

# Merge

git init

touch m1.txt

git add .

git commit -m "m1 added"

git branch feature

git checkout feature

touch f1.txt

git add .

git commit -m "f1 added"

git checkout master

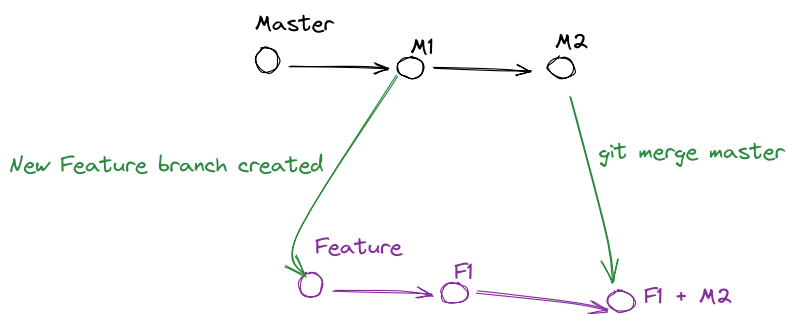
touch m2.txt

git add .

git commit -m "m2 added"

git checkout feature

git merge master



```
expleo@MacBook-Pro gitdemo % git log
commit 2bfca7f41be32f06c2bca73de282adb01359fd10 (HEAD -> feature)
Merge: b7d42dd 65205cf
Author: Colm Harrington <colm.harrington@gmail.com>
Date: Mon Oct 24 15:16:03 2022 +0100
```

Merge branch 'master' into feature  
merged changes from master for m2 changes

```
commit 65205cf3f787fd5edaceb827eab2d2f0f0d5db30 (master)
```

```
Author: Colm Harrington <colm.harrington@gmail.com>
```

```
Date: Mon Oct 24 15:12:58 2022 +0100
```

```
m2.txt file added
```

```
commit b7d42ddfcc0429a4c33b97641436c896c8029987
```

```
Author: Colm Harrington <colm.harrington@gmail.com>
```

```
Date: Mon Oct 24 15:07:50 2022 +0100
```

```
f1.txt file added
```

```
commit a4cec1ebb25fcb0f58b7595ec20ea0cd9682e752
```

```
Author: Colm Harrington <colm.harrington@gmail.com>
```

```
Date: Mon Oct 24 15:04:41 2022 +0100
```

```
m1.txt file added
```

```
expleo@MacBook-Pro gitdemo %
```

Notes:

- git merge is a non-destructive operation
- creates a new merge commit in the feature branch

## Rebase

```
git init
```

```
touch m1.txt
```

```
git add .
```

```
git commit -m "m1 added"
```

```
git branch feature
```

```
git checkout feature
```

```
touch f1.txt
```

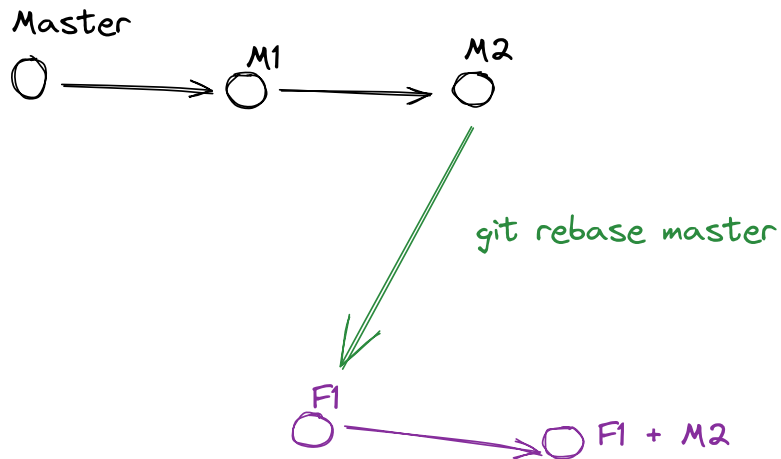
```
git add .
```

```
git commit -m "f1 added"
```

```
git checkout master
```

```
touch m2.txt
git add .
git commit -m "m2 added"
```

```
git checkout feature
git rebase master
```



```
expleo@MacBook-Pro gitdemo2 % git log
commit defb5aeaa929a1ed646d2b4dde978ad50a0d1aec (HEAD -> feature)
Author: Colm Harrington <colm.harrington@gmail.com>
Date:   Mon Oct 24 15:44:31 2022 +0100

    f1 added

commit f0a1feb63192afacd8d2c3fc23f7b4d82419d780 (master)
Author: Colm Harrington <colm.harrington@gmail.com>
Date:   Mon Oct 24 15:45:10 2022 +0100

    m2 added

commit a601efe203625430bbc5210adafb23f481982e2a
Author: Colm Harrington <colm.harrington@gmail.com>
Date:   Mon Oct 24 15:39:08 2022 +0100

    m1 added
expleo@MacBook-Pro gitdemo2 %
```

Notes:

- moves feature branch to tip of master

- re-writes history
- clean & linear history
  - but we pay the price of losing some info