.0,
  "shopper":"Murf"
}

```

Notice that only transacted on time has changed and created on time did not change.

NOTE: Status and Company cannot be changed by the Post or Update operation, as they are updated based on Bank transaction status. However, it can be updated by the Admin backed if required.

Polling

If required the company's application can do a poll to check if the transaction status. Credentials are required for this API too.

```
curl -X GET http://127.0.0.1:8000/api/payment/3/
```

```
{"detail": "Authentication credentials were not provided."}
```

```
curl -X GET http://127.0.0.1:8000/api/payment/3/ -H 'Authorization: Token  
648e383858b006afe1c7304645bace7b041bd28d'
```

```
{  
  
  "id":3,  
  "status": "SUCCESSFUL",  
  "created_on": "2020-04-26T12:10:34.911580Z",  
  "transacted_on": "2020-04-26T12:36:40.689864Z",  
  "company": "Eddy Inc",  
  "amount": 92.0,  
  "shopper": "Murf"  
}
```

We have changed the status using the admin, but assume that Bank has updated the status to successful.

Note that transacted_on has again changed since there was an updated while created on remains as the original time.

Delete transaction

If required the payment can also be deleted upon providing the correct credentials.

```
curl -X DELETE http://127.0.0.1:8000/api/payment/3/  
{"detail": "Authentication credentials were not provided."}
```



```
Bharaths-MBP:PaymentGateway bharathchandra$ curl -X GET http://  
127.0.0.1:8000/api/payment/3/ -H 'Authorization: Token  
648e383858b006afe1c7304645bace7b041bd28d'  
{"detail":"Not found."}
```

#####