Django + MySQL Setup using PyMySQL

Step 1: Install PyMySQL

Outside Virtual Environment:

- pip install PyMySQL==1.1.1

Inside Virtual Environment:

- python -m pip install PyMySQL==1.1.1

Step 2: Configure PyMySQL for Django

In your __init__.py file (inside your project folder):

```
import pymysql
pymysql.install_as_MySQLdb()
```

Step 3: Connect MySQL Shell

1. Open MySQL shell: mysqlsh

2. Switch to SQL mode: \sql

3. Connect to MySQL server: \connect --mysql root@localhost

Step 4: Configure Database in Django

Update DATABASES in settings.py:

```
DATABASES = {
  "default": {
    "ENGINE": "django.db.backends.mysql",
    "NAME": "mydb",
    "USER": "root",
    "PASSWORD": "your_root_password",
    "HOST": "127.0.0.1",
    "PORT": "3306",
    "OPTIONS": {
      "charset": "utf8mb4",
      "init_command": "SET sql_mode='STRICT_TRANS_TABLES'",
    },
  }
```

}

Step 5: Apply Migrations

Run this command:

- python manage.py migrate

Step 6: Verify Database Connection

```
python manage.py shell -c "from django.db import connection; c=connection.cursor();
c.execute('SELECT DATABASE(), VERSION()'); print(c.fetchone())"
```

Step 7: Create a Health Check API (Optional)

```
from django.http import JsonResponse
from django.db import connection

def health(request):
  try:
    with connection.cursor() as c:
      c.execute("SELECT 1")
    return JsonResponse({"status": "ok", "db": "connected"})
  except Exception as e:
    return JsonResponse({"status": "error", "db": str(e)}, status=500)
```