

Connect Django Project to MySQL

1 - Install django, mysqlclient

```
pip install django
```

```
pip install mysqlclient
```

After installing these requirements, you need to connect Django project to the new database.

2 - Create Database and Insert Data

We should create the schema in database and then run below command

```
python manage.py migrate
```

after running this commad all the tables will create inside our database.

3 - Set username and password in **setting.py**

Into the config > setting.py and to the DATABASE section, set the database config like this format:

you need to change the <<username>> and <<password>> of this section to your own information

```
DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.mysql',
        'NAME': 'learn',
        'USER': 'root',
        'PASSWORD': '123123123',
        'HOST': 'localhost',
        'PORT': '',
    }
}
```

After doing above steps Django is connected to the database.

4- Adding requirement tables for log in to the Django-admin:

by running migrate command django automatically create its requirements table into database:

```
python manage.py migrate
```

Now the Django's requirement tables are created and we should create a **superuser** to can Log in to the Django admin:

```
python manage.py createsuperuser
```

and fill the requirement with fake info. and then log in with that info.

Explain Queries

All Queries Are in all > admin.py

1 - SELECT all Student that their mark >= 10:

```
Participated.objects.raw("""
        SELECT stu_id
        FROM participated
        WHERE mark >= 10
        """)
```

2 - SELECT all Student that their mark < 10:

```
Participated.objects.raw("""
        SELECT stu_id
        FROM participated
        WHERE mark < 10
        """)
```

3 - SELECT all Student that their balance > 70: We should get balance from Students table so we should join participated and students to get access balance:

```
Participated.objects.raw("""
    SELECT stu_id
    FROM participated
    natural join students
    WHERE balance > 70
    """)
```

4 - UPDATE Mark in Participated table:

```
with connection.cursor() as c:
    c.execute("""
    UPDATE participated
    SET mark = 9.99
    WHERE mark IS NOT NULL
        AND mark < 10
    """)
```

5 - UPDATE Mark in Participated table:

```
with connection.cursor() as c:
    c.execute("""
    UPDATE participated
    SET mark = mark + 1
    WHERE mark BETWEEN 10 AND 19
    """)
```

6 - SELECT username of Students table:

```
def sql_username(self, obj):
    p = Students.objects.raw(f"""
    SELECT *
    FROM students
    Where stu_id = '{obj.stu_id}'
    limit 1
    """)[0]
    return f"{p.username}"
```

In admin.py also you can see more similar example.

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