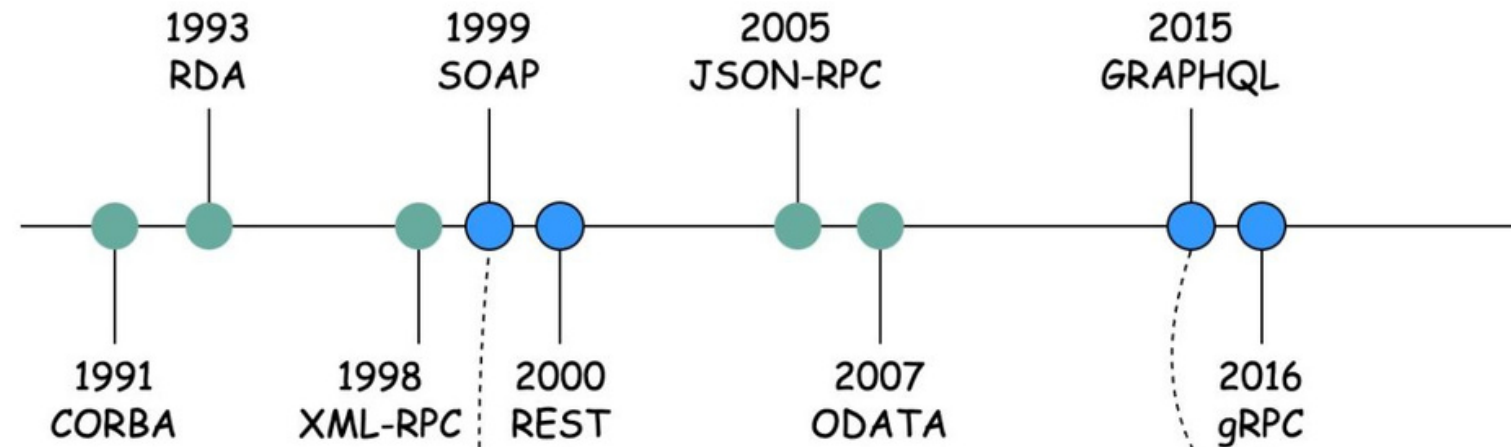


HOW DO YOU EXECUTE A COLLECTION ON POSTMAN, NEWMAN, GITHUB ACTIONS, AND JENKINS?

Salhi Fayza



API Architectural Styles Comparison



	SOAP (Simple Object Access Protocol)	REST (REpresentational State Transfer)	GraphQL	RPC (Remote Procedure Call)
Organized in terms of	enveloped message structure	compliance with six architectural constraints	schema & type system	local procedure call
Format	XML only	XML, JSON, HTML, plain text	JSON	JSON, XML, Protobuf, Thrift, FlatBuffers
Learning curve	Difficult	Easy	Medium	Easy
Community	Small	Large	Growing	Large
Use cases	<ul style="list-style-type: none"> - payment gateways - identity management - CRM solutions - financial and telecommunication services - legacy system support 	<ul style="list-style-type: none"> - public APIs - simple resource-driven apps 	<ul style="list-style-type: none"> - mobile APIs - complex systems - micro-services 	<ul style="list-style-type: none"> - command and action-oriented APIs - high performance communication in massive micro-services systems



Role of Postman in API Testing: Postman is a popular API testing tool that allows testers to design, test, and document APIs. Testers can create and execute API requests, automate testing workflows, and perform functional, regression, and load testing. Postman provides a user-friendly interface to manage and monitor API development, making it an essential tool for testing APIs during different phases of the software development life cycle.

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Collection Products

Run Collection

The screenshot shows the Postman interface with a collection named '2.Products' selected. The left sidebar contains navigation options: Collections, APIs, Environments, Mock Servers, Monitors, Flows, and History. The '2.Products' collection is expanded, showing a list of requests: GET Get all products, GET Get a single product, GET Search products, GET Limit and skip products, GET Get all products categories, GET Get products of a category, POST Add a new product, PUT Update a product, and DEL Delete a product. The main area shows the 'Tests' tab for the selected request, containing the following code:

```
1 pm.test("Status code is 200", function () {
2   |   pm.response.to.have.status(200);
3   | });
4 pm.test("Response time is less than 500ms", function () {
5   |   pm.expect(pm.response.responseTime).to.be.below(500);
6   | });
7 pm.test("Content-Type is present", function () {
8   |   pm.response.to.have.header("Content-Type");
9   | });
```

The interface also shows a 'Run' button in the top right corner, which is highlighted with a red arrow and a tooltip that says 'Run collection'. The environment is set to 'Dev'.

Requests

Galbi Fayza

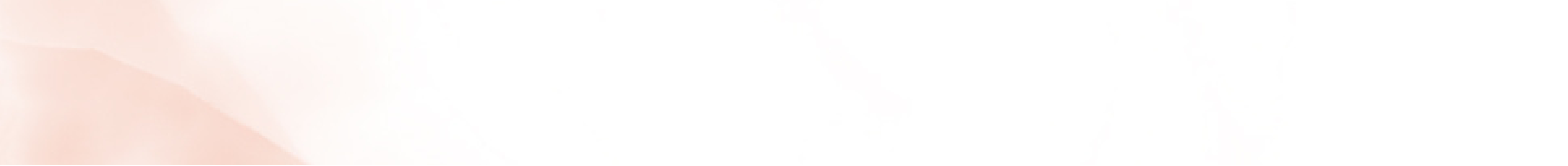
Number of iterations.

The screenshot shows the Postman interface for a collection named '2.Products'. The 'Runner' tab is active, and the 'Run configuration' panel is open on the right. Under 'Choose how to run your collection', 'Run manually' is selected. The 'Iterations' field is set to 1, and the 'Delay' field is set to 0 ms. A 'Run 2.Products' button is located at the bottom right of the configuration panel. A purple arrow points from the text 'Number of iterations.' to the 'Iterations' input field, and a blue arrow points from the text 'Delay between iterations.' to the 'Delay' input field.

Delay between iterations.

Run 2.Products

Click Galbi Fayza



- Collections
 - APIs
 - Environments
 - Mock Servers
 - Monitors
 - Flows
 - History
- 1.Authentication
- 2.Products
- GET Get all products
 - GET Get a single product
 - GET Search products
 - GET Limit and skip products
 - GET Get all products categories
 - GET Get products of a category
 - POST Add a new product
 - PUT Update a product
 - DEL Delete a product
- 3.Users
- 4.Carts
- 5.Posts

2.Products - Run results

Run on Today, 13:23:08 · [View all runs](#)

Run Again Automate Run ▼ + New Run 🔗 Export Results

Source	Environment	Iterations	Duration	All tests	Avg. Resp. Time
Runner	Environment Dev	1	3s 806ms	35	306 ms

All Tests Passed (35) Failed (0) Skipped (0) [View Summary](#)

Iteration 1

GET Get all products
https://dummyjson.com/products 200 OK 258 ms 17.298 KB

- PASS Status code is 200
- PASS Response time is less than 500ms
- PASS Content-Type is present
- PASS Successful POST request
- PASS Status code name has OK
- PASS Response body has a product iPhone 9

GET Get a single product
https://dummyjson.com/products/1

- PASS Status code is 200

Click

Salhi Faizza

I can run my collection again with new information.

I can run my collection again with same information.

The screenshot shows the Postman interface with a collection named '2.Products' selected. The 'Run Again' button is highlighted in orange. The run results table shows the following data:

Source	Environment	Iterations	Duration	All tests	Avg. Resp. Time
Runner	Environment Dev	1	3s 766ms	35	291 ms

Below the table is a 'RUN SUMMARY' section with a 'View Results' link. The summary lists the following tests and their results:

Test Name	Pass/Fail
GET Get all products	6 0
GET Get a single product	4 0
GET Search products	4 0
GET Limit and skip products	6 0
GET Get all products categories	3 0
GET Get products of a category	3 0
POST Add a new product	3 0
PUT Update a product	3 0
DELETE Delete a product	3 0

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Role of Newman in API Testing: Newman is the command-line companion for Postman. It allows testers to run Postman collections (sets of API requests) from the command line, enabling automation of API testing. Newman is particularly useful for integration with continuous integration/continuous deployment (CI/CD) pipelines, where API tests can be executed automatically, ensuring that new code changes do not introduce regressions in the API functionality.

We need to install **nodeJS**, **newman** and **newman-reporter-htmlextra** :

NodeJS:

<https://nodejs.org/en>

Node.js® is an open-source, cross-platform JavaScript runtime environment.

Download for Linux (x64)

18.18.2 LTS

Recommended For Most Users

21.0.0 Current

Latest Features

[Other Downloads](#) | [Changelog](#) | [API Docs](#) [Other Downloads](#) | [Changelog](#) | [API Docs](#)

For information about supported releases, see the [release schedule](#).

Salhi Fayza

Newman:

```
[~]  
salhi → npm install -g newman
```

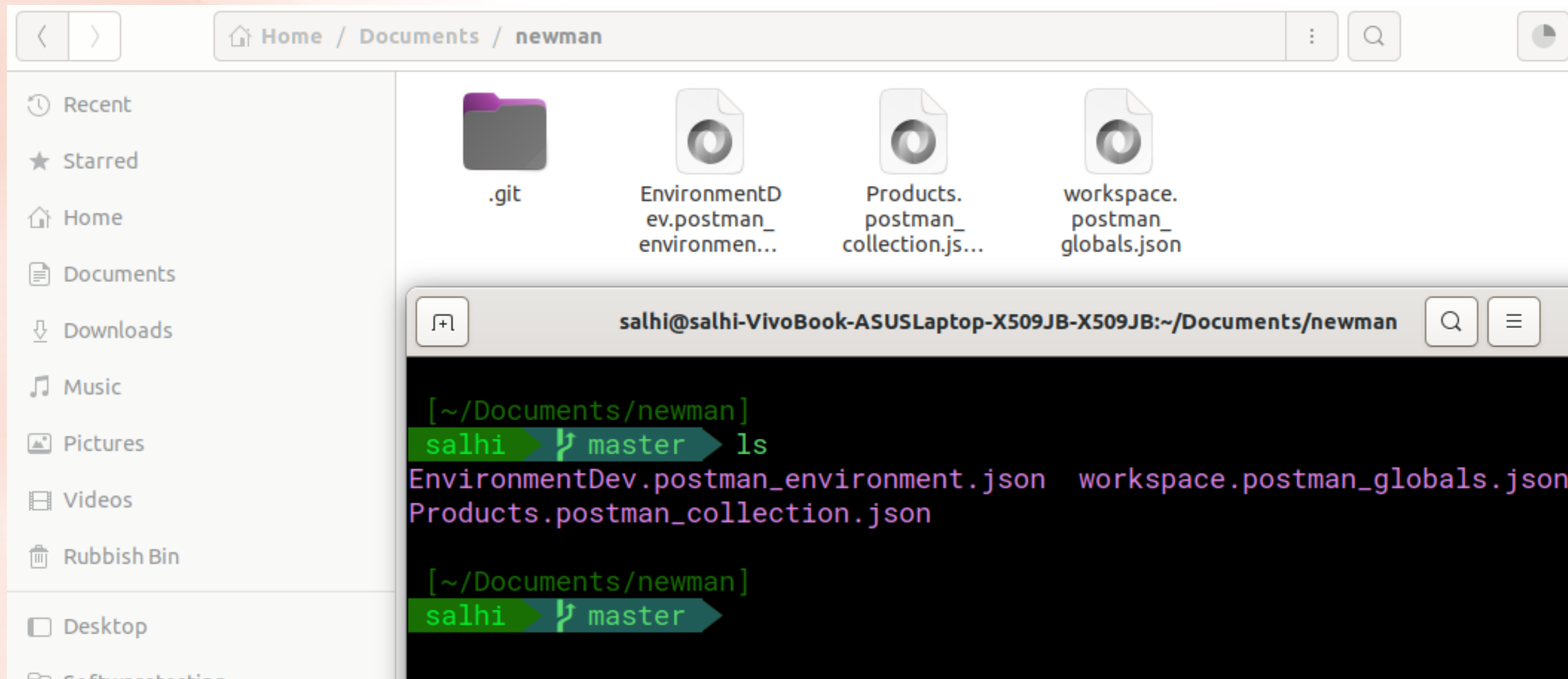
newman-reporter-htmlextra:

```
[~]  
salhi → npm install -g newman-reporter-htmlextra
```

```
[~]  
salhi → nodejs --version  
v12.22.9  
  
[~]  
salhi → newman --version  
6.0.0
```

Salhi Fayza

Run your collection on newman without reporter-htmlextra



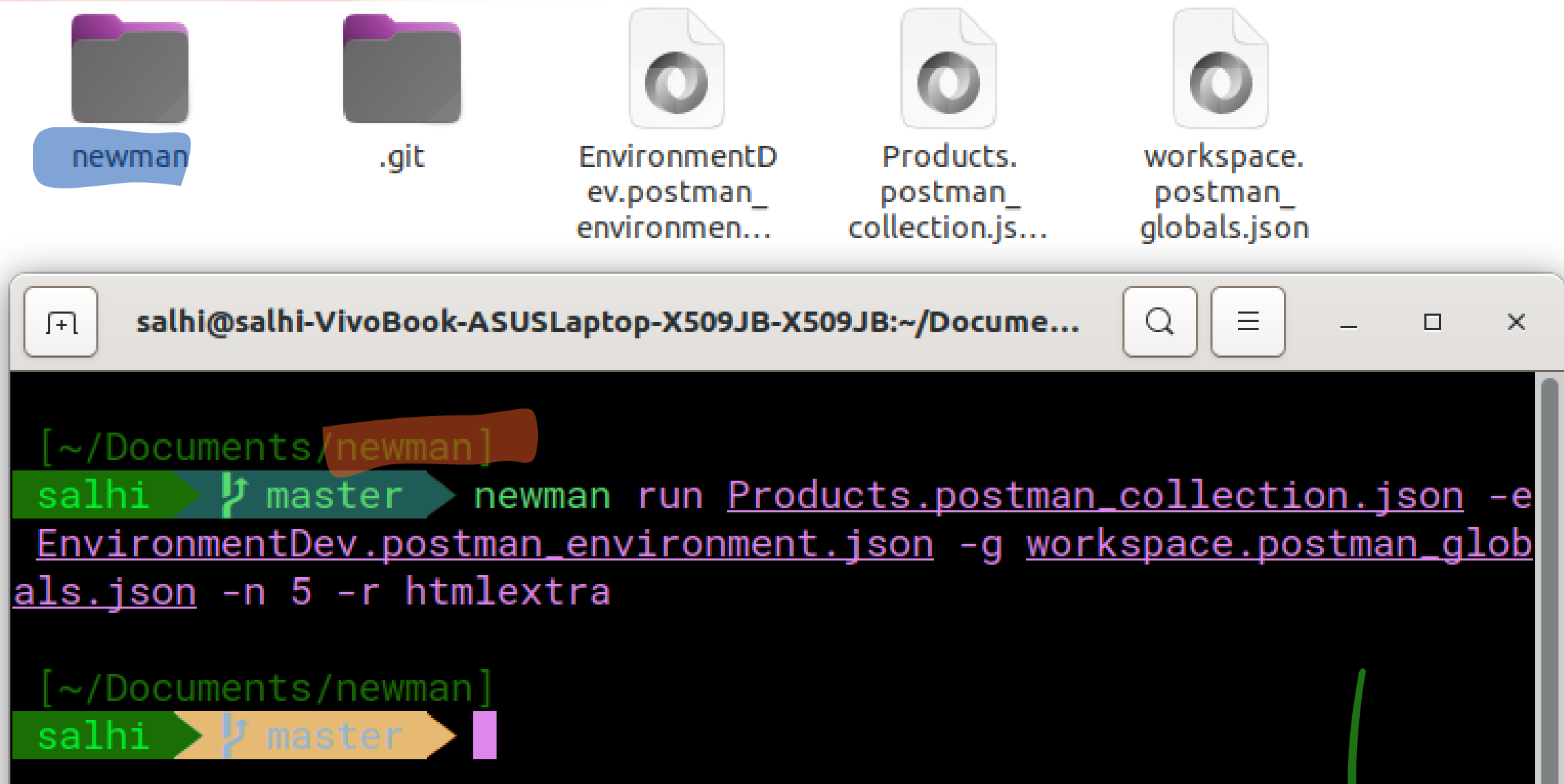
```
[~/Documents/newman]
salhi ➤ master ➤ newman run Products.postman_collection.json -e
EnvironmentDev.postman_environment.json -g workspace.postman_global
s.json
```

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	executed	failed
iterations	1	0
requests	9	0
test-scripts	16	0
prerequisite-scripts	12	0
assertions	35	0
total run duration: 3.8s		
total data received: 25.15kB (approx)		
average response time: 389ms [min: 264ms, max: 1141ms, s.d.: 270ms]		

Salhi Fayza

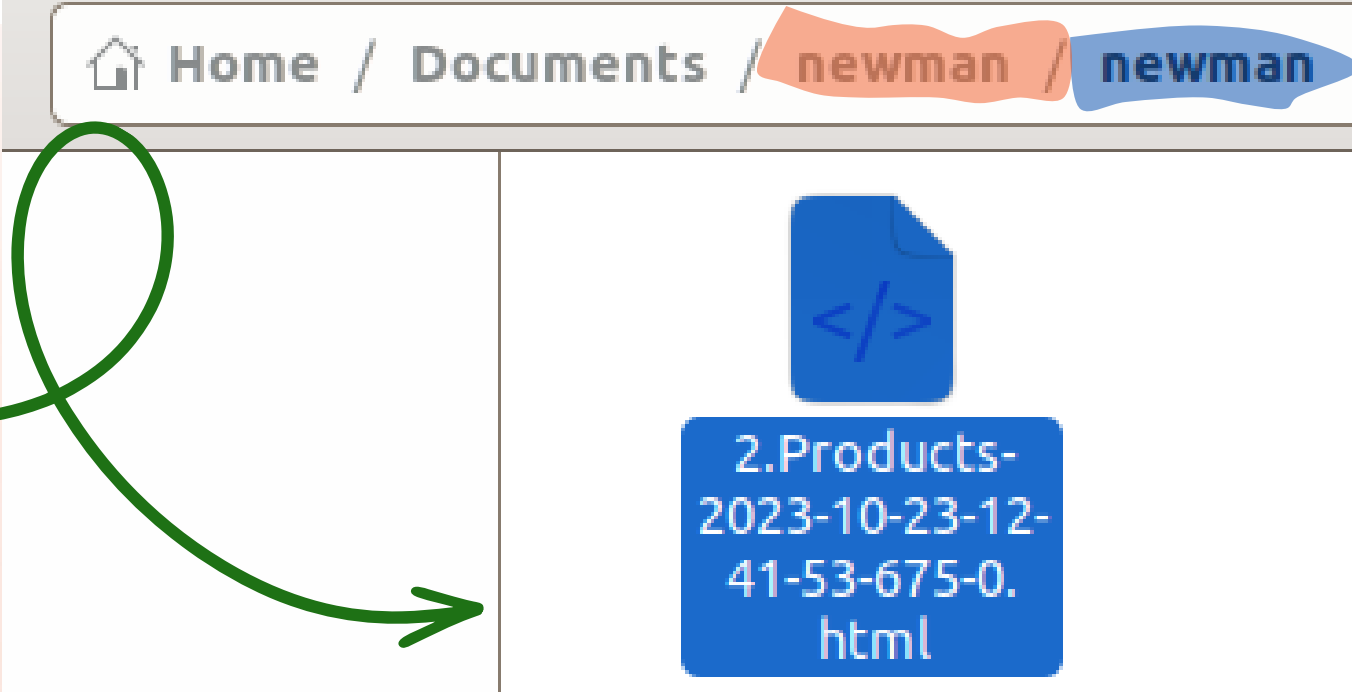
Run Your collection with number of iterations "5" and reporter-htmlextra



The terminal window shows the following commands and output:

```
[~/Documents/newman]
salhi master newman run Products.postman_collection.json -e
EnvironmentDev.postman_environment.json -g workspace.postman_globals.json -n 5 -r htmlextra

[~/Documents/newman]
salhi master
```



The file explorer shows the following breadcrumb and file:

Home / Documents / newman / newman

2.Products-2023-10-23-12-41-53-675-0.html

Salhi Fayza

Open your reporter HTML:

Light Dark

Summary Total Requests **45** Failed Tests **0** Skipped Tests **0**

Newman Run Dashboard

Monday, 23 October 2023 13:41:53

TOTAL ITERATIONS 5	TOTAL ASSERTIONS 175	TOTAL FAILED TESTS 0	TOTAL SKIPPED TESTS 0
------------------------------	--------------------------------	--------------------------------	---------------------------------



Light Dark

Click to view the Requests

Summary Total Requests **45** Failed Tests **0** Skipped Tests **0**

5 ITERATIONS AVAILABLE TO VIEW

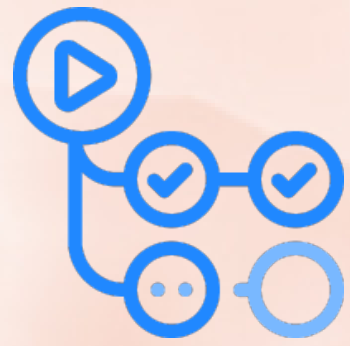
Expand Folders Expand Requests

1 2 3 4 5

ITERATION 1 SELECTED


- Iteration: 1 - Get all products
- Iteration: 1 - Get a single product
- Iteration: 1 - Search products
- Iteration: 1 - Limit and skip products
- Iteration: 1 - Get all products categories




Galbi Fayza









Role of GitHub Actions in API Testing: GitHub Actions is a CI/CD and automation platform integrated into GitHub repositories. In the context of API testing, GitHub Actions can be configured to automatically trigger API tests whenever changes are pushed to the repository. This helps ensure that API tests are run consistently and promptly, providing rapid feedback to developers. GitHub Actions can also be configured to deploy changes to different environments based on the test results.


 **newmanAPIs** Private

 Unwatch 1

 main ▾  2 branches  0 tags

[Go to file](#) [Add file ▾](#) [<> Code ▾](#)

 SalhiFayza Delete .github/workflows/blank.yml	b28467e now	 8 commits
 EnvironmentDev.postman_environ...	update collection	3 hours ago
 Products.postman_collection.json	update collection	3 hours ago
 README.md	Create README.md	3 hours ago
 workspace.postman_globals.json	update collection	3 hours ago

README.md 

newmanAPIs

Salhi Fayza

1 Click Actions

Get started with GitHub Actions

Build, test, and deploy your code. Make code reviews, branch management, and
Skip this and [set up a workflow yourself](#) →

Suggested for this repository

Simple workflow
By GitHub

Start with a file with the minimum necessary structure.

[Configure](#)

2 Click Configure

```
1 name: Newman
2 on:
3   workflow_dispatch:
4 jobs:
5   build:
6     runs-on: ubuntu-latest
7     steps:
8     - uses: actions/checkout@v3
9     - name: install report htmlextra
10      run: npm install -g newman-reporter-htmlextra
11     - name: Run newman
12      run: newman run Products.postman_collection.json -e EnvironmentDev.postman_environment.json -g workspace
13     - uses: actions/upload-artifact@v3
14     with:
15       name: my-artifact
16       path: ./newman
```

3 Create your steps in the file .yml

blank.yml

name: Newman

on:

workflow_dispatch:

jobs:

build:

runs-on: ubuntu-latest

steps:

- uses: actions/checkout@v3

- name: install report htmlextra

 - run: npm install -g newman-reporter-htmlextra

- name: Run newman

 - run: newman run Products.postman_collection.json -e EnvironmentDev.postman_environment.json

 - g workspace.postman_globals.json -n 5 -r htmlextra

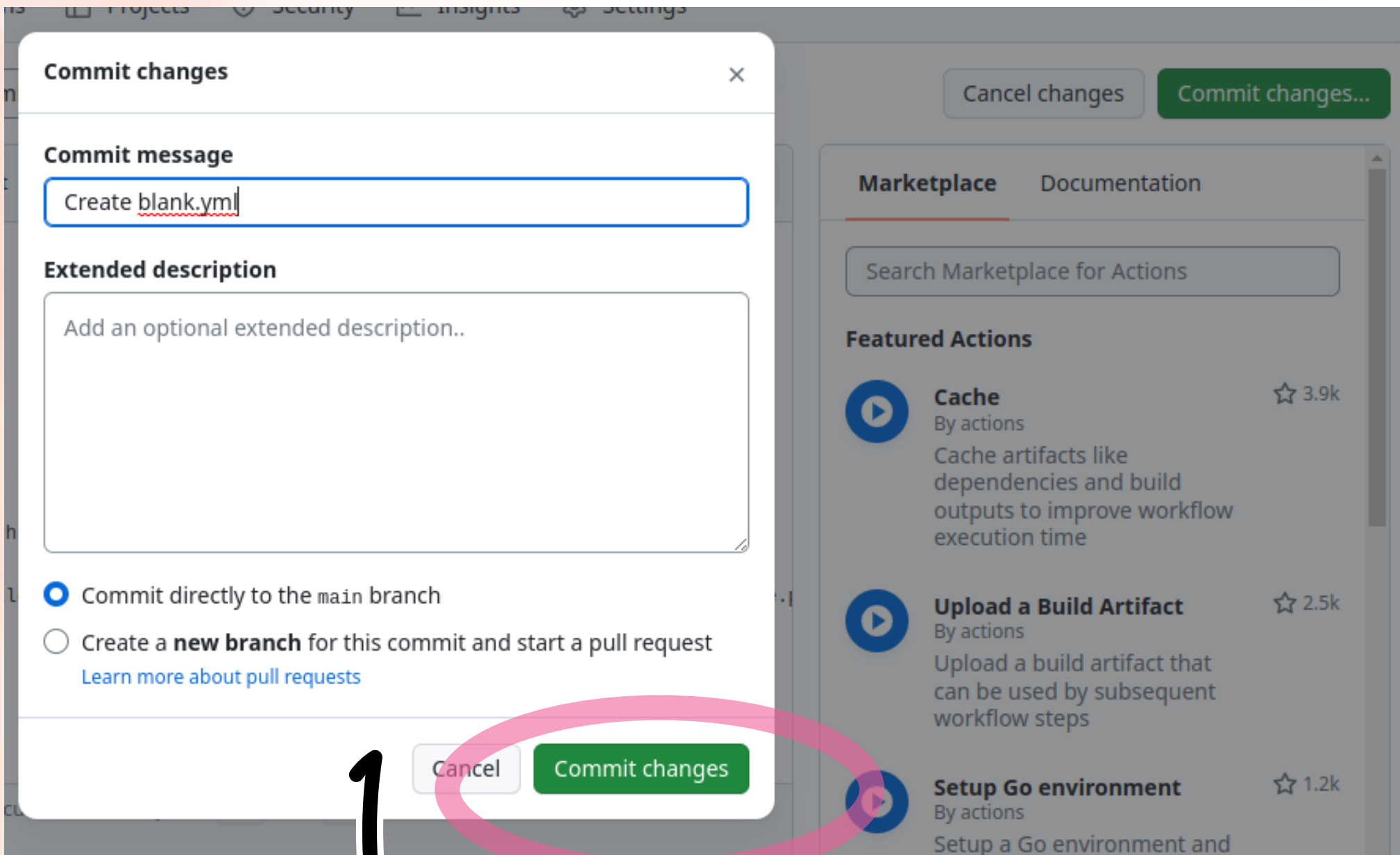
- uses: actions/upload-artifact@v3

 - with:

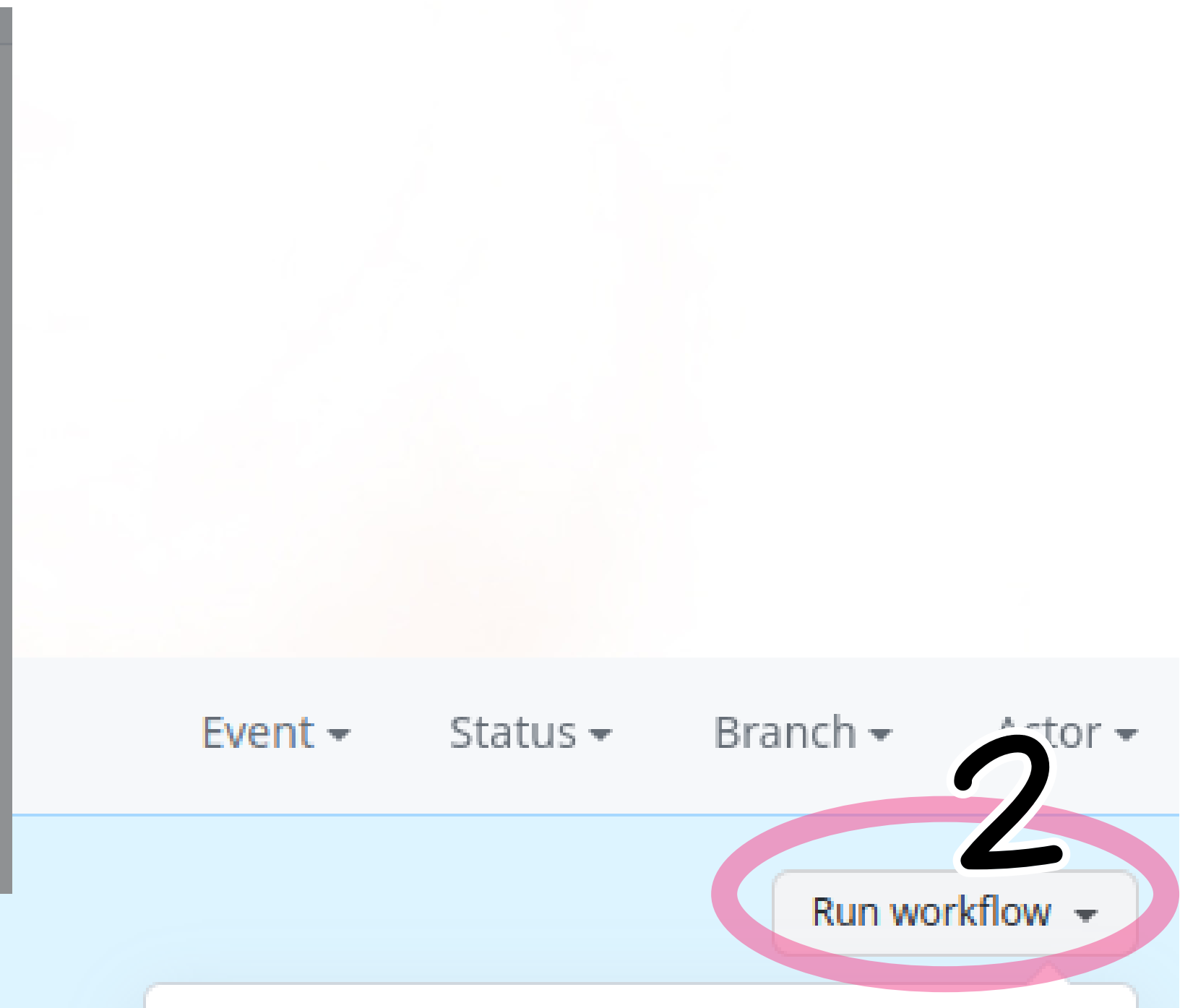
 - name: my-artifact

 - path: ./newman

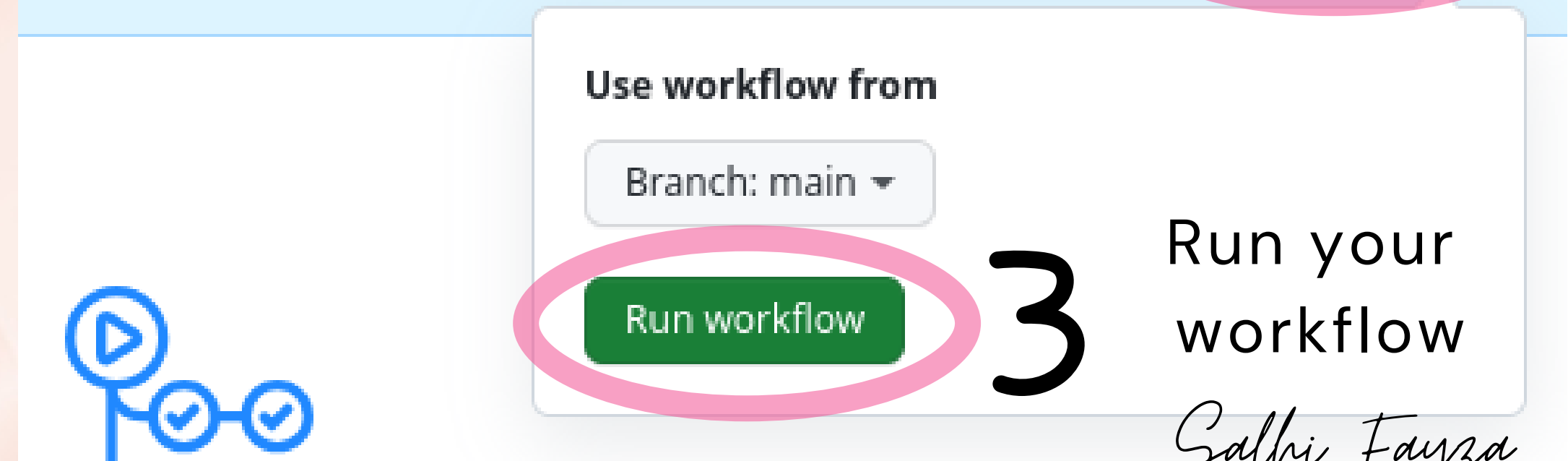
Salhi Fayza



1
Create your commit message



2
Run your workflow



3
Run your workflow

Salbi Fayza

<> Code Issues Pull requests **Actions** Projects Security Insights Settings

Actions

New workflow

All workflows

Newman 1

Management

Caches

Runners Beta

Newman

blank.yml

0 workflow runs

This workflow has a `workflow_dispatch` event trigger.

2

Newman

blank.yml

Filter workflow runs

0 workflow runs

Event Status Branch Actor

This workflow has a `workflow_dispatch` event trigger. Run workflow

<input checked="" type="checkbox"/> Newman	Newman #19: Manually run by SalhiFayza	main	now	33s	...
---	--	------	-----	-----	-----

Salhi Fayza

Manually triggered 1 minute ago

Status

Total duration

SalhiFayza -o- f1013e2 `main`

Success

33s

blank.yml

on: workflow_dispatch

✓ build 26s

3

Artifacts

Produced during runtime

Name

Size

my-artifact

1.08 MB

4

build

succeeded 1 minute ago in 26s

Search logs




- > ✓ Set up job 1s
- > ✓ Run actions/checkout@v3 0s
- > ✓ install report htmlextra 8s
- > ✓ Run newman 13s
- > ✓ Run actions/upload-artifact@v3 1s
- > ✓ Post Run actions/checkout@v3 0s
- > ✓ Complete job 0s

Salhi Fayza

Extract + my-artifact.zip

< > Home Location: /

Name	Size	Type	Modified
 2.Products-2023-10-23-12-53-39-802-0.html	1.1 MB	HTML docu...	23 October 2023, 12:53

Browser tabs: newmar x, dummy x, Seller D x, Projects x, APIs: -D x, How -D x, github x, Newmar x

Address bar: File | /home/salhi/.cache/fr-bkAI9N/2.Products-2023-10-23-12-53-39-802-0.html

Light Dark

Summary | Total Requests 45 | Failed Tests 0 | Skipped Tests 0

Newman Run Dashboard

Monday, 23 October 2023 12:53:39

TOTAL ITERATIONS	TOTAL ASSERTIONS	TOTAL FAILED TESTS	TOTAL SKIPPED TESTS
5	175	0	0

Salhi Fayza





Role of Jenkins in API Testing: Jenkins is a widely used open-source automation server that supports building, testing, and deploying code. In API testing, Jenkins can be configured to automate the execution of API tests at specified intervals or in response to code changes. Jenkins can integrate with various testing tools, including Postman and Newman, to orchestrate and report on API test executions. It plays a crucial role in continuous integration and continuous delivery (CI/CD) pipelines by ensuring the reliability of APIs throughout the development process.

Salhi Fayza

Install plugin nodeJS

- Updates 18
- Available plugins
- Installed plugins**
- Advanced settings

Plugins

Nom ↓

NodeJS Plugin 1.6.1
NodeJS Plugin executes **NodeJS** script as a build
[Report an issue with this plugin](#)

Ajouter NodeJS

NodeJS
Nom

Install automatically ?

≡ Installer depuis nodejs.org

Version

For the underlying architecture, if a
 Force 32bit architecture

Enregistrer Appliquer

Ajouter NodeJS

NodeJS
Nom

Install automatically ?

≡ Installer depuis nodejs.org

Version

For the underlying architecture, if a
 Force 32bit architecture

Enregistrer Appliquer

We need to install & config NodeJS

Salhi Fayza

- Nodes
- Clouds
- Node Monitoring
- File d'attente des constructions ▼
File d'attente des constructions vide
- État du lanceur de compilations ^
built-in node (0 of 2 executors busy)

Nodes + New Node ↻

S	Nom ↓	Architecture	Différence entre les horloges	Espace disque disponible	Espace de swap disponible	Free Temp Space	Temps de réponse
	maître	Linux (amd64)	Synchronisé	798.96 GB	2.00 GB	798.96 GB	0ms 
	Données obtenues	40 mn	40 mn	40 mn	40 mn	40 mn	40 mn

- Statut
- Configurer
- Historique des constructions
- Statistiques d'utilisation
- Console de script**
- État du lanceur de compilations ^
built-in node (0 of 2 executors busy)

Script Console

Vous pouvez saisir ici un [script Groovy](#) quelconque pour l'exécuter sur le serveur. Utile pour diagnostiquer et résoudre des problèmes. Utilisez la commande "println" pour voir la sortie (si vous utilisez System.out, cela ira vers la sortie standard du serveur, qui est plus complexe à retrouver.) Par exemple :

```
println System.getenv("PATH")  
  
println "uname -a".execute().text
```

This execution happens in the agent JVM.
Toutes les classes de tous les plugins sont visibles. jenkins.*, jenkins.model.*, hudson.*, et hudson.model.* sont pré-importées.

```
1 System.setProperty("hudson.model.DirectoryBrowserSupport.CSP", "")
```

Salhi Fayza

Configure

- General
- Gestion de code source**
- Ce qui déclenche le build
- Environnements de Build
- Build Steps
- Actions à la suite du build

Gestion de code source

Aucune

Git ?

Repositories ?

Repository URL ?

https://github.com/SalhiFayza/newmanAPIs.git

Credentials ?

SalhiFayza/*****

Ajouter ▾

- General
- Gestion de code source
- Ce qui déclenche le build
- Environnements de Build**
- Build Steps
- Actions à la suite du build

Ajouter le répertoire bin/ de Node/npm au PATH

NodeJS Installation

Specify needed nodejs installation where npm install

NodeJS

npmrc file

utiliser le système par défaut

Cache location

Default (~/.npm or %APP_DATA%\npm-cache)

Define Upstream Maven Repositories

Inspect build log for published build scans

Salhi Fayza

Build Steps

Configure

- General
- Gestion de code source
- Ce qui déclenche le build
- Environnements de Build
- Build Steps**
- Actions à la suite du build

Exécuter un script shell ?

Commande

Voir [la liste des variables d'environnement disponibles](#)

```
newman run "Products.postman_collection.json" -e "EnvironmentDev.postman_environment.json"
-g "workspace.postman_globals.json" --disable-unicode -r "htmlextra"
|--reporter-htmlextra-export newman/report.html
```

Avancé ▾

Configure

- General
- Gestion de code source
- Ce qui déclenche le build
- Environnements de Build
- Build Steps
- Actions à la suite du build**

Actions à la suite du build

Publish HTML reports ?

Reports

HTML directory to archive ?

Index page[s] ?

Index page title[s] (Optional) ?

Report title ?

Sauver

Apply

Salhi Fayza

Tableau de bord > APITesting >

- Modifications
- Répertoire de travail
- Lancer un build**
- Configurer
- Supprimer Projet
- Dependency Graph
- Renommer

Historique des builds tendance ▾

Filter builds...

#1 24 oct. 2023 13:38



 **Jenkins**

Tableau de bord > APITesting >

État

- Modifications
- Répertoire de travail
- Lancer un build
- Configurer
- Supprimer Projet
- newman HTML Report
- Dependency Graph
- Renommer

Projet APITesting

 **newman HTML Report**

Liens permanents

- [Dernier build \(#47\), il y a 15 mn](#)
- [Dernier build stable \(#47\), il y a 15 mn](#)
- [Dernier build avec succès \(#47\), il y a 15 mn](#)
- [Dernier build en échec \(#40\), il y a 12 h](#)
- [Dernier build non réussi \(#40\), il y a 12 h](#)
- [Last completed build \(#47\), il y a 15 mn](#)

Galbi Fayza

[Back to newmanAPIs](#) report

Light Dark

Click to view the Requests

Summary | Total Requests **9** | Failed Tests **0** | Skipped Tests **0**

Newman Run Dashboard

Wednesday, 25 October 2023 11:18:01

TOTAL ITERATIONS 1	TOTAL ASSERTIONS 36	TOTAL FAILED TESTS 0	TOTAL SKIPPED TESTS 0
------------------------------	-------------------------------	--------------------------------	---------------------------------

