

# Github branch protection rules

# What is github branch protection rules

- You can create a branch protection rule to enforce certain workflows for one or more branches, such as requiring an approving review or passing status checks for all pull requests merged into the protected branch.
- One can set branch rule for free on public repo.
- For private repo you need to upgrade your github account (4\$ per month)

# Motivation for github branch protection rules

- Protect your branch against unexpected situation
- For example, in next.js pushing to main cause application deploy on vercel  
.Thus you want to apply rules e.g. approve push request before the merge to main is performed to prevent wrong timing of merge to main

# Set minimal branch protection rule 1/x

The screenshot shows the GitHub repository settings page for 'NathanKr / github-git-branch-rules-playground'. The 'Settings' tab is selected in the top navigation bar. In the left sidebar, the 'Branches' option is highlighted. The main content area is divided into two sections: 'Default branch' and 'Branch protection rules'. The 'Default branch' section shows 'main' as the default branch. The 'Branch protection rules' section shows a single rule for the 'main' branch, which is currently applied to 1 branch. The 'Edit' button for this rule is highlighted with a red arrow pointing to it.

NathanKr / github-git-branch-rules-playground Public

Code Issues Pull requests Actions Projects Wiki Security Insights **Settings**

General

Access

Collaborators

Moderation options

Code and automation

**Branches**

Tags

Actions

Webhooks

Environments

Codespaces

### Default branch

The default branch is considered the "base" branch in your repository, against which all pull requests and code commits are automatically made, unless you specify a different branch.

main

### Branch protection rules

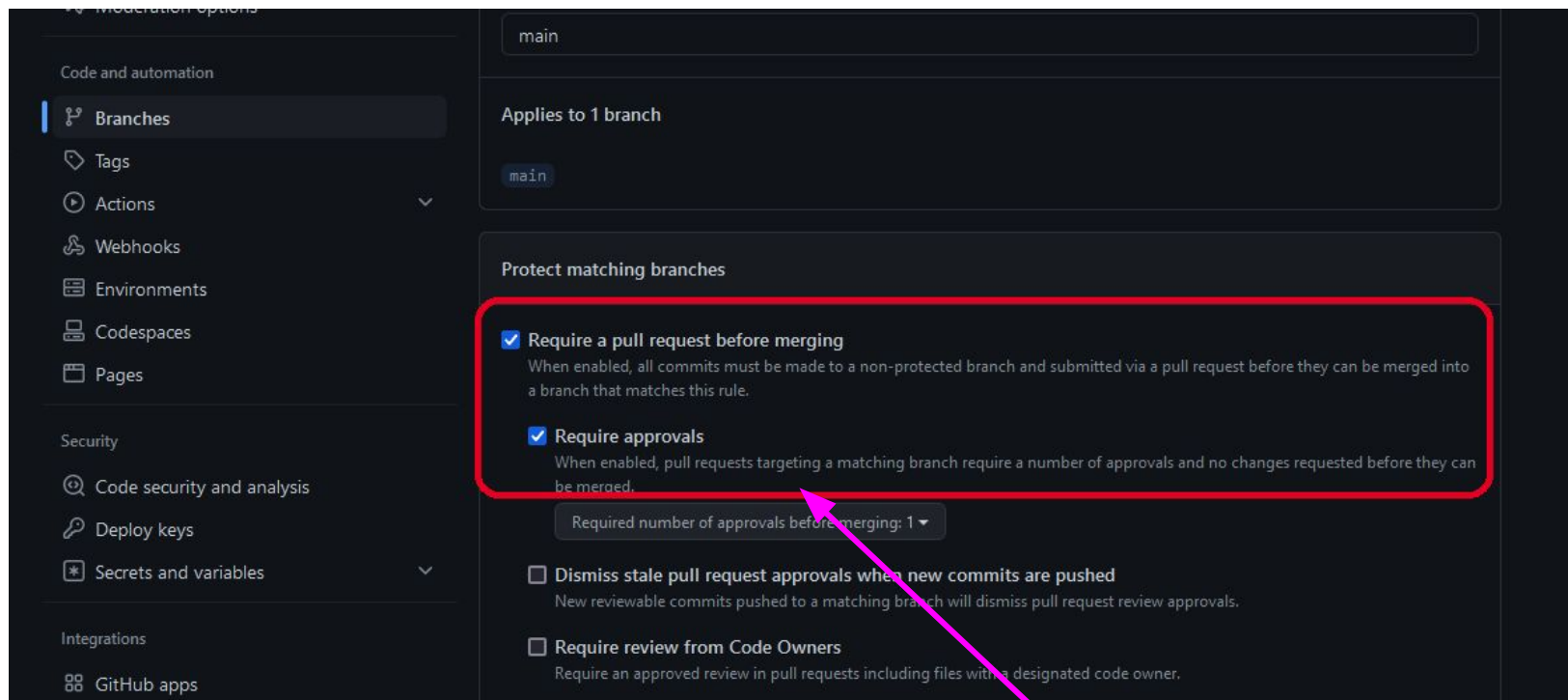
main

Currently applies to 1 branch

Edit Delete

Click Edit

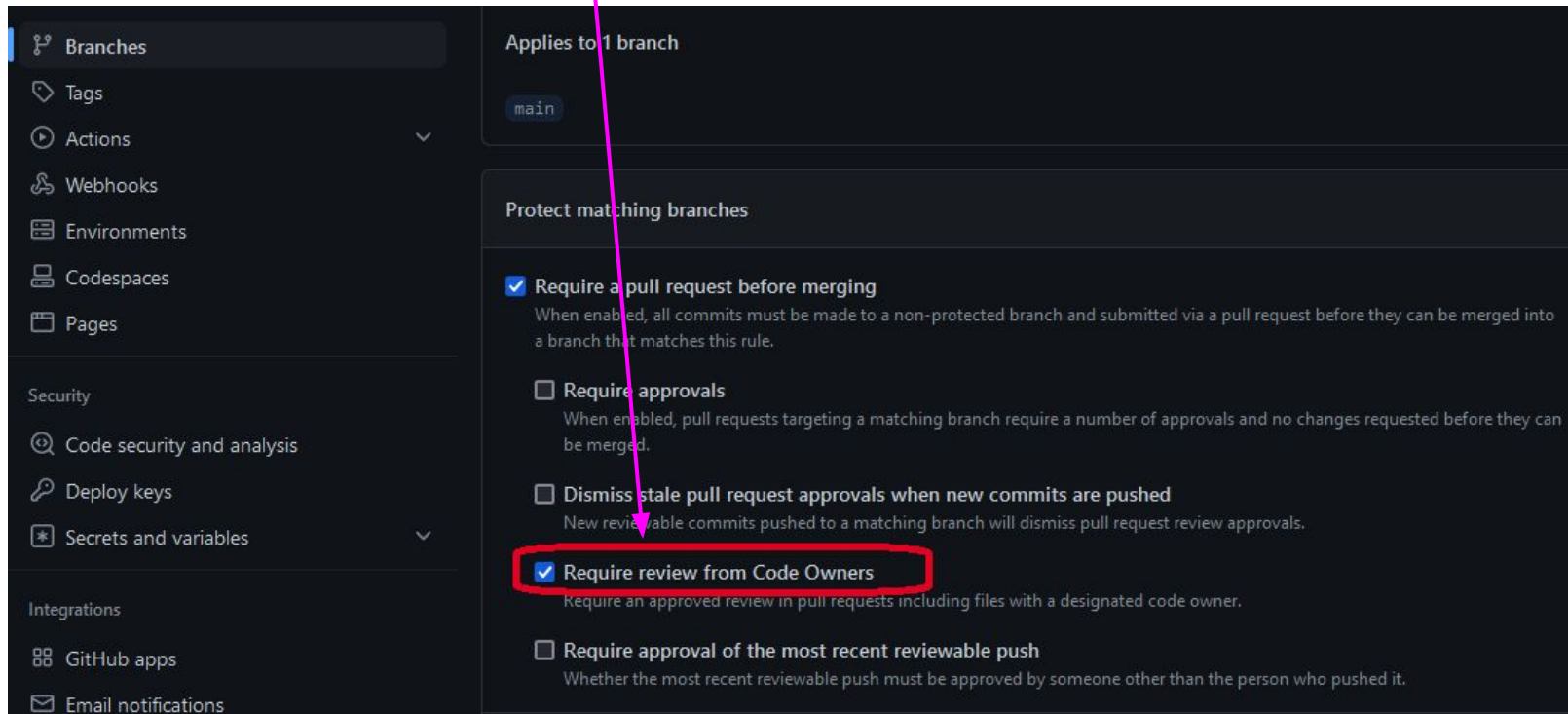
# Set minimal branch protection rule 2/x



Set a rule that requires pull request before merge to master.

# Set minimal branch protection rule 3/x

The prev option may be problematic In small organization and for freelancer. So you can replace “Require approvals” with this



Branches

Tags

Actions

Webhooks

Environments

Codespaces

Pages

Security

Code security and analysis

Deploy keys

Secrets and variables

Integrations

GitHub apps

Email notifications

Applies to 1 branch

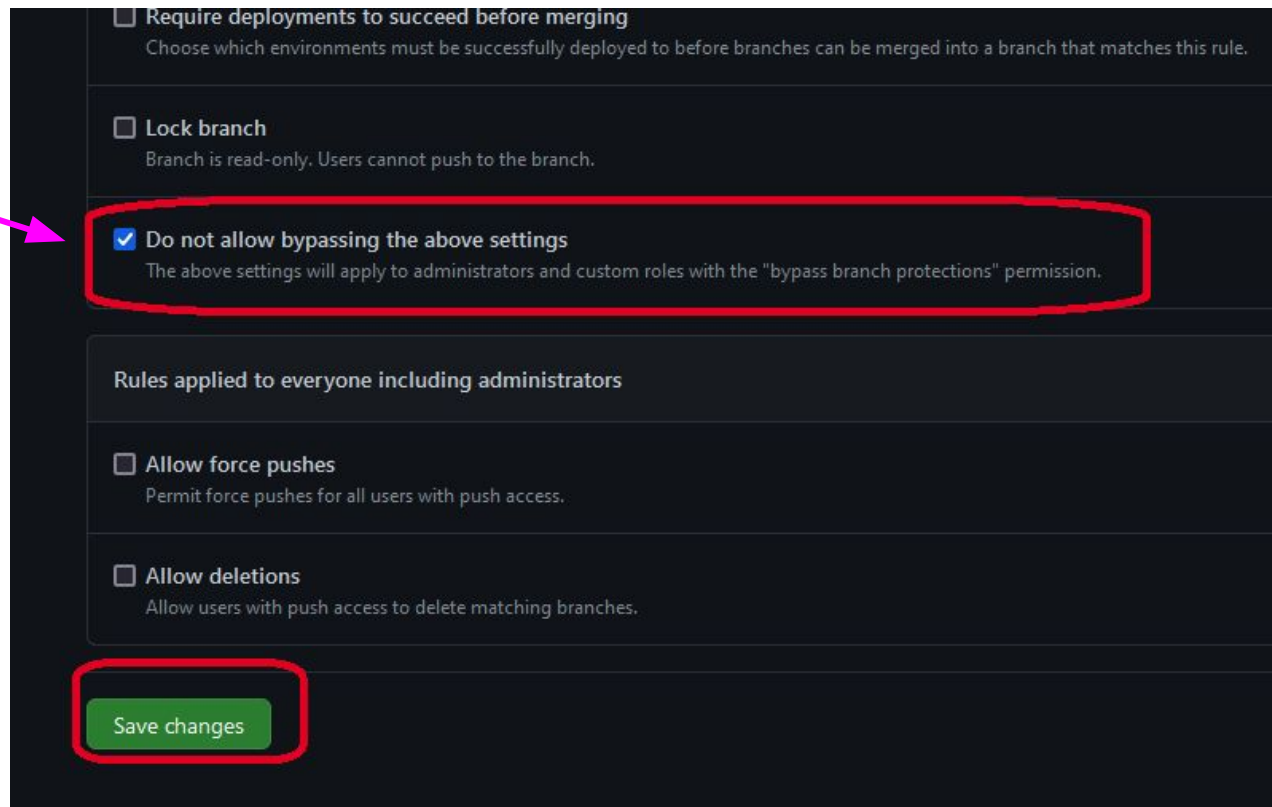
main

Protect matching branches

- ☒ **Require a pull request before merging**  
When enabled, all commits must be made to a non-protected branch and submitted via a pull request before they can be merged into a branch that matches this rule.
- ☐ **Require approvals**  
When enabled, pull requests targeting a matching branch require a number of approvals and no changes requested before they can be merged.
- ☐ **Dismiss stale pull request approvals when new commits are pushed**  
New reviewable commits pushed to a matching branch will dismiss pull request review approvals.
- ☒ **Require review from Code Owners**  
Require an approved review in pull requests including files with a designated code owner.
- ☐ **Require approval of the most recent reviewable push**  
Whether the most recent reviewable push must be approved by someone other than the person who pushed it.

# Set minimal branch protection rule 4/x

This is crucially important if the administrator is also a developer. Rules are not enforced for admin if not checked



The screenshot shows the GitHub branch protection settings interface. A red rounded rectangle highlights the 'Do not allow bypassing the above settings' option, which is checked. A purple arrow points from the explanatory text box on the left to this option. Another red rounded rectangle highlights the 'Save changes' button at the bottom. The interface includes sections for 'Require deployments to succeed before merging', 'Lock branch', and 'Rules applied to everyone including administrators'.

- ☐ **Require deployments to succeed before merging**  
Choose which environments must be successfully deployed to before branches can be merged into a branch that matches this rule.
- ☐ **Lock branch**  
Branch is read-only. Users cannot push to the branch.
- ☒ **Do not allow bypassing the above settings**  
The above settings will apply to administrators and custom roles with the "bypass branch protections" permission.

**Rules applied to everyone including administrators**

- ☐ **Allow force pushes**  
Permit force pushes for all users with push access.
- ☐ **Allow deletions**  
Allow users with push access to delete matching branches.

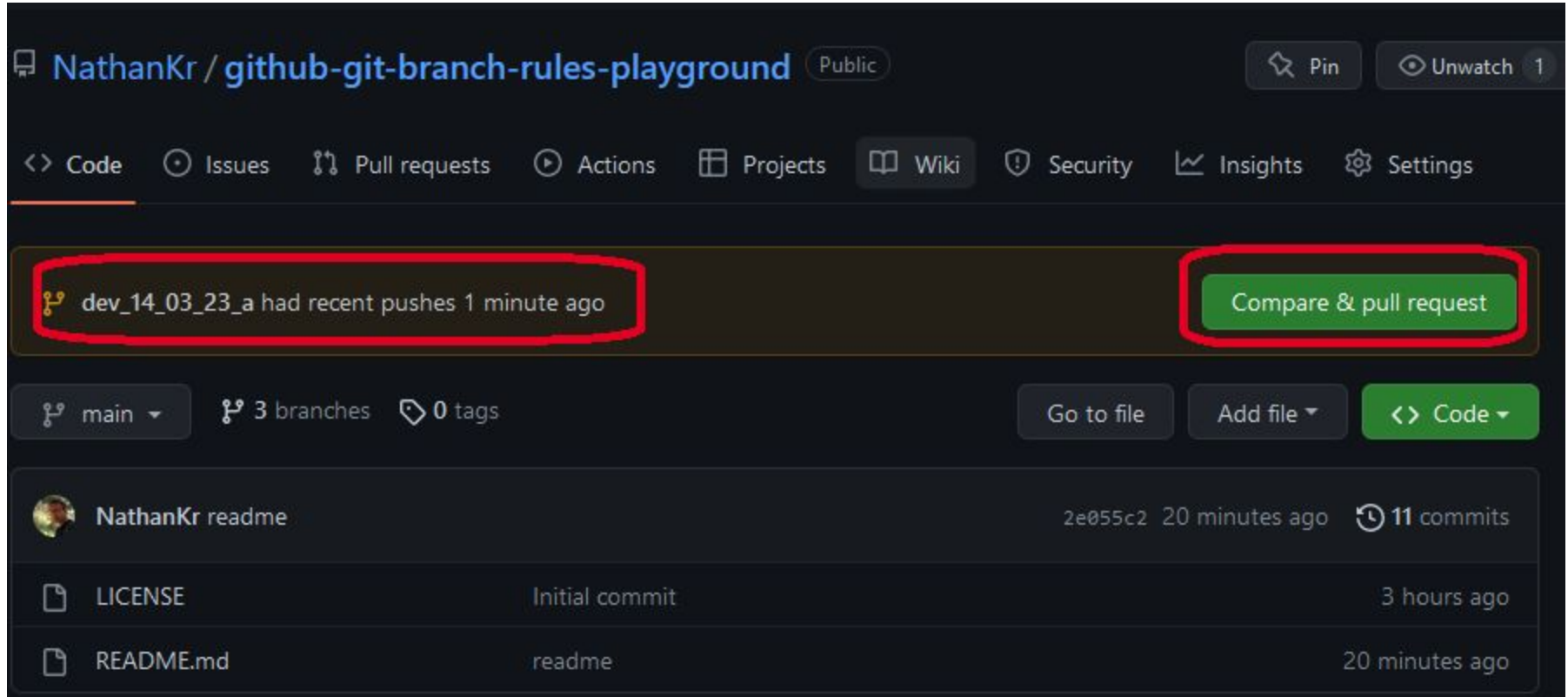
**Save changes**

# Cmd for blocked git operation

```
PS F:\Nathan\Misc\GitHub\github-git-branch-rules-playground> git push
Fatal: HttpRequestException encountered.
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 301 bytes | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
remote: error: GH006: Protected branch update failed for refs/heads/main.
remote: error: At least 1 approving review is required by reviewers with write access.
To https://github.com/NathanKr/github-git-branch-rules-playground
! [remote rejected] main -> main (protected branch hook declined)
error: failed to push some refs to 'https://github.com/NathanKr/github-git-branch-rules-playground'
PS F:\Nathan\Misc\GitHub\github-git-branch-rules-playground> █
```



# Need to create pull request



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Code Issues Pull requests Actions Projects Wiki Security Insights Settings

dev\_14\_03\_23\_a had recent pushes 1 minute ago

Compare & pull request

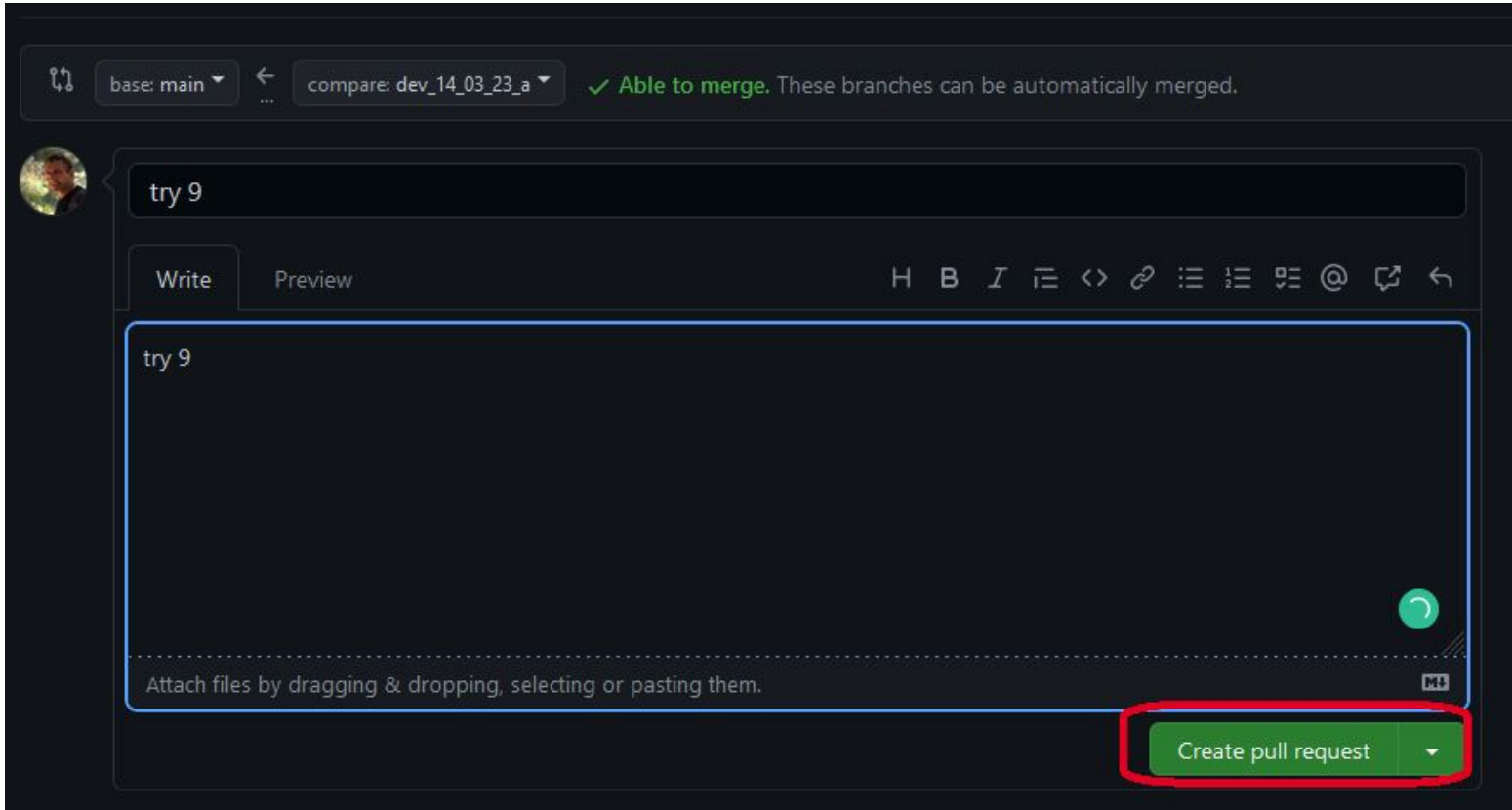
main 3 branches 0 tags

Go to file Add file <> Code

NathanKr readme 2e055c2 20 minutes ago 11 commits

LICENSE	Initial commit	3 hours ago
README.md	readme	20 minutes ago

# create pull request



The screenshot shows the GitHub interface for creating a pull request. At the top, the base branch is 'main' and the compare branch is 'dev\_14\_03\_23\_a'. A green checkmark indicates 'Able to merge. These branches can be automatically merged.' Below this, the user's profile picture is visible next to the title 'try 9'. The 'Write' tab is selected, and the body text is 'try 9'. A rich text editor toolbar is visible above the text area. At the bottom right, the 'Create pull request' button is highlighted with a red rectangle.

base: main ← compare: dev\_14\_03\_23\_a ✓ Able to merge. These branches can be automatically merged.

try 9

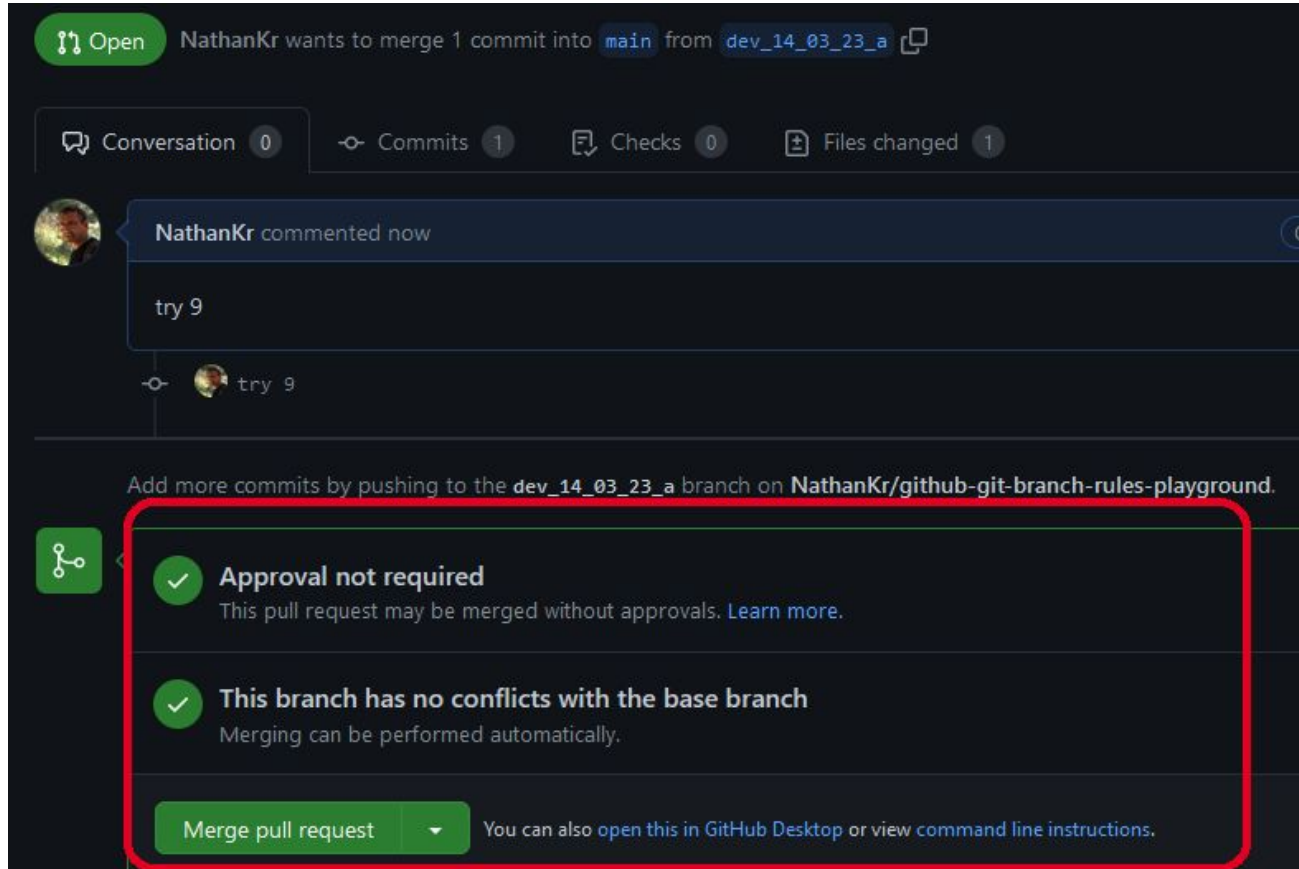
Write Preview H B I ≡ <> 🔗 ≡ ≡ ≡ @ ↗ ↶

try 9

Attach files by dragging & dropping, selecting or pasting them.

Create pull request ▼

# Approve and merge



The screenshot shows a GitHub pull request interface. At the top, a green button labeled "Open" is next to the text "NathanKr wants to merge 1 commit into `main` from `dev_14_03_23_a`". Below this, a navigation bar shows "Conversation 0", "Commits 1", "Checks 0", and "Files changed 1". A comment by NathanKr says "try 9". Below the comment, a message states: "Add more commits by pushing to the `dev_14_03_23_a` branch on `NathanKr/github-git-branch-rules-playground`." A red box highlights the mergeability section, which contains two green checkmarks: "Approval not required" (with a link to "Learn more") and "This branch has no conflicts with the base branch" (with the note "Merging can be performed automatically."). At the bottom of the red box is a green button labeled "Merge pull request" and a dropdown arrow, followed by the text "You can also [open this in GitHub Desktop](#) or view [command line instructions](#)."

Open NathanKr wants to merge 1 commit into `main` from `dev_14_03_23_a`

Conversation 0 Commits 1 Checks 0 Files changed 1

NathanKr commented now

try 9

try 9

Add more commits by pushing to the `dev_14_03_23_a` branch on `NathanKr/github-git-branch-rules-playground`.

Approval not required  
This pull request may be merged without approvals. [Learn more](#).

This branch has no conflicts with the base branch  
Merging can be performed automatically.

Merge pull request You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

# Merge results

try 9 #4

Merged NathanKr merged 1 commit into `main` from `dev_14_03_23_a` now

Conversation 0 Commits 1 Checks 0 Files changed 1

NathanKr commented 2 minutes ago

try 9

try 9 34769a0

NathanKr merged commit 85ac87e into `main` now

**Pull request successfully merged and closed**

You're all set—the `dev_14_03_23_a` branch can be safely deleted.

Delete branch

## Main branch locally need pull

```
6
7 try 9 You, 46 seconds ago • try 9 ...
```

TERMINAL GITLENS

To https://github.com/NathanKr/github-git-branch-rules-playground  
! [rejected] main -> main (fetch first)  
error: failed to push some refs to 'https://github.com/NathanKr/github-git-branch-rules-playground'  
hint: Updates were rejected because the remote contains work that you do  
hint: not have locally. This is usually caused by another repository pushing  
hint: to the same ref. You may want to first integrate the remote changes  
hint: (e.g., 'git pull . .') before pushing again.  
hint: See the 'note about fast-forwards' in 'git push --help' for details.

PS F:\Nathan\Misc\GitHub\github-git-branch-rules-playground>

main ↺ 0 1 1 🔍 0 0 Ln 7, Col 6 Spaces: 4 UTF-8 CRLF Markdown 🔔 Go Live ✍ Prettier

# repository

[github-git-branch-rules-playground](#)

# References

[official docs](#)

[GitHub branch rules \(protect your git branches\)](#) - JUne 2022