### **🔹 What is REST?**

**REST** stands for **REpresentational State Transfer**.  
 It's **not a protocol** like HTTP, but a **set of rules or architecture style** for designing web services.

It was introduced by **Roy Fielding** in his PhD dissertation.

### **🔹 Key idea behind REST:**

Imagine you're talking to a server using simple **HTTP methods** (like GET, POST, PUT, DELETE) to perform actions on **resources** (like users, posts, orders, etc.).

Each resource is identified by a URL (Uniform Resource Locator).  
 For example:

GET https://example.com/users/101

Means: “Hey server, give me the user with ID 101”

### **🔹 What is a REST API?**

A **REST API (or RESTful API)** is an API (Application Programming Interface) that follows the rules of REST.

It allows different systems (like a mobile app and a server) to communicate using HTTP requests.

### **🔹 Example:**

Suppose you have an online store API.

| **HTTP Method** | **Endpoint** | **Meaning** |
| --- | --- | --- |
| GET | /products | Get all products |
| GET | /products/1 | Get product with ID 1 |
| POST | /products | Add a new product |
| PUT | /products/1 | Update product with ID 1 |
| DELETE | /products/1 | Delete product with ID 1 |

### **🔹 Why REST is Popular?**

* Works over HTTP (simple and widely used)
* Language independent
* Stateless (server doesn’t remember your previous request)
* Easy to scale and cache

**CODE**

**API CALL**

from flask import Flask, request, redirect, url\_for, render\_template,jsonify

app = Flask(\_\_name\_\_)

cart = []

@app.route('/')

def index():

return render\_template('index.html', cart=cart)

@app.route('/api/add', methods=['POST'])

def add\_to\_cart():

product = {

'name': request.form['name'],

}

cart.append(product)

return jsonify({'message': 'Product added to cart', 'cart': cart}), 201

return redirect(url\_for('index'))

@app.route('/api/delete/<string:product\_name>', methods=['DELETE'])

def delete\_from\_cart(product\_name):

global cart

cart = [product for product in cart if product['name'] != product\_name]

return jsonify({'message': 'Product deleted ', 'cart': cart}), 201

return redirect(url\_for('index'))

if \_\_name\_\_ == '\_\_main\_\_':

app.run(debug=True)

**SIMPLE API**

from flask import Flask, request, redirect, url\_for, render\_template,jsonify

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