**Prompt -** help me structure a project based plan to learn API Testing using Postman , including milestones and practical exercises

**📅 Project-Based Learning Plan: API Testing with Postman**

**Phase 1: Foundations (Week 1)**

🎯 **Goal:** Understand APIs and Postman basics.

* **Milestones:**
  + Learn what an API is (REST, SOAP, GraphQL basics).
  + Install Postman & explore UI (workspaces, collections, requests).
* **Practical Exercises:**
  + Send a simple **GET request** to a public API (e.g., https://jsonplaceholder.typicode.com/posts).
  + Inspect response status codes, headers, and body.

**Phase 2: Core API Testing (Week 2–3)**

🎯 **Goal:** Learn CRUD operations and assertions.

* **Milestones:**
  + Perform **GET, POST, PUT, DELETE** requests.
  + Learn about authentication (API keys, Bearer tokens).
  + Write basic **tests using Postman’s built-in JS test scripts**.
* **Practical Exercises:**
  + Use the **Petstore API** (Swagger Petstore) for CRUD operations.
  + Write Postman tests:
    - Validate **status code = 200**
    - Check response body fields (e.g., pm.expect(response.json().name).to.eql("doggie")).

**Phase 3: Collections & Automation (Week 4)**

🎯 **Goal:** Organize and automate tests.

* **Milestones:**
  + Create a **Collection** of related API tests.
  + Use **variables, environments, and pre-request scripts**.
  + Run tests with **Collection Runner**.
* **Practical Exercises:**
  + Build a **collection** to test multiple endpoints of the Petstore API.
  + Use environments for **Dev / QA / Prod URLs**.
  + Add tests to validate JSON schema.

**Phase 4: Advanced Testing & CI Integration (Week 5–6)**

🎯 **Goal:** Simulate real-world API testing.

* **Milestones:**
  + Use **Data-driven testing** with CSV/JSON files.
  + Integrate Postman tests with **Newman** (command-line runner).
  + Connect tests into a **CI pipeline** (GitHub Actions / Jenkins).
* **Practical Exercises:**
  + Run a collection in Newman and export HTML reports.
  + Trigger Postman tests automatically after a code push in GitHub.

**Phase 5: Capstone Project (Week 7–8)**

🎯 **Goal:** Apply everything in a real project.

* **Project Idea:** Pick a **public API** (e.g., OpenWeather, Spotify, or GitHub API).
* **Tasks:**
  + Test at least **5 endpoints** (GET, POST, PUT, DELETE).
  + Add **authentication handling**.
  + Build **collections with tests & variables**.
  + Run tests with **Newman** and generate reports.
* **Deliverable:** A **GitHub repo** containing:
  + Postman collection + environment files
  + Newman run reports
  + Documentation (how to run your tests)

**🔑 Extra Learning Enhancements**

* Join Postman community challenges (Postman Galaxy).
* Explore **mock servers** in Postman to simulate APIs.
* Practice **API schema validation** with JSON schema tests.