

WEB DEVELOPMENT USING PYTHON

Software Systems Development
Monsoon -2023

INTRODUCTION

This tutorial aims to demystify APIs by comparing REST and SOAP. We will explore the role of HTTP, HTTP methods and codes, and delve into Flask, Jinja, SQLAlchemy, and flask-SQLAlchemy.



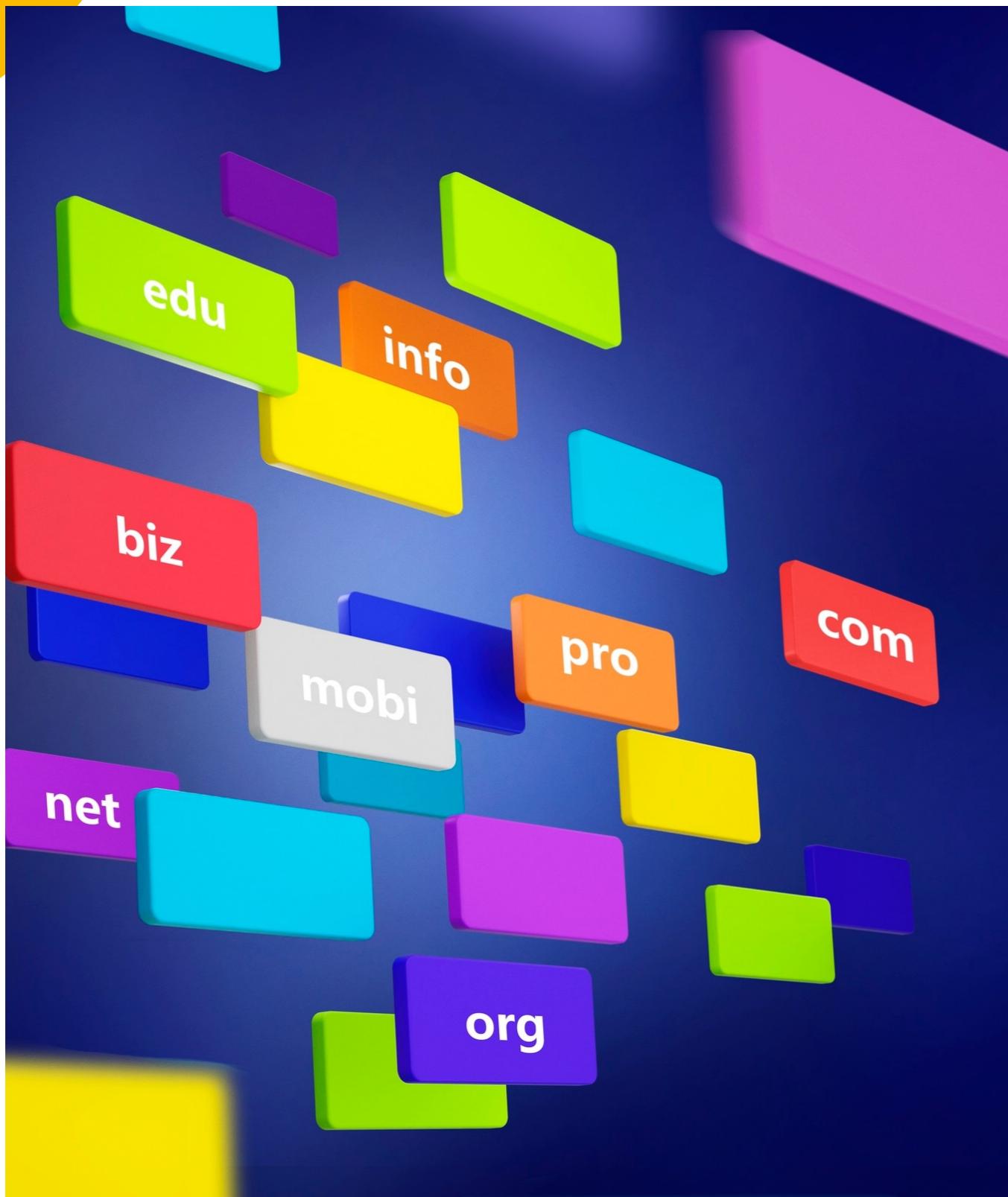


API BASICS: REST VS. SOAP

REST (Representational State Transfer) and SOAP (Simple Object Access Protocol) are two popular API architectures.

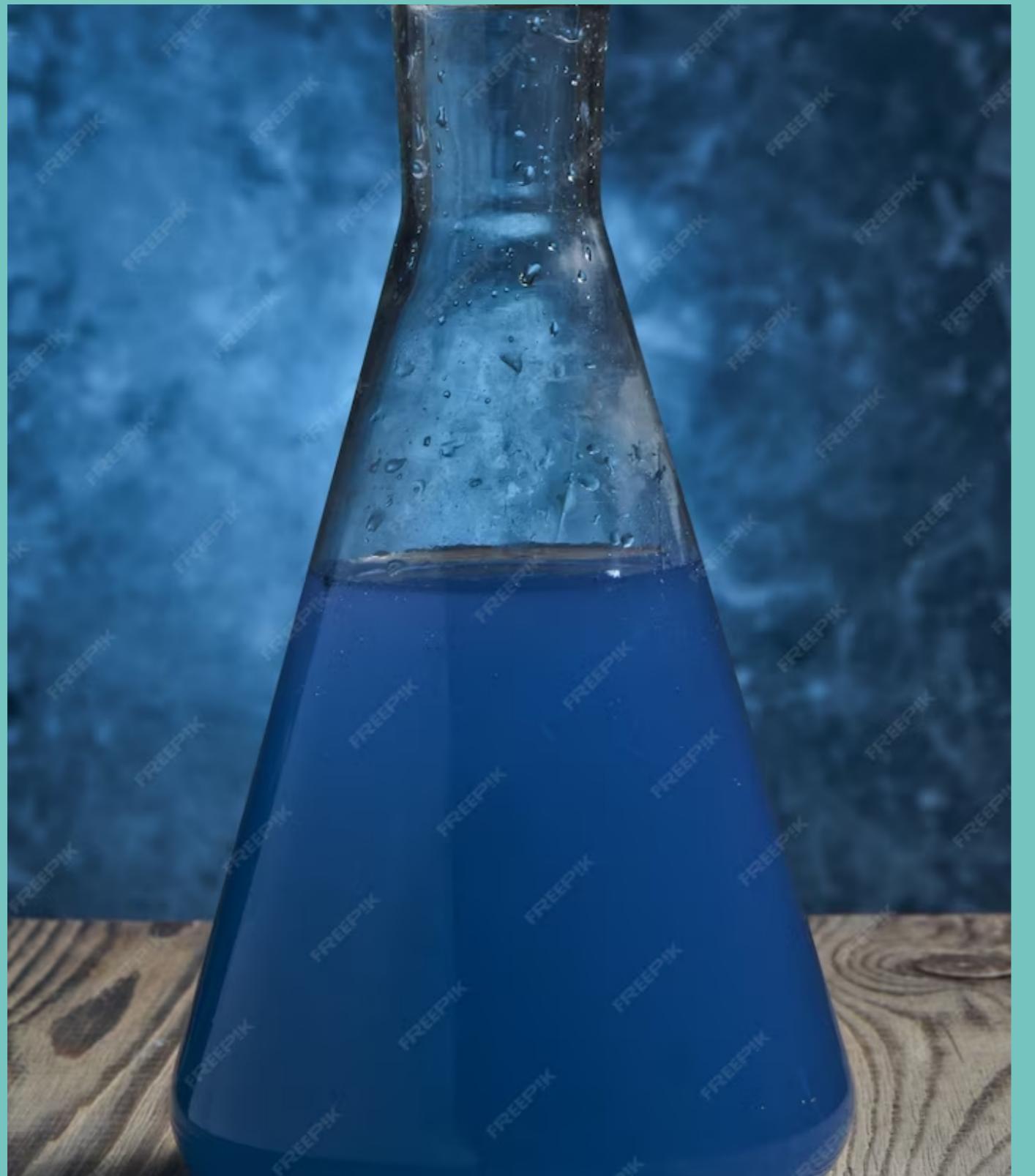
REST focuses on stateless, lightweight communication using HTTP

SOAP relies on XML-based messaging protocols.



HTTP: THE BACKBONE OF APIs

HTTP (Hypertext Transfer Protocol) serves as the foundation for APIs. It enables communication between clients and servers. Understanding HTTP methods (GET, POST, PUT, DELETE) and status codes (200, 404, 500) is essential for effective API interaction and troubleshooting.



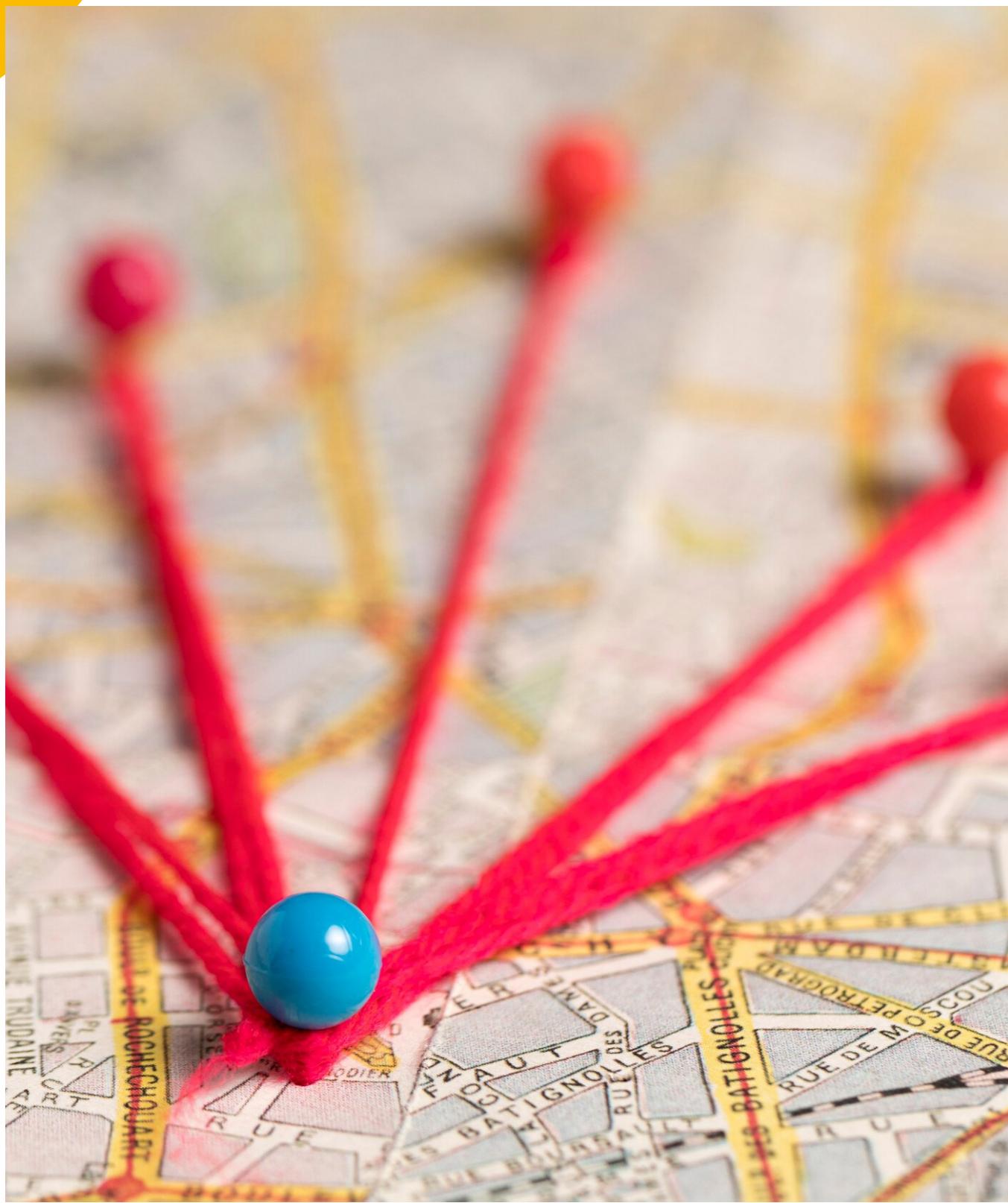
FLASK: A PYTHON WEB FRAMEWORK

Flask is a lightweight and flexible Python web framework. It provides tools for building APIs, handling routing, and managing HTTP requests and responses. Flask's simplicity and extensibility make it a popular choice for API development.



JINJA: TEMPLATING ENGINE FOR FLASK

Jinja is a powerful templating engine used in Flask. It allows dynamic content generation by combining HTML templates with Python code. Jinja's template inheritance, control structures, and filters make it easy to create dynamic and reusable web pages.



WHAT IS ORM?

ORM stands for Object-Relational Mapping. It is a programming technique that allows you to work with databases using object-oriented programming concepts.

ORM maps database tables to classes and objects in your programming language, allowing you to interact with the database using these objects instead of writing raw SQL queries.

SQLALCHEMY AND FLASK-SQLALCHEMY

SQLAlchemy is a popular Python SQL toolkit and Object-Relational Mapping (ORM) library. It simplifies database interactions in Flask applications.

flask-SQLAlchemy is a Flask extension that integrates SQLAlchemy, providing additional functionality and convenience for database operations.

