

# Mixing R, Python, and Quarto: Crafting the Perfect Open Source Cocktail



Alenka Frim, Nic Crane  
Apache Arrow







# GitHub issue tracker

 apache / arrow

[Code](#) **Issues 4.5k** [Pull requests 337](#) [Actions](#) [Projects 1](#)

Filters ▾

is:issue is:open

☐ **4,451 Open** ✓ 20,922 Closed

☐ **[Integration]: Add nanoarrow to IPC integration tests** Compon  
#43680 opened 40 minutes ago by bkietz



# GitHub issue tracker, last year

## R and Python

- 539 Pull Requests
- 1085 GitHub issues
  - 487 by new contributors



4,432 Open ✓ 20,857 Closed

Author Label

Python

Component: Python

Deprecate passing build flags to setup.py (e.g. setup.py --with-parquet)

Component: Python

#43514 opened 47 minutes ago by jorisvanderbosche

Java

Component: Java

Type: enhancement

ListViewVector Visitor-based component integration

Component: Java

#43512 opened 52 minutes ago by vibhatha

Python

Component: Python

Type: enhancement

Current assertion of CPU-accessible data in Array methods is specific to CPU device type

Component: Python

#43511 opened 1 hour ago by jorisvanderbosche

Python

Type: enhancement

Move tests that are explicitly about conversion to/from numpy on test\_array.py to a separate file

Component: Python

#43510 opened 1 hour ago by rmlaut

R

Component: R

Good first issue

Type: enhancement

Add link to ?acero from ?list\_compute\_functions

Component: R

#43509 opened 1 hour ago by rmlaut

C++

Component: C++

Use ViewOrCopyTo Instead of CopyTo when pretty printing non-CPU data

Component: C++

#43507 opened 2 hours ago by jorisvanderbosche

316 Open ✓ 17,893 Closed

Author Label Projects

Python

Component: Python

GH-43514: [Python] Deprecate passing build flags to setup.py

Component: Python

#43515 opened 16 minutes ago by jorisvanderbosche

Java

Component: Java

GH-43512: [Java] ListViewVector Visitor-based component integration

Component: Java

#43513 opened 53 minutes ago by vibhatha

C++

Component: C++

Type: enhancement

GH-43507: [C++] Use ViewOrCopyTo Instead of CopyTo when pretty printing non-CPU data

Component: C++

#43508 opened 2 hours ago by jorisvanderbosche

R

Component: R

MINOR: [R] switch on R\_VERSION

Component: R

#43502 opened 8 hours ago by jorisvanderbosche

Java

Component: Java

GH-43502: [Java] Fix Java JNI / AMD64 manylinux2014 Java JNI test not test dataset module

Component: Java

#43503 opened 12 hours ago by vibhatha

C++

Component: C++

GH-43500: [R][C] Bump dev docs C++ job from ubuntu 20.04

Component: C++

#43501 opened 14 hours ago by jorisvanderbosche

C++

Component: C++

GH-43492: [C++] Thirdparty: Bump lz4 to 1.10.0

Component: C++

#43492 opened 14 hours ago by jorisvanderbosche

Questions tagged [apache-arrow]

Apache Arrow™ enables execution engines to take advantage of the latest SIMD (Single instruction multiple data) operations available in modern processors, for native vectorized optimization of analytical data processing.

693 questions

Open with Python on R data table saved as metadata in a Parquet file

1 answer

31 views

Convert hexadecimal StringArray to FixedSizeBinaryArray

2 answers

30 views

In arrow, how to create schema according to the original variable type and

3 answers

30 views

In arrow/open\_dataset, when transfer to dataframe, show error message

2 answers

30 views

Archives (2018 - 2024):

2024

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2023

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2022

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Found 37 emails by 15 authors, divided into 9 topics.

Most active authors:

Felipe Oliveira Carvalhal

6 emails sent

Jerry Adair via user

6 emails sent

user

github

commits

issues

Other lists (31):

Ruoxi Sun

Demo Demo

Gianluca Arbezano

Jerry Adair via user

Andrew Lamb

Weston Pace

Prateem Mandal

Eric Jacobs

Benjamin Tan

[DISCUSS][Acero] Upgrading to 64-bit row offsets in row table

Hi! everyone, We've identified an issue with Acero's hash joining

Fwd: Issue while installing apache arrow 16.1 in centos 8 and

Hi team, For a particular project, I need apache arrow version 16.1.

integration test for arrow flight server

Hi! I am not sure if what I am asking makes sense but I am wondering

Using the new Azure filesystem object (C++)

Hi- I am attempting to use the new Azure filesystem object in C++.

CVE-2024-41178: Apache Arrow Rust Object Store: AWS S3

Security: moderate Affected versions: Apache Arrow Rust Object

Seattle Arrow Meeting: August 13th, 2024

I'd like to announce an Arrow Meeting on August 13th, 2024 from 9

C++ How to add user defined functions to arrow compute

Hi! I am implementing an encryption and decryption transform

C++ Building a ChunkedArray with allocation size control

Hi, I would like to build a ChunkedArray but I need to limit the max

[Python][C++] Writing pyarrow Tensor to file via IPC and read

Hi I am trying to use Apache Arrow as a step to pass tensors between





Arrow Maintainer Dashboard updated Thu Aug 01 14:46:15 2024 BST

PyArrow

R



Summary

Issues

PRs

Stack Overflow

Mailing List



Open Issues

171



Open Pull Requests

32



Stack Overflow Questions

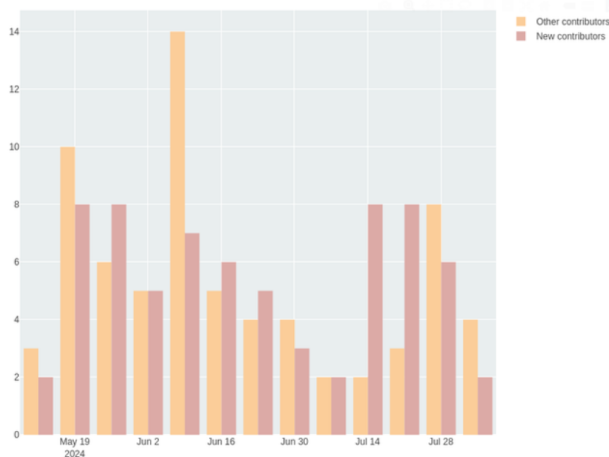
12



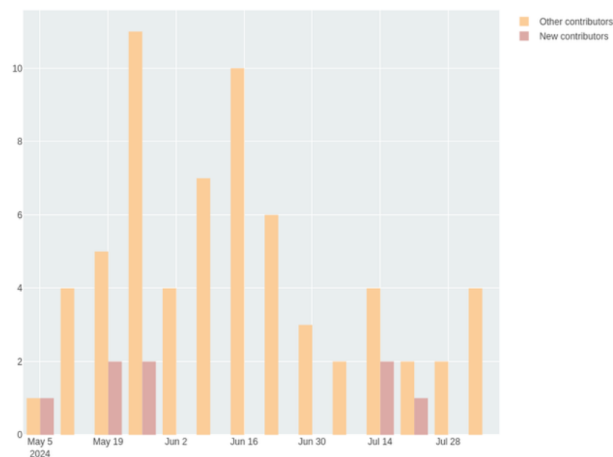
Mailing List Threads

3

Issues open through the last 3 months



PRs open through the last 3 months



Summary

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Stack Overflow

Mailing List



Issues

155



Pull Requests

77



Stack Overflow Questions

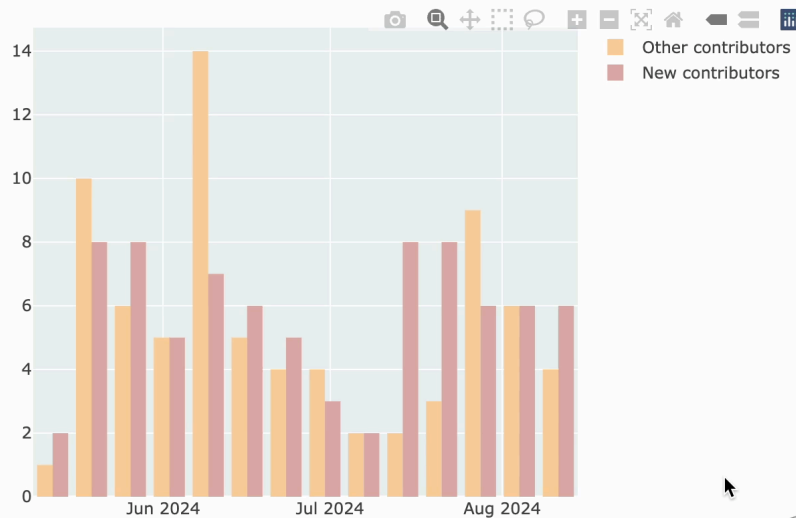
11



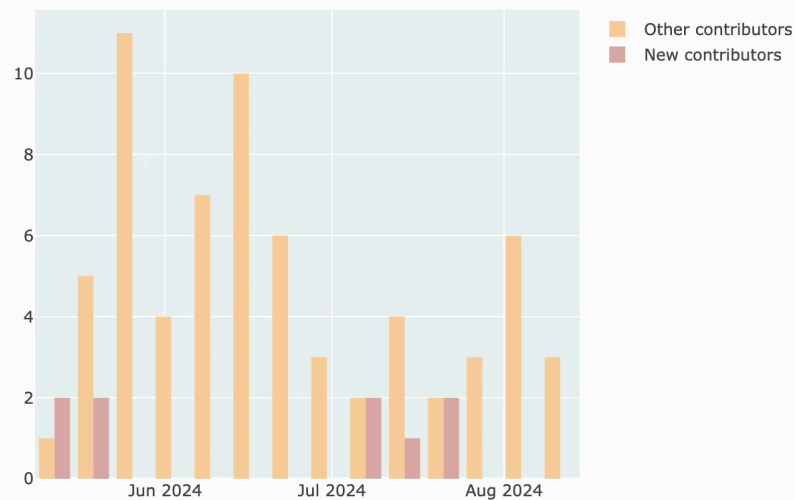
Mailing List messages

0

Issues opened through the last 3 months



PRs opened through the last 3 months



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47



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36



Stack Overflow Questions

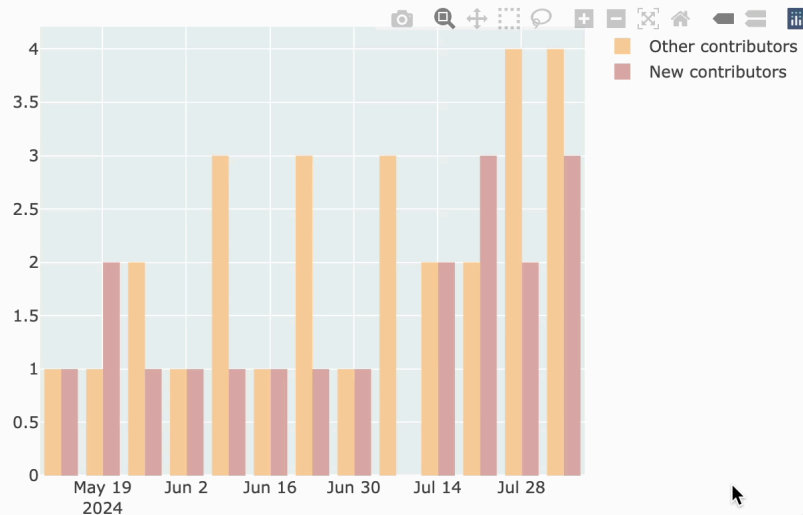
9



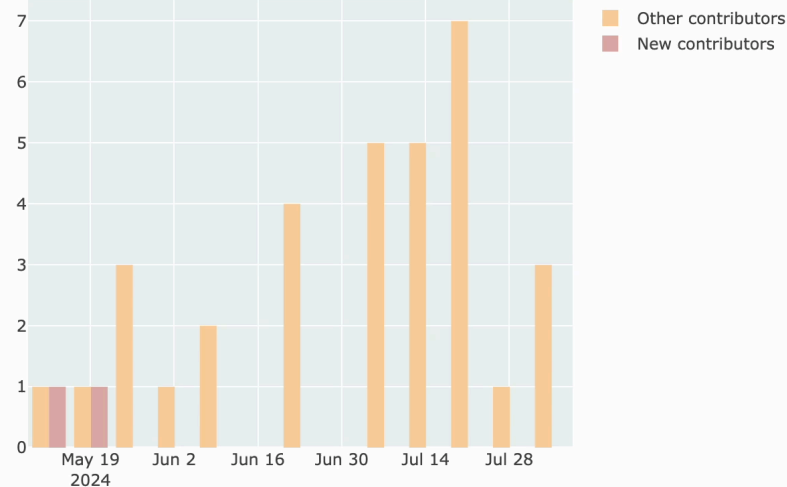
Mailing List messages

0

Issues opened through the last 3 months



PRs opened through the last 3 months



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Issues

47



Pull Requests

36



Stack Overflow Questions

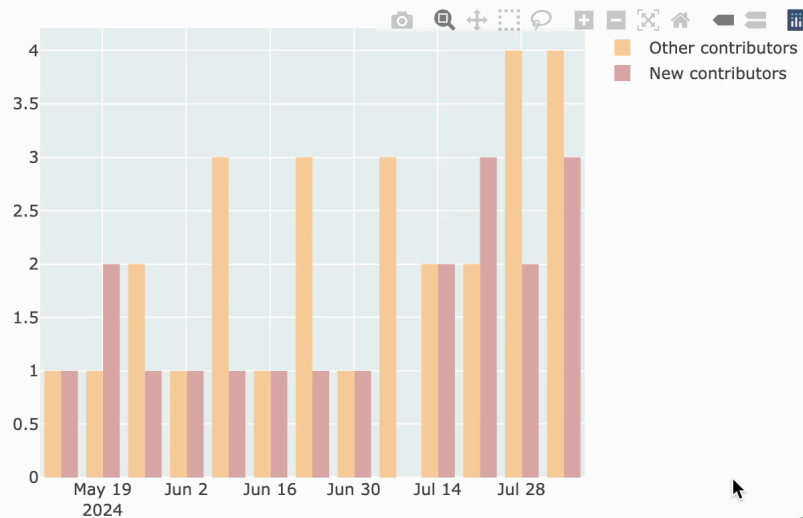
9



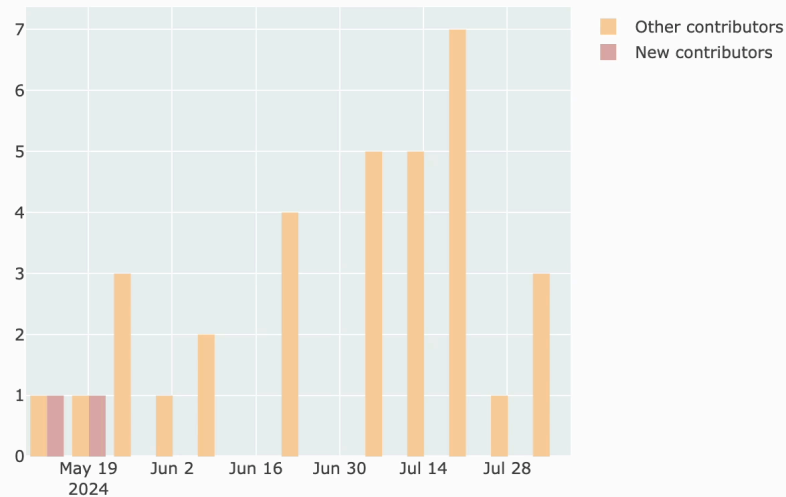
Mailing List messages

0

Issues opened through the last 3 months



PRs opened through the last 3 months



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Open PRs

7



PRs from New Contributors

1



Unreviewed PRs

1

All open PRs, new contributors highlighted

Copy

CSV

Excel

Search:

Date

GitHub title

GitHub link

Mon Jul 29 2024

[MINOR: \[R\] Fix monospace formatting in dplyr-funcs-doc](https://github.com/apache/arrow/pull/43461)<https://github.com/apache/arrow/pull/43461>

Sat Jul 27 2024

[GH-43440: \[R\] Unable to filter a factor column with %in%](https://github.com/apache/arrow/pull/43446)<https://github.com/apache/arrow/pull/43446>

Sun Jul 21 2024

[GH-43379: \[R\]\[CI\] Fix non pkg-config link order](https://github.com/apache/arrow/pull/43353)<https://github.com/apache/arrow/pull/43353>

Fri Jul 19 2024

[GH-43357: \[R\] Fix some lints](https://github.com/apache/arrow/pull/43338)<https://github.com/apache/arrow/pull/43338>

Thu Jul 18 2024

[DO NOT MERGE - verify cran 17.0.0](https://github.com/apache/arrow/pull/43318)<https://github.com/apache/arrow/pull/43318>

Tue Jul 02 2024

[WIP: Dummy PR to check maint-17.0.0 status](https://github.com/apache/arrow/pull/43113)<https://github.com/apache/arrow/pull/43113>

Thu Jun 06 2024

[GH-41973: Expose new S3 option check\\_directory\\_existence\\_before\\_creation](https://github.com/apache/arrow/pull/41998)<https://github.com/apache/arrow/pull/41998>





Summary

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Mailing List

### Mailing list items from the last month

Showing 3 entries

Search:

Date

Email subject

Thu Aug 01 2024

[\[DISCUSS\]\[Acero\] Upgrading to 64-bit row offsets in row table](#)

Thu Aug 01 2024

[Re: \[DISCUSS\]\[Acero\] Upgrading to 64-bit row offsets in row table](#)

Thu Aug 01 2024

[Re: \[DISCUSS\]\[Acero\] Upgrading to 64-bit row offsets in row table](#)

## Quarto Dashboards

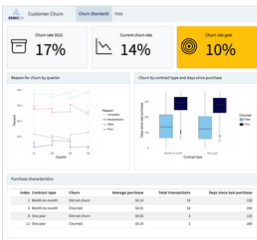
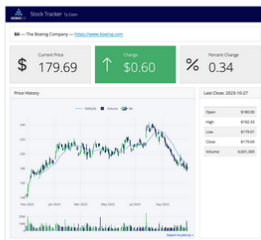
### Overview

Quarto Dashboards make it easy to create interactive dashboards using Python, R, Julia, and Observable:

- Publish a group of related data visualizations as a dashboard. Use a wide variety of components including [Plotly](#), [Leaflet](#), [Jupyter Widgets](#), [htmlwidgets](#); static graphics (Matplotlib, Seaborn, ggplot2, etc.); tabular data; value boxes; and text annotations.
- Flexible and easy to specify row and column-based [Layouts](#). Components are intelligently re-sized to fill the browser and adapted for display on mobile devices.
- Author using any notebook editor ([JupyterLab](#), etc.) or in plain text markdown with any text editor ([VS Code](#), [RStudio](#), [Neovim](#), etc.)
- Dashboards can be deployed as static web pages (no special server required) or you can optionally integrate a backend [Shiny Server](#) for enhanced interactivity.

### Examples

You can create highly customized layouts and use a wide variety of dashboard themes as illustrated in these examples (click to see them in more detail):



**Shiny**

**Quarto doc**

**Quarto  
dashboard**

## Dashboard aesthetic

**Shiny**



**Quarto doc**



**Quarto  
dashboard**



**Dashboard  
aesthetic**

**Markdown  
syntax**

**Shiny**



**Quarto doc**



**Quarto  
dashboard**



	Dashboard aesthetic	Markdown syntax	Deploy with GitHub Actions
Shiny	✓	✗	✗/✓ with Shinylive
Quarto doc	✗	✓	✓
Quarto dashboard	✓	✓	✓

	Dashboard aesthetic	Markdown syntax	Deploy with GitHub Actions	Both R and Python?
Shiny	✓	✗	✗/✓ with Shinylive	✓
Quarto doc	✗	✓	✓	✓
Quarto dashboard	✓	✓	✓	✓

# Combining R and Python

engine

knitr



reticulate



jupyter



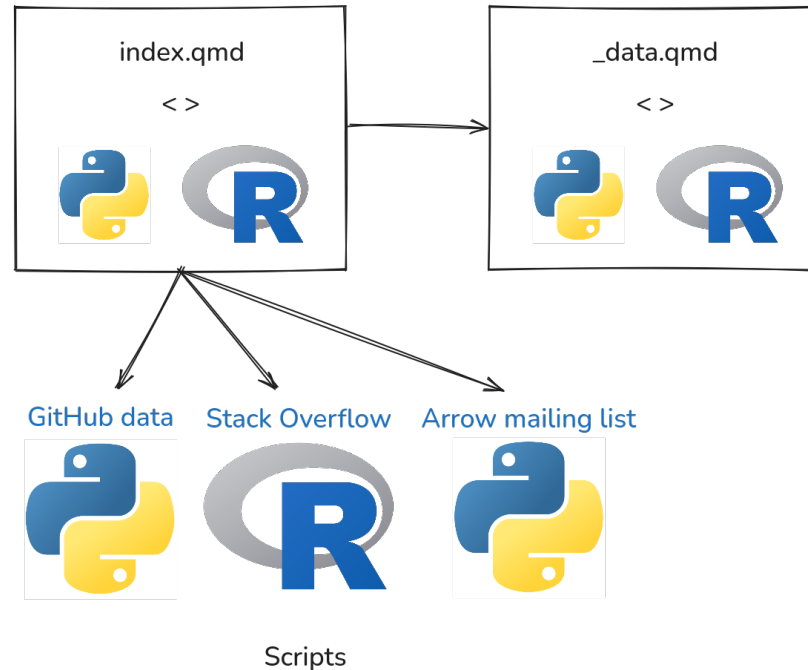
rpy2



transport method



# Combining R and Python



# Quarto Includes

```
# PyArrow
```{python}
#| label: py
#| warning: false
lang = "Python"
```
```

```
{{< include _data.qmd >}}
```

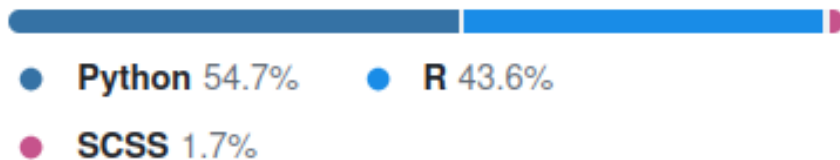
```
# R
```

```
```{python}
#| label: r
#| warning: false
lang = "R"
```
```

```
{{< include _data.qmd >}}
```

# How much R and Python?

## Languages



# Build curiosity for technology and ideas

Honest discussions



# Build curiosity for technology and ideas

Share, help, motivate!



# Build diverse collaborations

Contribute  
in your own way

- Different skill sets
- Choose right tools





# Build diverse collaborations

- Dashboard content
- GitHub Actions
- Quarto dashboard
- Pass data around
- Python and R scripts

**Talk to  
someone  
today**

**See what happens!**

**Thank you!**





# Dashboard



# GitHub repo



Illustrations were created at [canva.com](https://canva.com)