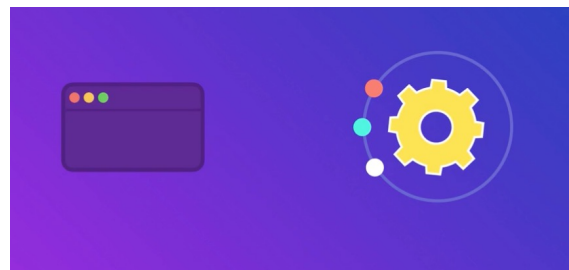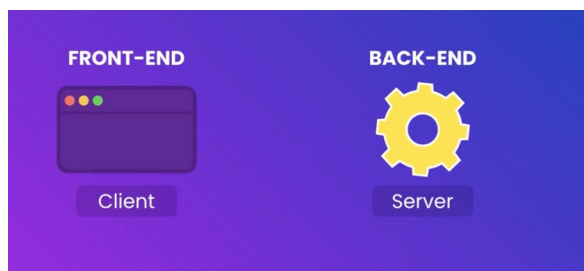# Building RESTful APIs
Django REST Framework

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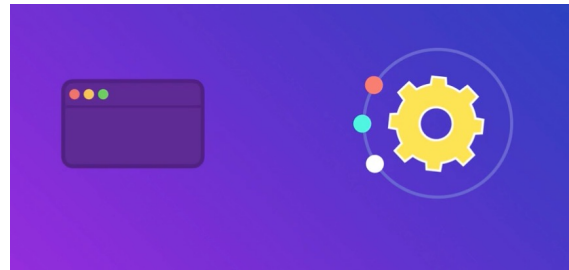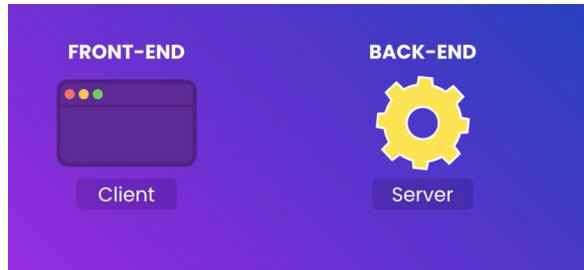
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What is an API?

API = Application Programming Interface
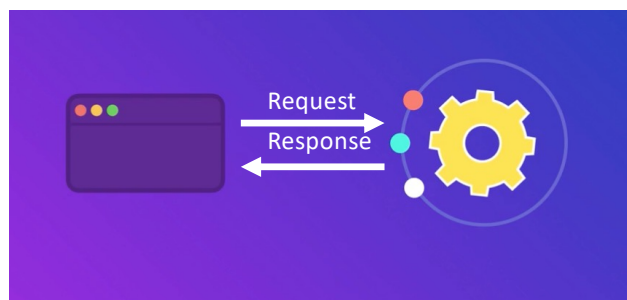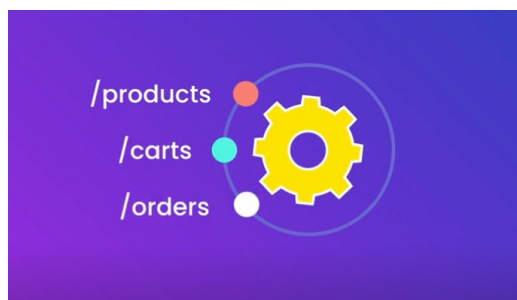
What is an API?

API = Application Programming Interface

# What is an API?

API = Application Programming Interface

What is RESTful?

- **Re**presentation **S**tate **T**ransfer
- Rules for client and server to communicate over the web
- APIs that conform to these rules are called "RESTful API"
  - https://stackoverflow.blog/2020/03/02/best-practices-for-rest-api-design/
  - https://www.freecodecamp.org/news/rest-api-best-practices-rest-endpoint-design-examples/
- 3 important concepts: Resources, Resources Representations, HTTP Methods

RESTful - Resources

- Clients can access the resources through URL
- Conform to a specific URL patterns
  - All products -> http://mystore.com/products
  - A specific product (ID:1) -> http://mystore.com/products/1
  - All reviews of a specific product: http://mystore.com/products/1/reviews
  - A specific review of a specific product (product ID: 1) http://mystore.com/products/1/reviews/1
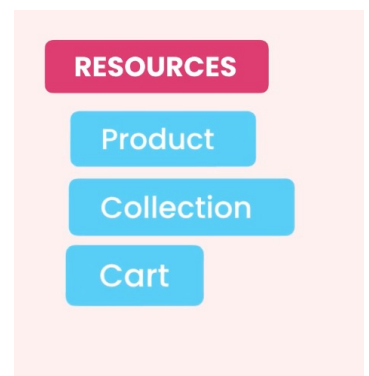
RESTful – Resource Representations

- Representations of the Resources when we return from the server

- Can support multiple representations. Client tells the server what representation does it want?

- Most popular in Web Development today is JSON (JavaScript Object Notation)

REPRESENTATIONS
- HTML
- XML
- JSON

RESTful – JSON Representations

```
{
        "name": "Kavin",
        "age": 39,
        "is_verified": true,
        "employer": { },
        "interests": []
}
```

RESTful – HTTP Methods

- Each endpoint can support various kinds of operations such as can only read data or can create and read data etc.
- With HTTP Methods, client can tell the server what does it want to do with the resources:
  - GET -> get a single or a collection of resources
  - POST -> create a resource
  - PUT -> update the resource
  - PATCH -> update part of the resource
  - DELETE -> delete the resource

HTTP METHODS

GET

POST

PUT

PATCH

DELETE

RESTful – HTTP Methods

Creating a Product

POST /products

```
{
    "title": "…",
    "price": 10
}
```

Updating a Product

PATCH /products/1

```
{
    "title": "…",
    "price": 10
}
```
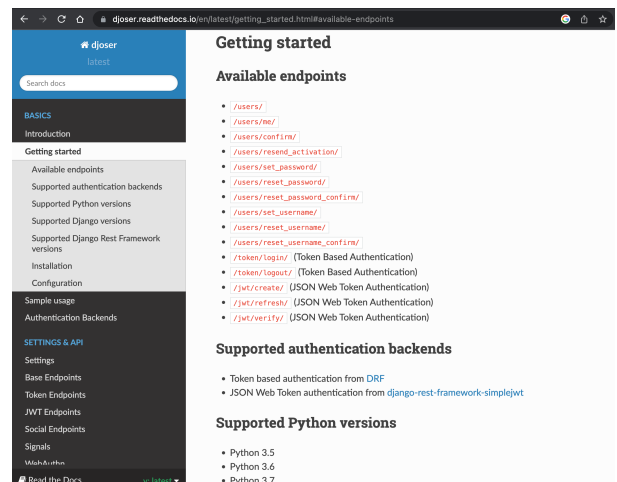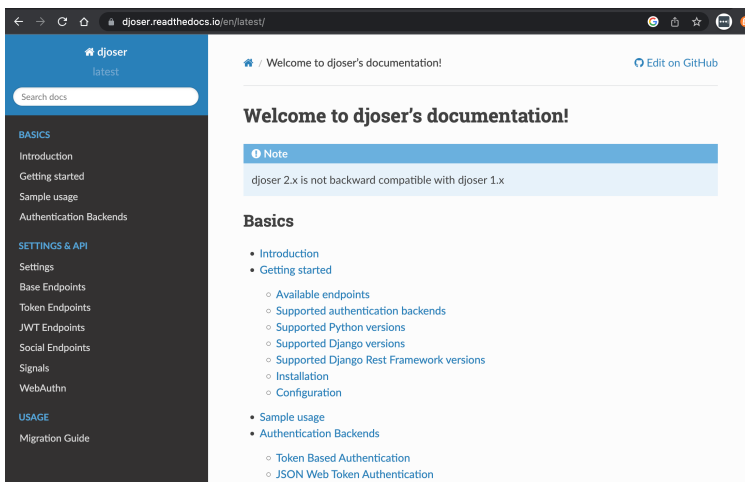
Deleting a Product

DELETE /products/1

Installing Django REST Framework

- 1. Install the library
    - >> pipenv install djangorestframework
- 2. Add to the list of INSTALLED apps
    - INSTALLED_APPS = [..., 'rest_framework', ...]

Installed Djoser for helping with authentication

https://djoser.readthedocs.io/en/latest/