POWERING POTENTIAL

BRANCHING

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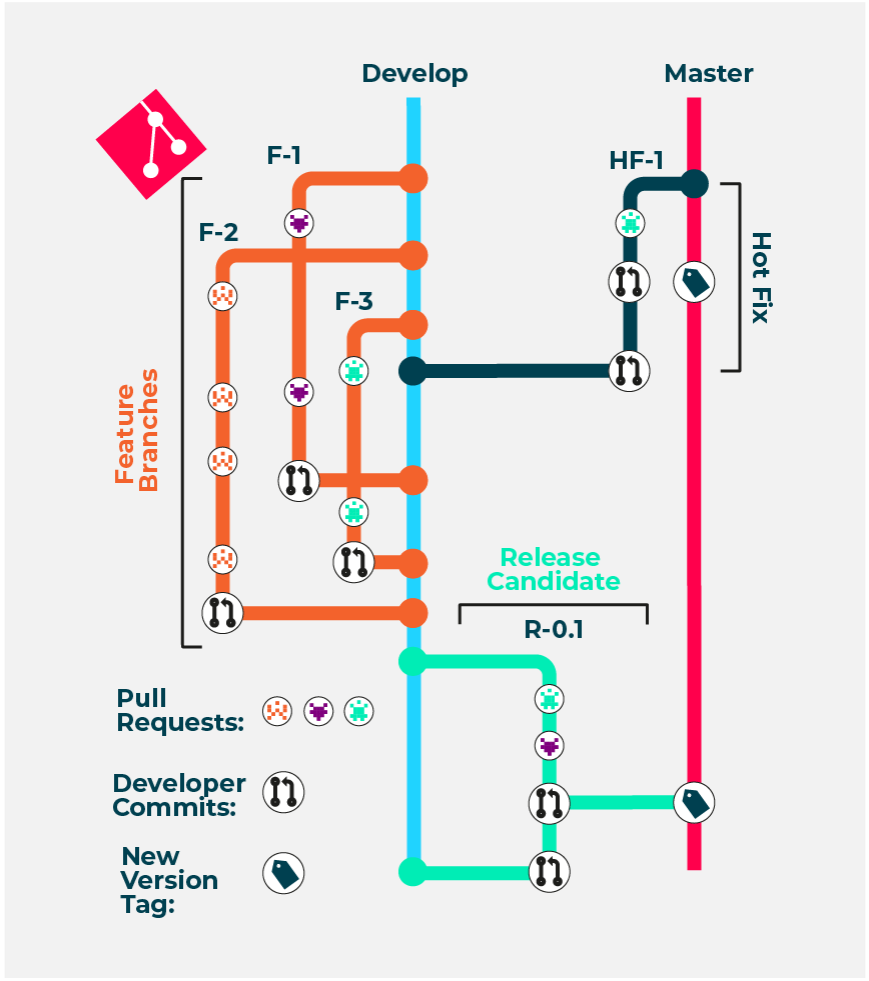
Branching in Git helps us to define workflows that make sure the code that's being delivered is in the best state possible. That way, we minimise risks for any errors or crashes.

With Version Control Systems, like Git, we can separate the codebase on many different branches.

This feature can be utilised for isolating the development and testing of new features from working code that is running on a production environment.

WORKFLOW EXAMPLE



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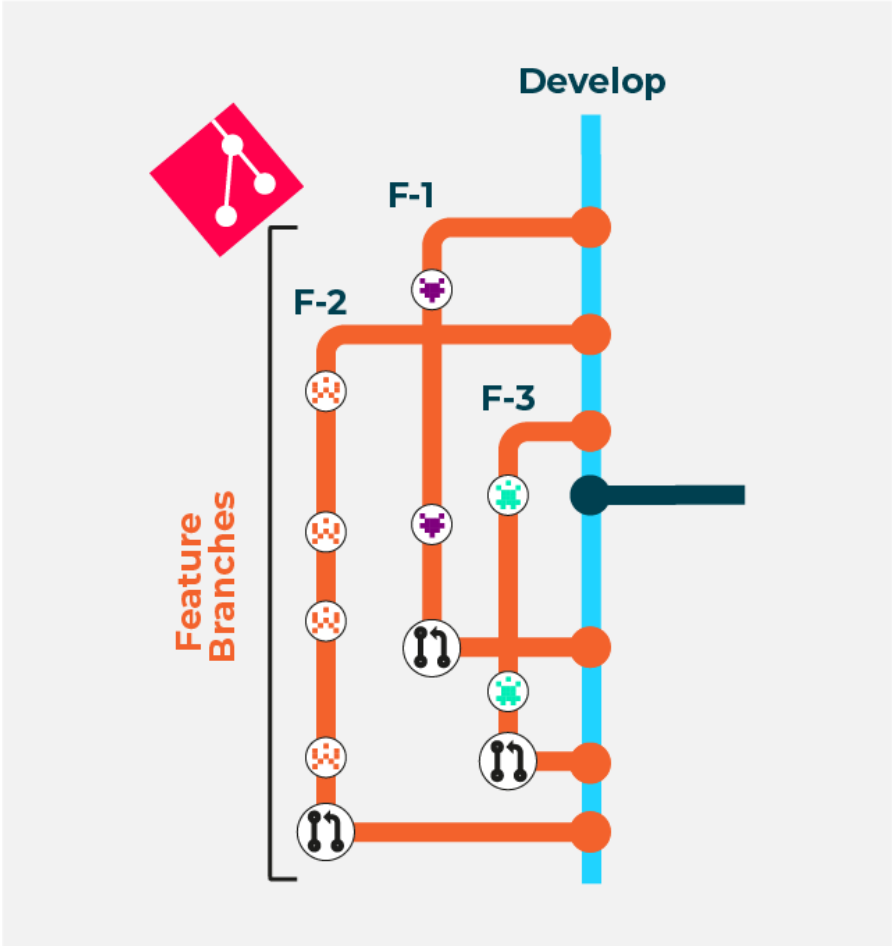
WORKFLOW EXAMPLE -

NEW APPLICATION FEATURES



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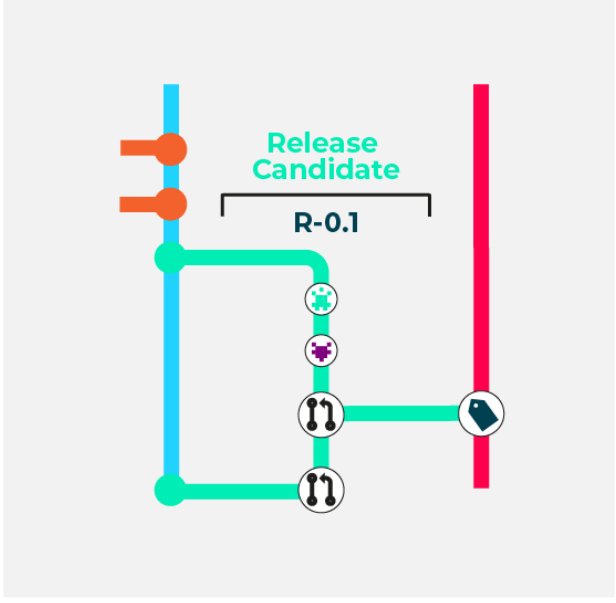
WORKFLOW EXAMPLE -

RELEASES



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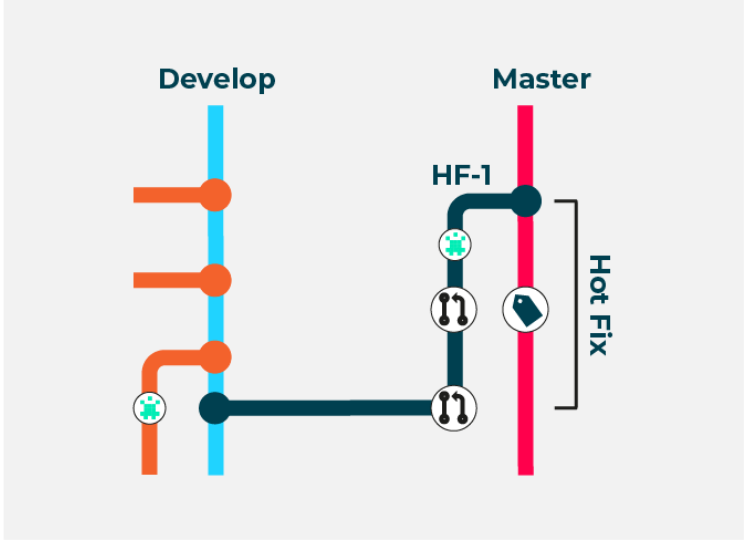
WORKFLOW EXAMPLE -

HOT FIXES



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CREATING AND BRANCHES

Command	Function
`git branch`	Show all branches in current repository
`git branch [NEW_BRANCH_NAME]`	Create a new branch
`git checkout [BRANCH_NAME]`	Switch to a branch
`git checkout -b [BRANCH_NAME]`	Switch to a branch; create branch if it doesn't exist
`git branch -d [BRANCH_NAME]`	Delete a branch
`git push --delete origin [BRANCH_NAME]`	Delete a branch in your remote repository


```
      E---F---G issue
     /
A---B---C---D master
```

```
      E---F---G issue
     /        \
A---B---C---D---H master
```


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CONFLICTS

app.py at commit B

`hello = “Hello?”`
 	
`print(hello)`

- The following would cause a conflict when trying to merge at commit

app.py at commit D	app.py at commit G

`hello = “Hello World!”`
 	
`print(hello)`
	`user = “Harry”`
	`hello = f“Hello ${user}”`
	
	`print(hello)`

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Reverting in Git is a forward-moving way of undoing changes on a repository.

Reviewing the history of a repository

Command	Function
`git log`	Shows the commit history of the current branch
`git log [BRANCH_NAME]`	Passing an argument through allows you to display the commit history of a specific branch
`git log --oneline`	Shows a simplified view of the commit history
`git log --branches=*`	Shows the commit history for all branches in the current repository

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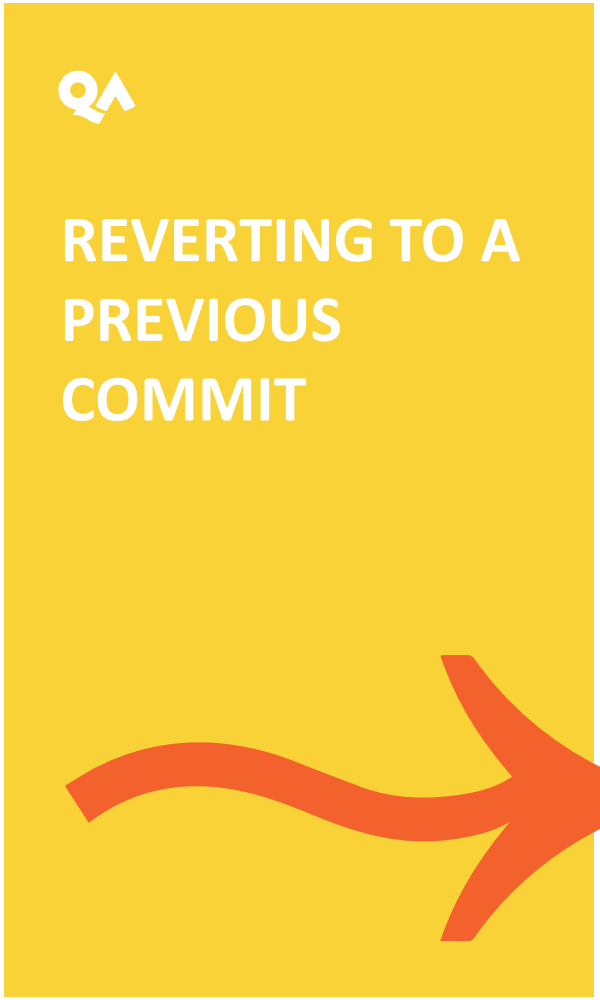
GIT LOG

- When you run git log, it should look like this

```
commit 0cf7b874ada29ad4907476afda1bb845a3be39ab (HEAD -> master, origin/master, origin/HEAD)
Author: htr-volker <htr.volker@gmail.com>
Date:   Thu Jul 23 10:05:35 2020 +0100

    another new commit

commit 53e1dbbdc34d79c599c4925a0dc6aa4fb9d5a35d
Author: htr-volker <htr.volker@gmail.com>
Date:   Thu Jul 23 09:54:41 2020 +0100

    little comment addition

commit c263f9e4ce03319e4139ec510f59cfe86b39b418
Merge: 6031e56 e057e3f
Author: htr-volker <57865118+htr-volker@users.noreply.github.com>
Date:   Thu May 14 10:18:39 2020 +0100

    Merge pull request #8 from htr-volker/readme-cleanup

    Update README.md
```



REVERTING TO A PREVIOUS COMMIT

Command	Function
`git revert [COMMIT]`	Creates new commit that reverts changes to the code its state at the specified commit
`git revert HEAD`	Creates a new commit that reverts the repository back to the state of the previous commit
`git reset --hard [COMMIT]`	Reverts changes to the code to the state at the specified commit and discards the history after that point

Here you would refer to a commits hash code e.g. 483856a

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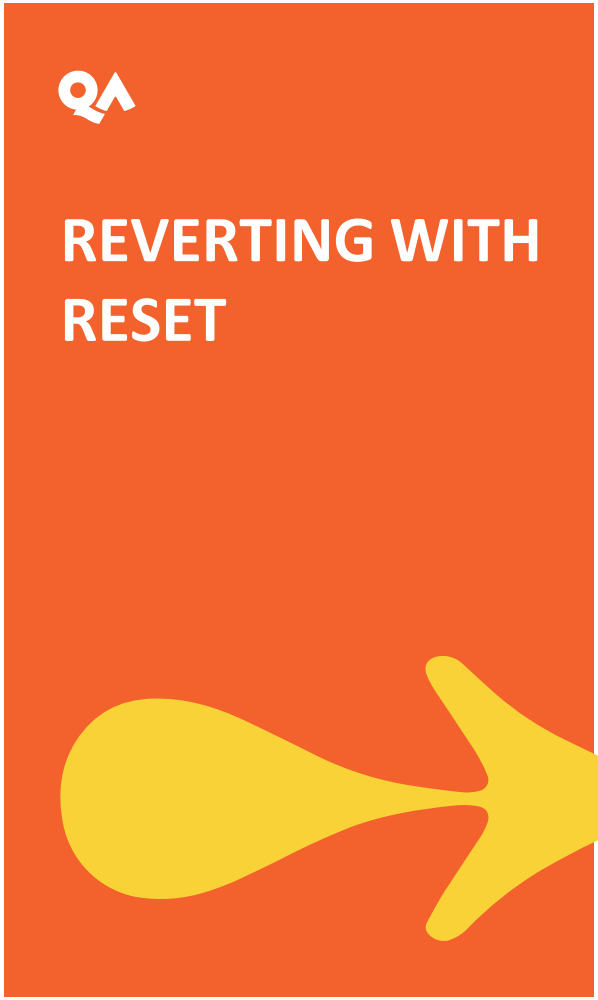

git reset --hard bcabb84

- **This command will return the state to the selected commit**
  - Using Revert to go Back to the Latest Commit
    - git reset --hard