

How to get data from MySQL in Django View with Models

In this article, you will learn how to retrieve data from MySQL database table using Django.

Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Django is compatible with almost all popular RDBMS and NoSQL type databases, like - MySQL, PostgreSQL, MongoDB, Oracle. As of popularity and simplicity, MySQL is most commonly used back-end database for Django. It supports MySQL 5.6 and higher.

These are the step by step process for MySQL connection with Django and process to fetch data and display in view template.

Install MySQL

MySQL download is available at it's official site www.mysql.com/downloads/. Once the installer package is downloaded, unzip it, run the setup.exe and follows the installation process. By default, it will be installed under 'C:\MySQL' directory.

Once the process is completed, make sure the success installation on command prompt. For this, go to location of mysqld server which is in c:\mysql\bin and type -

```
mysqld --console
```

You can also use MySQL of the another server, like- if you have installed WAMP or XAMPP server on your system, you can use MySQL of that server.

Django Project

Suppose, we have a project name 'demo' -

```
(env) c:\python37\Scripts\projects\demo>
```

The MySQL connection with Django requires the installation of MySQL client. Let's run the following command -

```
(env) c:\python37\Scripts\projects\school>pip install mysqlclient
Collecting mysqlclient
  Downloading https://files.pythonhosted.org/packages/5d/b3/a753b836eab49c865651e
    | ████████████████████████████████████████████████████████████████████████████ | 266kB 726kB/s
Installing collected packages: mysqlclient
Successfully installed mysqlclient-1.4.6
```

If, you have faced any error while installation of MySQL client. You can download and try to install the wheel file according to your system OS bits and python version from here -

<http://qypyi.qpython.org/simple/mysqlclient/>

Process to get MySQL data

Create a Model

Django provides Models, which represents a table or collection of database. It is basically a class whose every attribute is the field of the table. Open 'models.py' and put the following code. The database table 'students' will be created automatically by the following code.

```
from django.db import connections
from django.db import models
```

```
# Create your models here.
```

```
class Student(models.Model):  
    roll = models.CharField(max_length=100)  
    sclass = models.CharField(max_length=100)  
    fname = models.CharField(max_length=100)  
    lname = models.CharField(max_length=100)  
class Meta:  
    db_table = "students"
```

Suppose, we have the following records in 'students' table. That, we will have to fetch and display in HTML template using Django.

```
INSERT INTO `students` (`id`, `roll`, `sclass`, `fname`, `lname`) VALUES  
(1, '12', '1A', 'Priska', 'Kashyap'),  
(2, '11', '2A', 'Aditi', 'Vyas');
```

Create a view

Open 'views.py' and put the following code. Here, we have first import the 'render' and 'redirect' modules and then we have import the database table we are working with from the 'models.py' file. Then, we retrieve all objects from the students database table and stores it in the 'students' variable. So that, we can render this to a HTML template file 'show.html' -

```
from django.shortcuts import render,redirect  
from demoapp.models import Student  
  
# Create your views here.  
  
def show(request):  
    students = Student.objects.all()  
    return render(request,"show.html",{'student':students})
```

Create a template -

Now, create a new directory 'templates' in 'demoapp' folder and an HTML file 'show.html'

and put the following code -

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Django CRUD Operations</title>
  <meta charset="utf-8">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
<div class="container">
<table class="table table-striped">
  <thead>
    <tr>
      <th>Student ID</th>
      <th>Roll</th>
      <th>Class</th>
      <th>First Name</th>
      <th>Last Name</th>
    </tr>
  </thead>
  <tbody>
    {% for stud in student %}
    <tr>
      <td>{{stud.id}}</td>
      <td>{{stud.roll}}</td>
      <td>{{stud.sclass}}</td>
      <td>{{stud.fname}}</td>
      <td>{{stud.lname}}</td>
    </tr>
    {% endfor %}
  </tbody>
</table>
</div>
</body>
</html>
```

Change settings in 'settings.py'

Django provides default database settings to 'sqlite3', so we will have to change this settings. Here, we have changed the 'ENGINE' setting for MySQL and written the database name in 'NAME', username in 'USER', database password in 'PASSWORD', hostname in 'HOST' and portname in 'PORT' -

```
DATABASES = {  
    'default': {  
        'ENGINE': 'django.db.backends.mysql',  
        'NAME': 'school',  
        'USER': 'root',  
        'PASSWORD': '',  
        'HOST': 'localhost',  
        'PORT': '3306'  
    }  
}
```

Change settings in 'urls.py'

The 'urls.py' page contains all the particular paths for routing pages. Put the following code in 'urls.py' -

```
from django.contrib import admin  
from django.urls import path  
from demoapp import views  
  
urlpatterns = [  
    path('admin/', admin.site.urls),  
    path('show', views.show),  
]
```

Run the project

Open the command prompt and go to your project directory and activate the virtualenv.

```
c:\python37\Scripts\projects\env\Scripts>activate  
(env) c:\python37\Scripts\projects\env\Scripts>cd ..
```

To know more in details about 'virtualenv', go to our article -

[Windows commands to Create and Run first Django app](#)

Now, let's migrate the following project -

```
(env) c:\python37\Scripts\projects\demo>python manage.py migrate
```

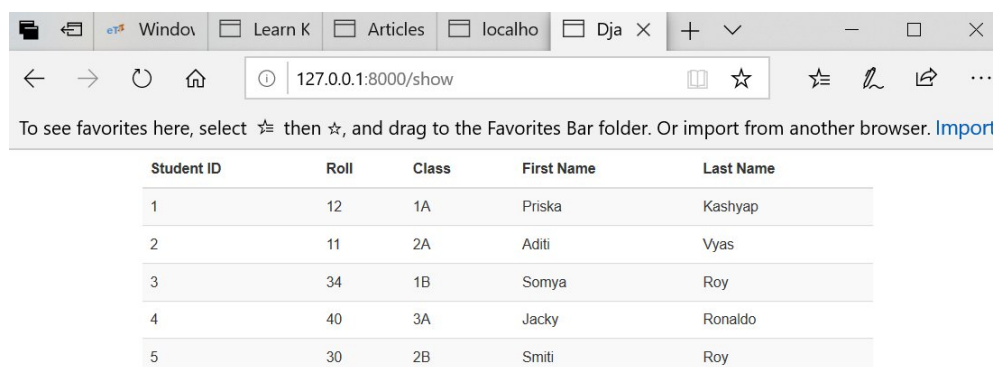
Once the migration is done, use the following command to run the server -

```
(env) c:\python37\Scripts\projects\demo>python manage.py runserver
```

It returns messages something like this -

```
January 09, 2020 - 14:04:41
Django version 3.0.2, using settings 'demo.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CTRL-BREAK.
```

Open the 'http://127.0.0.1:8000/show' on the browser. It shows the data as follows -



The screenshot shows a web browser window with the address bar displaying '127.0.0.1:8000/show'. The browser tabs include 'Learn K', 'Articles', 'localho', and 'Dja'. Below the address bar, there is a message: 'To see favorites here, select ☆ then ☆, and drag to the Favorites Bar folder. Or import from another browser. [Import](#)'. The main content area displays a table with the following data:

Student ID	Roll	Class	First Name	Last Name
1	12	1A	Priska	Kashyap
2	11	2A	Aditi	Vyas
3	34	1B	Somya	Roy
4	40	3A	Jacky	Ronaldo
5	30	2B	Smiti	Roy

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