

# Git Good

— git commit -m "Beste kurset i år" —

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# Agenda

- Hva er Git og hvorfor bruke versjonskontroll?
- Hvordan bruke Git?
- Litt oppgaver
- Dele kode: Hvordan bruke Git med GitHub?
- Litt oppgaver
- Tips og oppsummering

# Git

- Distribuert versjonskontrollsystem
- Tracke endringer i filer
  - Hva ble endret?
  - Hvem gjorde endringen?
  - Hvorfor ble endringen gjort?
- Koordinere endringer mellom flere personer



# Hva kan jeg bruke versjonskontroll til?

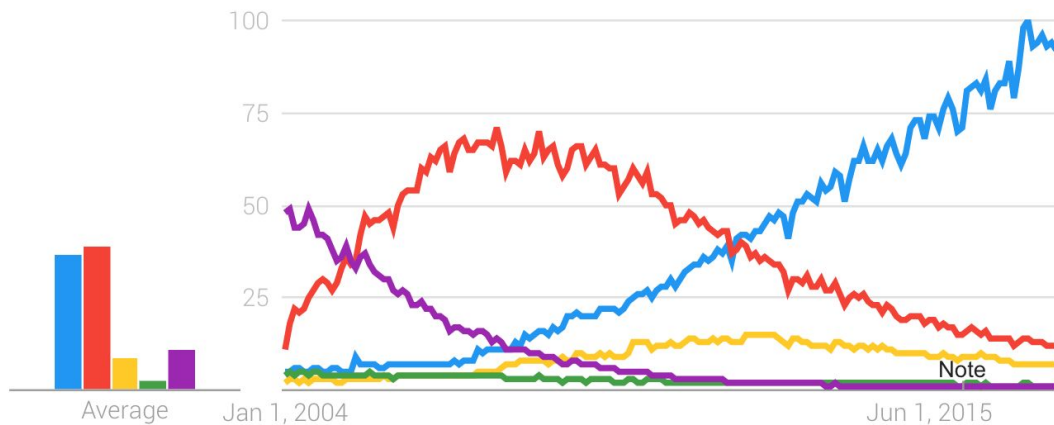
- Kode
  - Øvinger
  - Større prosjekter
- Tekst
  - Masteroppgave
  - Statutter og regler (Abakus)
- UX og grafisk design
  - Tracke utviklingen av logoer og layouts
- Alt som er en fil :)

# Hvorfor Git?

Interest over time

Google Trends

- Git
- Apache Subversion
- Mercurial
- Perforce Helix
- Concurrent Versions System

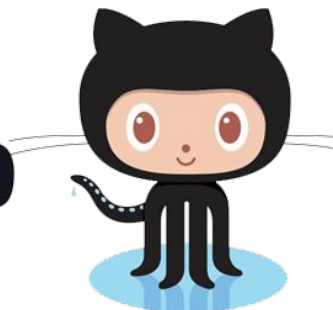


[Google Trends](#)

# Git og GitHub



**GitHub**



**GitLab**

# Git og GitHub

```
Barteguiden-App — git log — git — less + git log — 118x56

commit 88cd407a740767a1dd8dc9523ca18359692048a why the app sends the request.
Author: Anna Kaset <annakast@stud.ntnu.no>
Date:   Sun Jan 15 20:13:16 2017 +0100

    Update README.md

commit 777fa0a76af49092c69fb5d6e2987a3f90280c4d
Merge: 0235099 61823f9
Author: Anna Kaset <annakast@stud.ntnu.no>
Date:   Sun Jan 15 17:58:51 2017 +0100

    Merge pull request #120 from Studentmediene/issue-100

    Icons for promoted events

commit 61823f9b7c50580ab49c77029166ce7013c998a1
Author: Anna Kaset <annakast@gmail.com>
Date:   Tue Jan 10 20:30:45 2017 +0100

    Move star in EventListItem slightly

commit b93d12042df6837bf8ca442e7374a08ea8250857
Author: see193 <see11993@gmail.com>
Date:   Wed Oct 12 20:01:39 2016 +0200

    Add star icon and text for promoted events

    issue #100

commit 587af4c1ef5fcc29ef28b1a2b47626c2db19ca3d
Author: see193 <see11993@gmail.com>
Date:   Wed Oct 12 19:59:16 2016 +0200

    Add star icon for promoted events

    issue #100

commit 0235099529b682ba86a35c1db542481c36d3aafb
Merge: eac4037 e40b310
Author: Anna Kaset <annakast@stud.ntnu.no>
Date:   Sun Jan 15 17:40:44 2017 +0100

    Merge pull request #124 from Studentmediene/issue-117

    Add option to push notification before a favorited event starts

commit e40b310329083c1c70ff43007389780b68568b5
Author: Anna Kaset <annakast@gmail.com>
Date:   Sat Dec 3 23:33:26 2016 +0100

    Do not request notification permissions before user activates setting

    This way, users will more likely understand why the app sends the request.

commit 686880aff36b42103ee81d1ac6450c40075c8df
```

The screenshot shows the GitHub web interface for the repository 'annakastet / git-kurs'. The repository is marked as 'Private'. It shows 1 commit, 1 branch, 0 releases, and 1 contributor. The 'master' branch is selected. The repository contains a 'README.md' file. The README content includes a title 'Git-kurs', a section 'Installasjon' (Installation) with instructions for downloading files and using git, and a section 'Oppgaver' (Exercises). The URL in the address bar is 'https://github.com/annakastet/git-kurs#installasjon'.

# Terminal 101

```
cd Path/Til/Din/Mappe
```

Gå til Path/Til/Din/Mappe

```
ls
```

Vis innhold i mappen du er i

```
mkdir "Navn på din mappe"
```

Lag en ny mappe



# Synkronisering



Google Drive

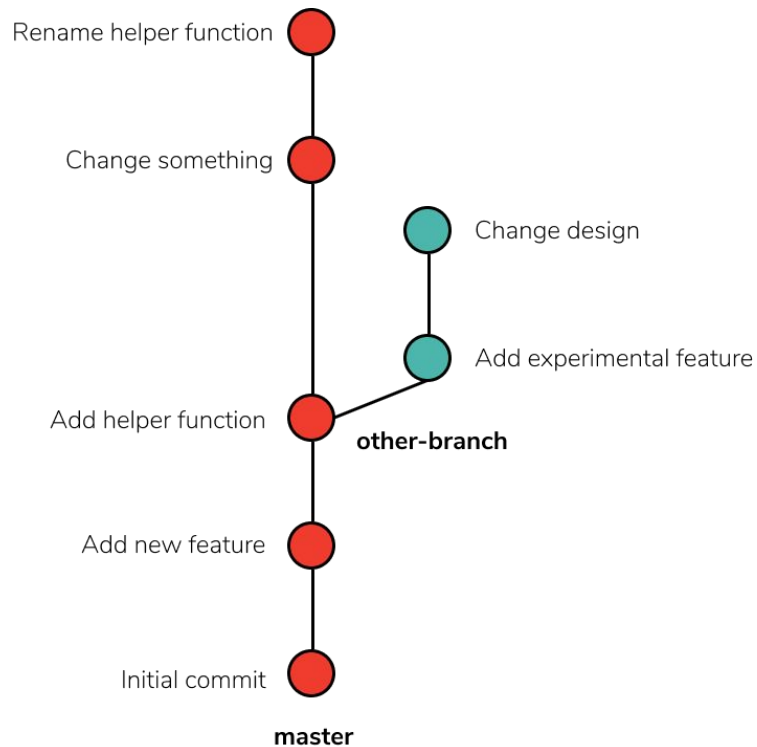


**Dropbox**

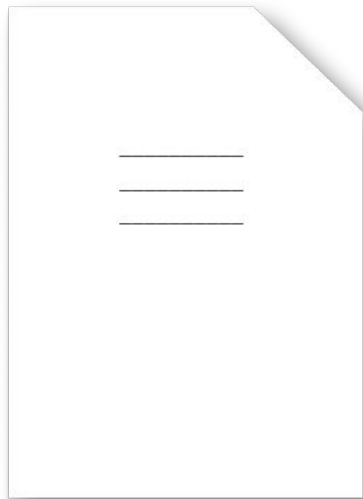


OneDrive

# Git-historikk



# Hva er en forandring?



README.md

- # Over skrift
- + # Overskrift

Her er noen greier som ikke har blitt forandret

- + Har også lagt til en linje her
- Og fjernet denne

# Commit

- SHA-1 hash
  - Forfatter
  - Tid og dato
  - Commit-melding
  - Forandring
  - Tidligere historie

```
commit 7c627922f26dca7729dce14d8e23130720f42201
```

```
Author: Anna Kastet
```

```
Date: Thu Sep 21 14:45:15 2017 +0200
```

```
Add README.md
```

# > git log

- Viser committene i en liste. Nyeste øverst.

```
commit 7c627922f26dca7729dce14d8e23130720f42201
```

```
Author: Anna Kastet
```

```
Date: Thu Sep 21 14:45:15 2017 +0200
```

```
Add README.md
```

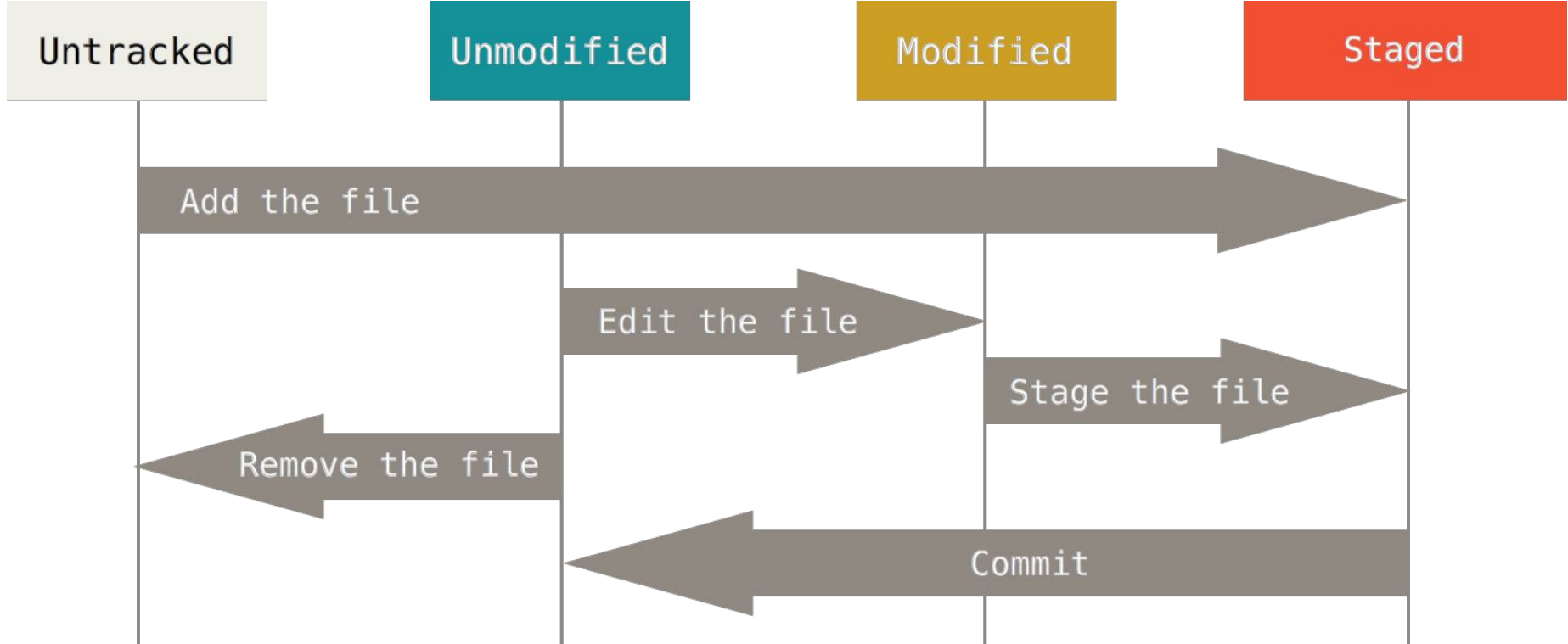
```
commit 9352ac099a6496594ca9e93842c20dfec2369a71
```

```
Author: Anna Kastet
```

```
Date: Thu Sep 21 14:41:39 2017 +0200
```

```
Initial commit
```

## > git status

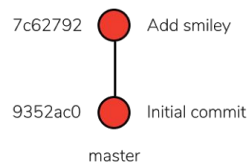


# > git status

Untracked

Modified

Staged



# Ny fil: README.md

Untracked



README.md

Modified

Staged





> git add README.md



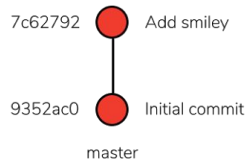
Untracked

Modified

Staged



README.md



# > git commit

Untracked

Modified

Staged



# Endring i fil: README.md

Untracked

Modified

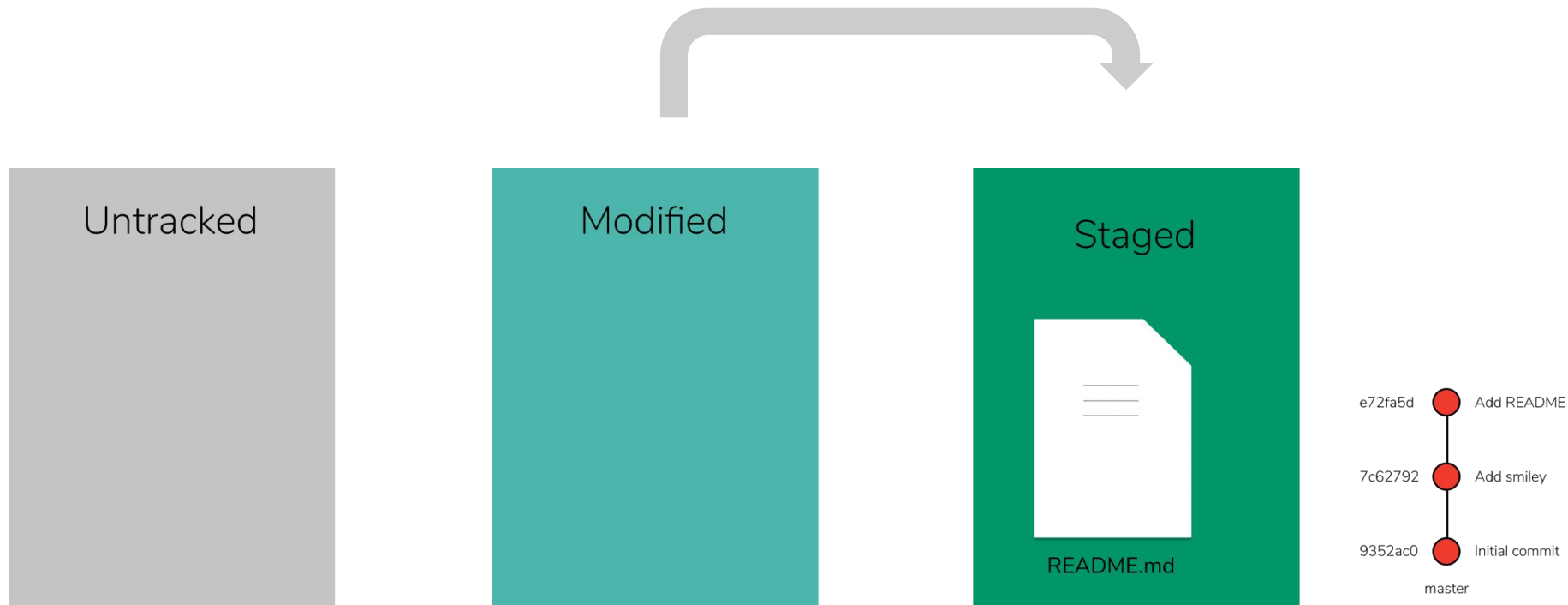


README.md

Staged



> git add README.md

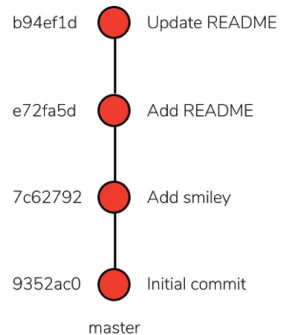


# > git commit

Untracked

Modified

Staged



# Git-kommandoer så langt:

git status	Se statusen til filene dine
git add <filnavn>	Legg til en fil i neste commit
git commit	Comitte
git log	Vise commit-loggen

# Opppgave 1-5

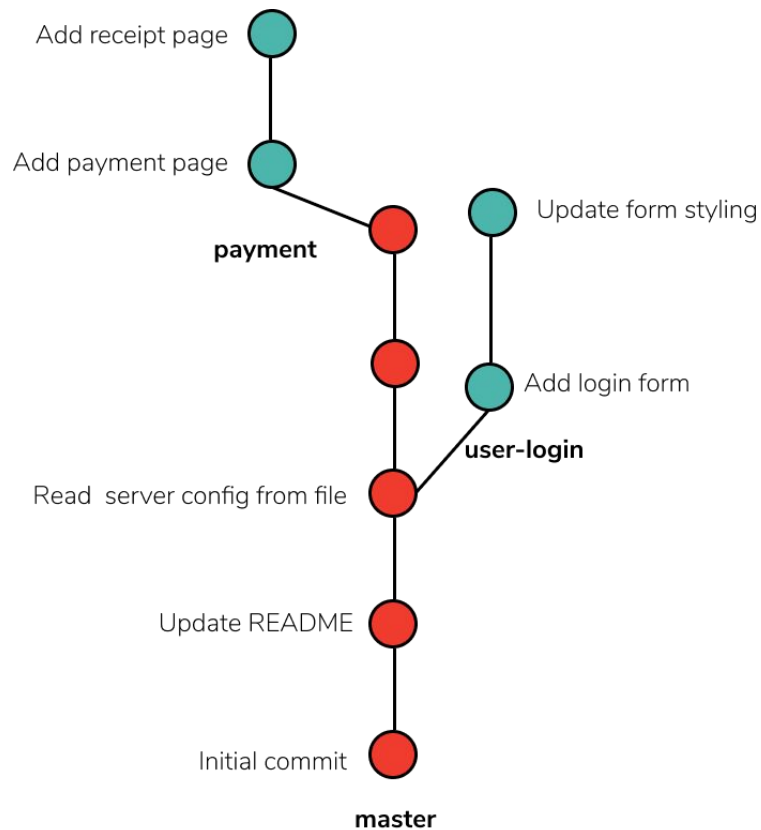
<https://github.com/annakastet/git-kurs>

# Dele kode

- Klone et repository (dvs. kopiere fra GitHub til maskinen din)
  - git clone [https://github.com/\[USERNAME\]/\[REPONAME\].git](https://github.com/[USERNAME]/[REPONAME].git)
- Pull
- Push




# Branches





# Pull requests

## Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).

 base: **master** ... compare: **user-login** ✓ Able to merge. These branches can be automatically merged.



A title describing the pull request 


Write

Preview

AA ▾ B i “ < > 🔗 ☰ ☷ ☰ ↶ @ ★

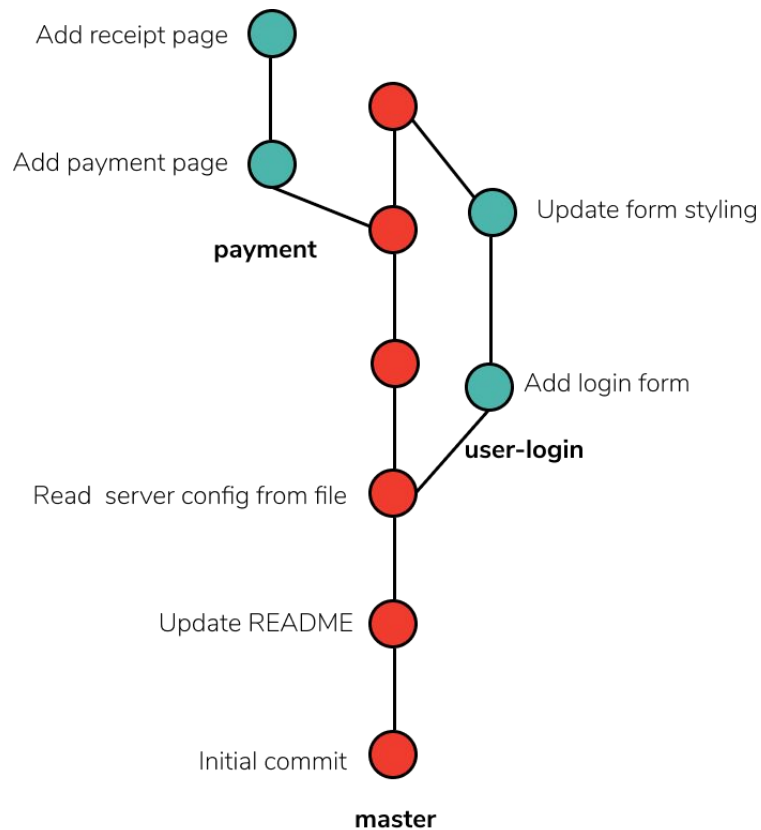
Describe the feature more here. The better your description, the easier it will be for your teammates to understand and review the Pull Request.

Attach files by dragging & dropping, [selecting them](#), or pasting from the clipboard.

 Styling with Markdown is supported

Create pull request

# Branches



# Merge



# Merge conflicts

- Du bør planlegge arbeid for å unngå
- **Men de vil komme**
- ... og er ikke så skumle

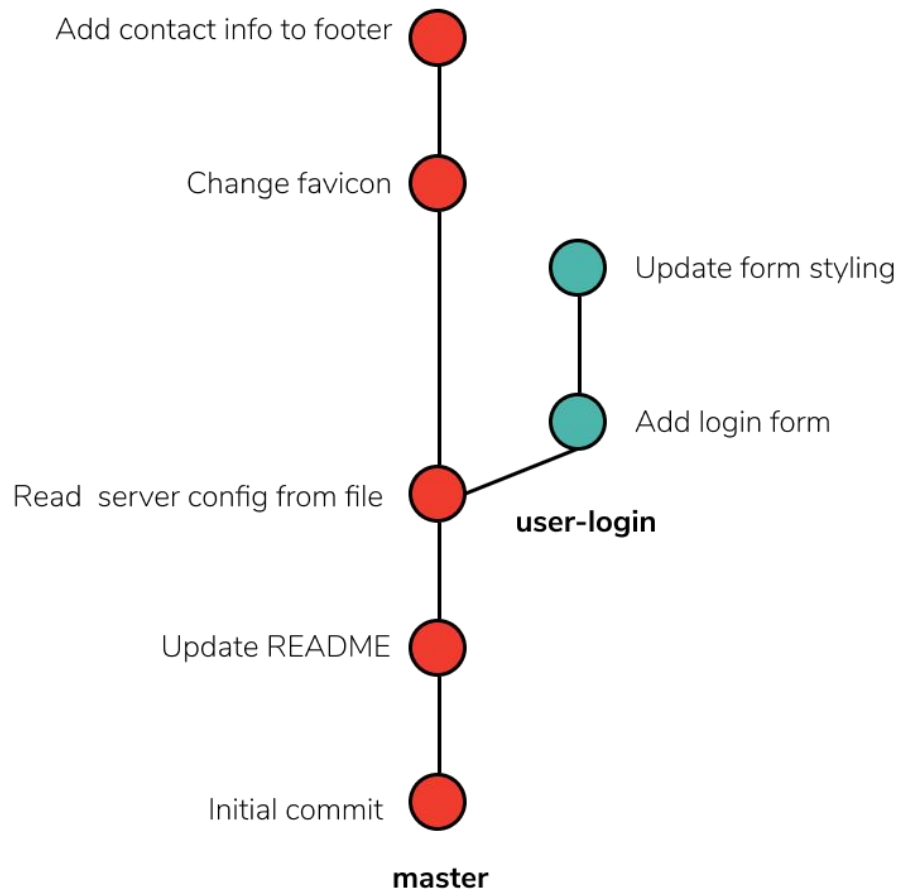
# Git-kommandoer så langt:

git status	Se statusen til filene dine
git add <filnavn>	Legg til en fil i neste commit
git commit	Comitte
git log	Vise commit-loggen
git branch <branchnavn>	Oppretter nye branch med navn <branchnavn>
git checkout <branchnavn>	Hoppe over på ny branch med navn <branchnavn>
git clone	Kopiere eit GitHub-repo ned til maskinen din
git pull origin <branchnavn>	Hente data
git push origin <branchnavn>	Dytte data opp

# Opppgave 6-9

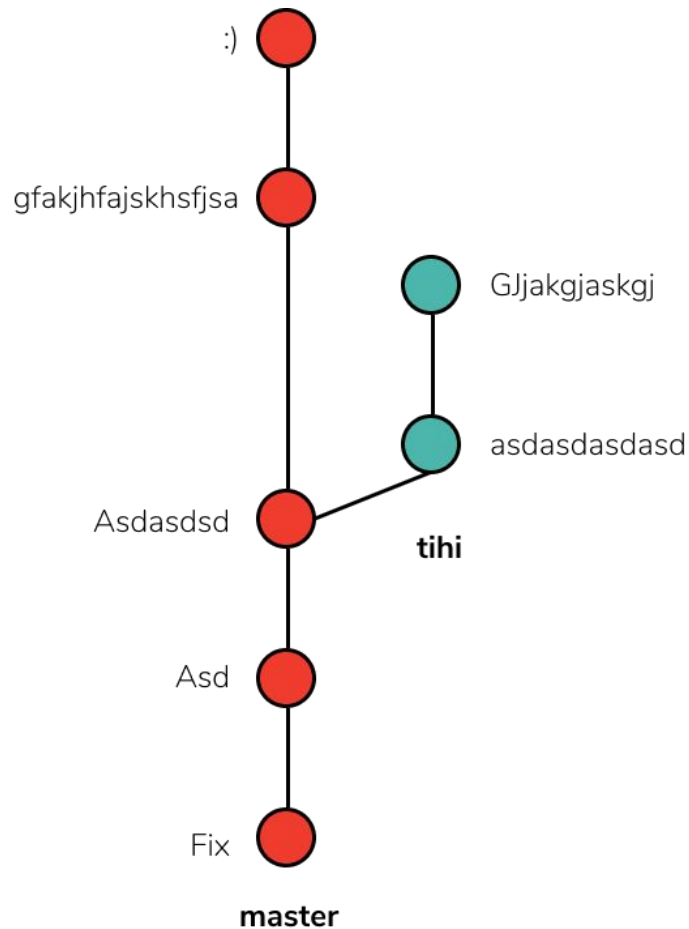
<https://github.com/annakastet/git-kurs>

# Git-historikk





# Git-historikk



# Commit-meldinger

Kort og konkret hva som er gjort

Tom linje

(Dersom nødvendig) Forklare mer hva du har gjort og hvorfor, spesielt dersom det er noe rart eller du har brukt lang tid på noe som andre (eller deg selv om to år) også kan få nytte av

If applied, this commit will...

Move Send-button to bottom

User testing indicated that users didn't see the button if it was on the right side of the input form.

<https://chris.beams.io/posts/git-commit/>

# .gitignore

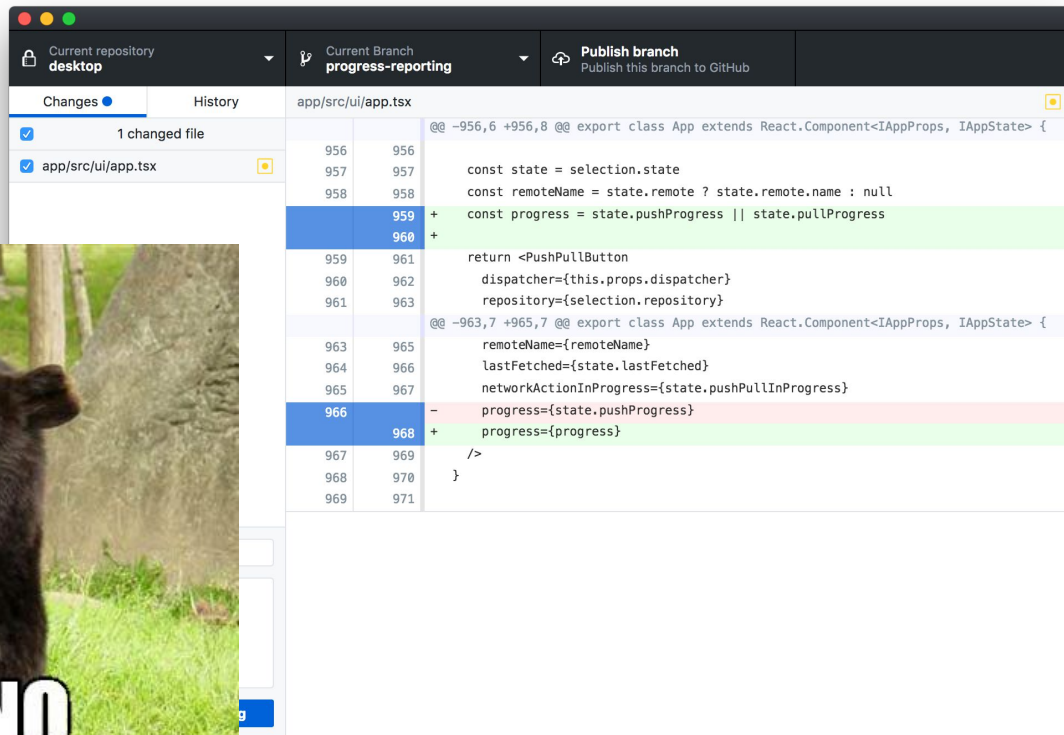
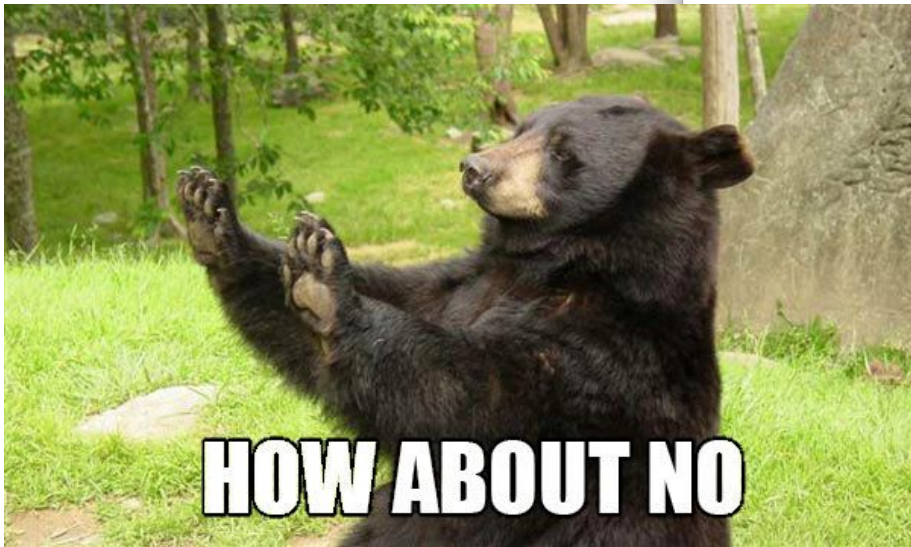
- Ikke alle filer skal trackes av git
- Kompilerte filer
- Midlertidige filer
- Filer generert av koden
- Filer som inneholder brukernavn og passord
- Skjulte filer (F.eks. .DS\_Store på Mac OS)

Forslag til .gitignore for ulike typer prosjekter og OS:

<https://github.com/github/gitignore>

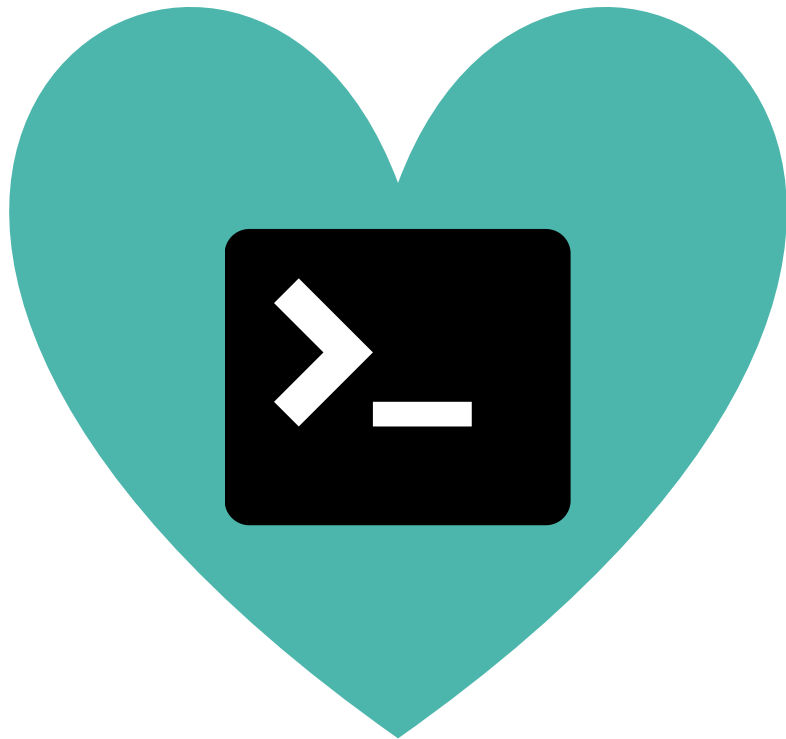
# Git-klient? GUI?

- «Det funkter jo?»



# Hvorfor bruke Git i terminal

- Du **lærer** mer
- Du **vet** hva som skjer
- Mer **kontroll**
- **Alt er mulig** <3



# Github Student Developer Pack

<https://education.github.com/pack>

The GitHub logo, consisting of the word "GitHub" in a bold, black, sans-serif font.

Powerful collaboration, code review, and code management

**DETAILS**

Unlimited private repositories (normally \$7/month) while you are a student.

# Gira på mer?

Tutorial for gruppearbeid og Git

<https://www.atlassian.com/git/tutorials/syncing#git-fetch>

Workflow for gruppearbeid på GitHub

<https://guides.github.com/introduction/flow/>

<http://scottchacon.com/2011/08/31/github-flow.html>

Rewriting History (Interaktiv Rebase <3)

<https://git-scm.com/book/en/v2/Git-Tools-Rewriting-History>

Git Stash

<https://www.atlassian.com/git/tutorials/git-stash>

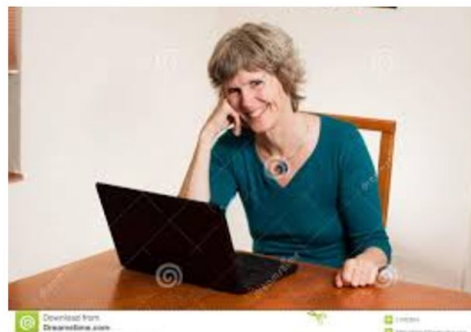
Signing your commits with GPG (for å få slik på GitHub →

Verified

<https://help.github.com/articles/signing-commits-with-gpg/>





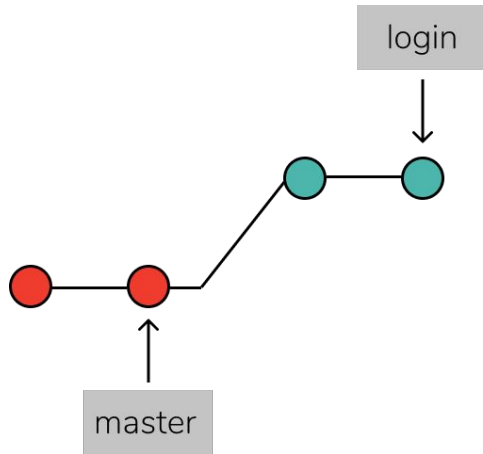




	COMMENT	DATE
○	CREATED MAIN LOOP & TIMING CONTROL	14 HOURS AGO
○	ENABLED CONFIG FILE PARSING	9 HOURS AGO
○	MISC BUGFIXES	5 HOURS AGO
○	CODE ADDITIONS/EDITS	4 HOURS AGO
○	MORE CODE	4 HOURS AGO
○	HERE HAVE CODE	4 HOURS AGO
○	AAAAAAA	3 HOURS AGO
○	ADKFJSLKDFJSDKLFJ	3 HOURS AGO
○	MY HANDS ARE TYPING WORDS	2 HOURS AGO
○	HAAAAAAAAAANDS	2 HOURS AGO

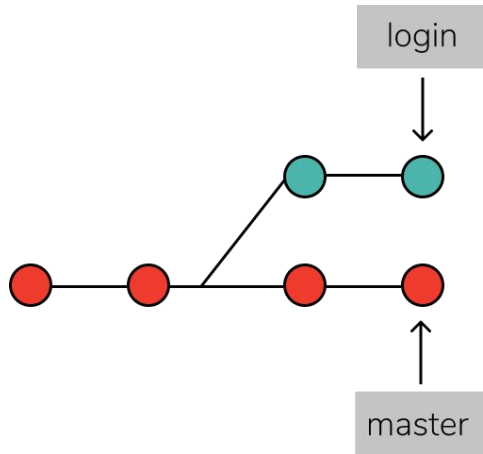
AS A PROJECT DRAGS ON, MY GIT COMMIT  
MESSAGES GET LESS AND LESS INFORMATIVE.

# Merge vs. Rebase



<https://www.atlassian.com/git/tutorials/merging-vs-rebasing>

# Merge vs. Rebase

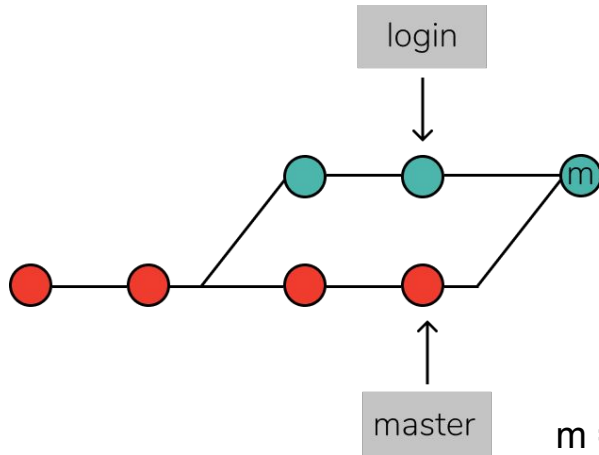


<https://www.atlassian.com/git/tutorials/merging-vs-rebasing>

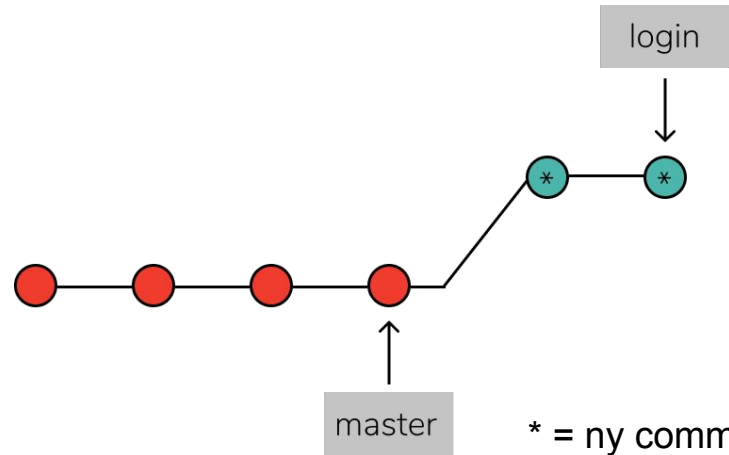
# Merge

vs.

# Rebase



m = merge commit  
Merge branch 'master' into  
'other-branch'



\* = ny commit = ny hash