KAZAKH BRITISH TECHNICAL UNIVERSITY

WEB DEVELOPMENT

Lesson 12

Building REST APIs With Django

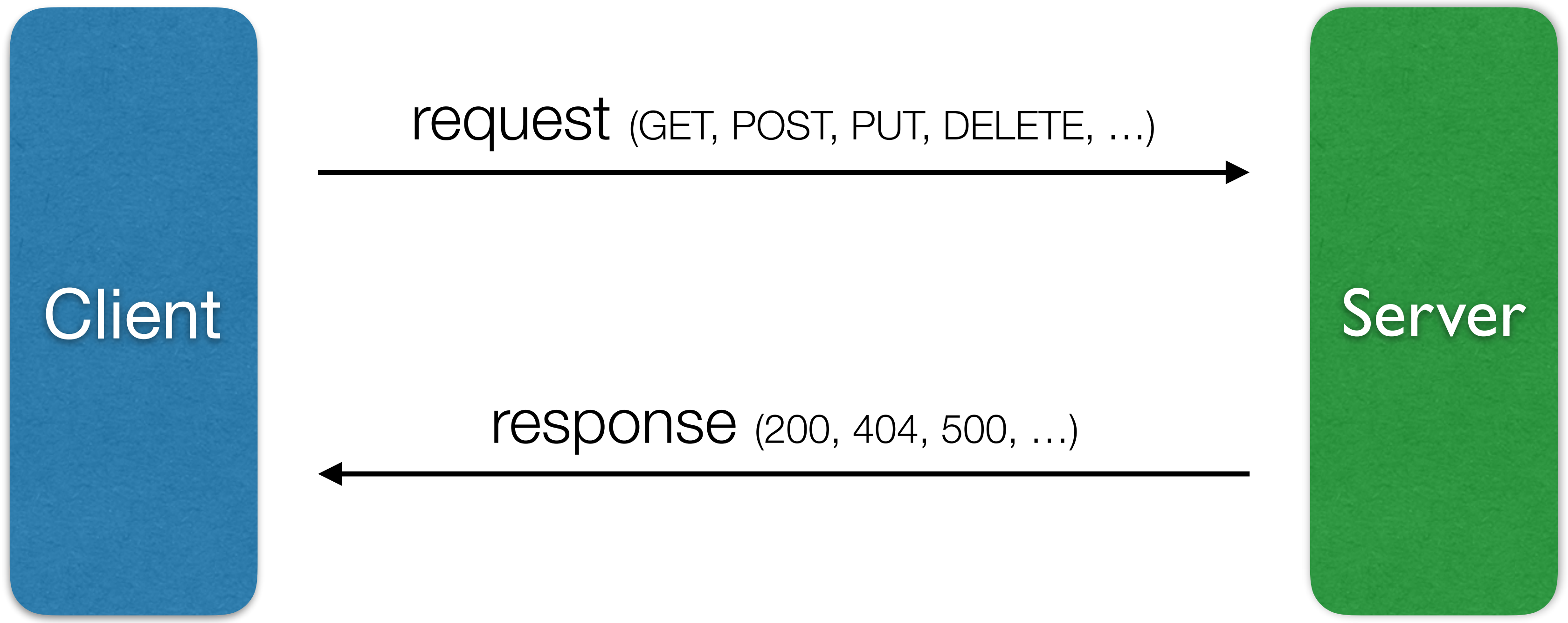
What is REST API?

Representational State Transfer (REST) Application Programming Interface (API)

HTTP method for each action

Purpose of Request	HTTP Method	Rough SQL equivalent
Create a new resource	POST	INSERT
Read an existing resource	GET	SELECT
Update an existing resource	PUT	UPDATE
Update part of an existing resource	PATCH	UPDATE
Delete an existing resource	DELETE	DELETE
Returns same HTTP headers as GET, but no body content	HEAD	
Return the supported HTTP methods for the given URL	OPTIONS	

Client Server Communication


Client
request (GET, POST, PUT, DELETE, …)
response (200, 404, 500, …)
Server

Postman

https://www.getpostman.com/

Example with JSON response

Model object to JSON

CRUD API

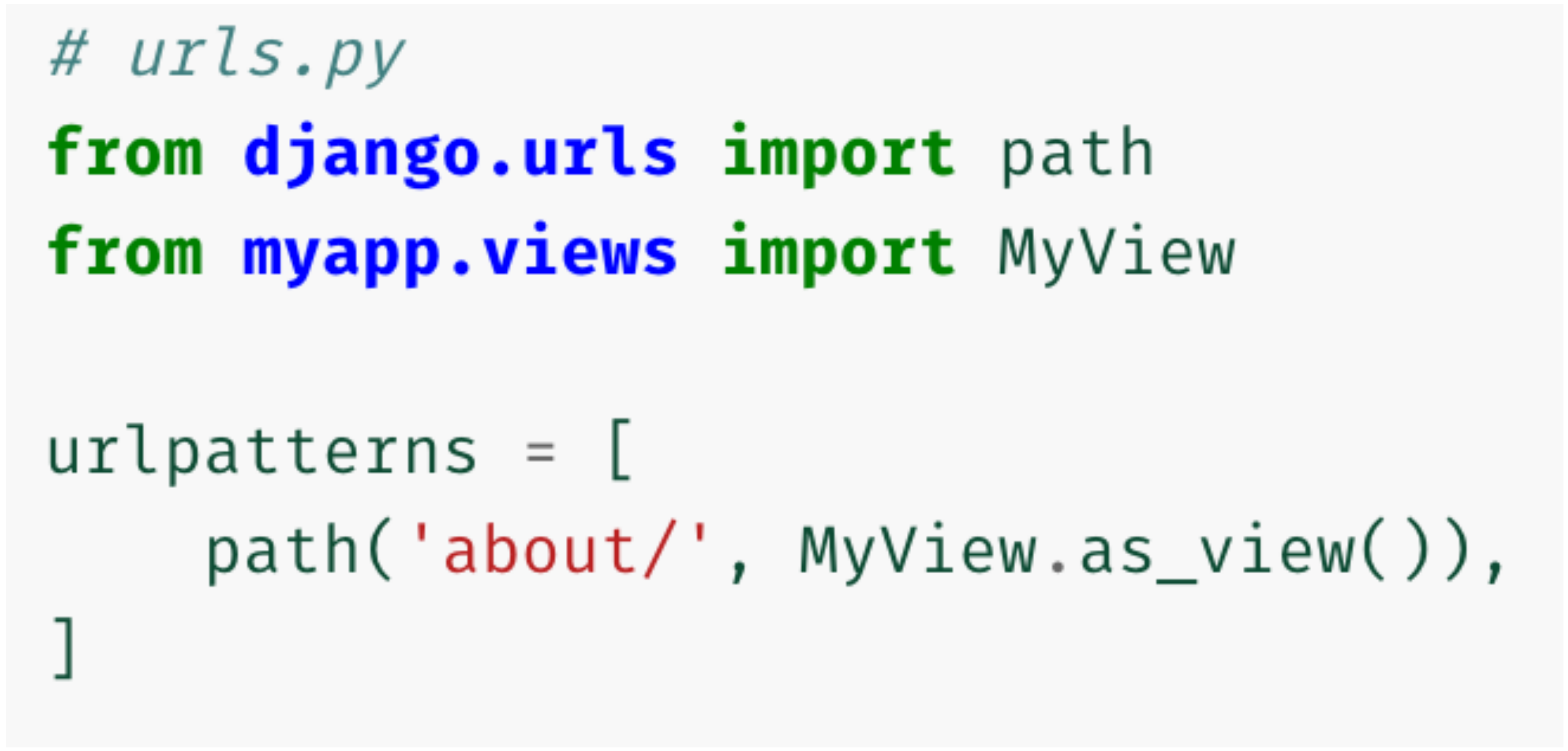
Function Based View

```python
from django.http import HttpResponse

def my_view(request):
    if request.method == 'GET':
        # <view logic>
        return HttpResponse('result')
```

Class Based View

```python
from django.http import HttpResponse
from django.views import View

class MyView(View):
    def get(self, request):
        # <view logic>
        return HttpResponse('result')
```

Class Based View



```python
# urls.py
from django.urls import path
from myapp.views import MyView

urlpatterns = [
    path('about/', MyView.as_view()),
]
```

django REST framework

https://www.django-rest-framework.org

DRF

- DRF leans heavily on object-oriented design and is designed to be easily extensible
- DRF builds directly off of Django CBVs. If you understand CBVs, DRF's design feels like an understandable extension of Django
- The serializer system is extremely powerful, but can be trivially ignored or replaced
- Authentication and Authorization are covered in a powerful, extendable way
- If you really want to use FBVs for your API, DRF has you covered there too

Few notes

- If you're implementing a read-only API, you might only need to implement GET methods.
- If you're implementing a read-write API, you should use the GET, POST, PUT, and DELETE methods.
- Relying on just GET and POST for all actions can be frustrating pattern for API users.
- By definition, GET, PUT, and DELETE are idempotent. POST and PATCH are not.
- PATCH is often not implemented, but it's a good idea to implement it if your API supports PUT requests.
- Django Rest Framework is designed around these methods, understand them and DRF itself becomes easier to understand.

Serialization and Deserialization

Creating a Serializer class

Using ModelSerializers

Questions?