

INTRODUCTION TO WEB DEVELOPMENT

Coding Course Curriculum

Week 4 - Github & Version control

WHAT WE'LL COVER THIS WEEK

1. Recap of what we've learnt so far
2. Version Control & Using GitHub
3. Create your group repository
4. Publishing on GitHub Pages
5. How Github Pages Works
6. Conflict scenario!
7. How to avoid and reduce merge conflicts
8. Homework: Create GitHub repository for the course project

TOPICS WE'VE COVERED IN WEEKS 1, 2 & 3

Session 1: Getting going + HTML

- HTML syntax

Session 2: CSS

- Tags, Selectors and Attributes, Stylesheets

Session 3: UX

- User Experience

Task: Find a partner and together take a quick look through the session notes from the last 3 sessions. If you're unclear on any of the concepts work through them with your partner and an instructor

GITHUB &
VERSION CONTROL

WHAT IS VERSION CONTROL?

- It lets you track your files over time
- If you mess up, you can easily get back to a previous working version
- It's the key to collaborative software development
- You can work in teams on the same project
- You can manage conflicts in code on the same file

WHY DO WE NEED VERSION CONTROL?

It's powerful and it can do a lot more than simply file sharing

THE ADVANTAGES OF VERSION CONTROL

Backup and Restore

- Files are being saved as they are being edited
- You can jump back to any moment in time
- Even if it was 10 years ago



THE ADVANTAGES OF VERSION CONTROL

Synchronization

- Share files with people
- Stay up-to-date with latest version



THE ADVANTAGES OF VERSION CONTROL

Short-term undo

If you mess up, go back to the last known good version



THE ADVANTAGES OF VERSION CONTROL

Long-term undo

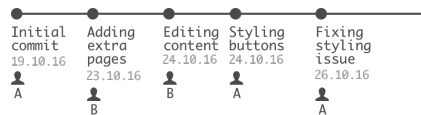
- If you mess up, go back to the last known good version
- Even if it is quite some time ago



THE ADVANTAGES OF VERSION CONTROL

Track Changes & Ownership

- Every file change receives a message
- The person making the change is logged as well
- If someone deserves credit: you know who
- If someone needs to be blamed: you know who



THE ADVANTAGES OF VERSION CONTROL

Sandboxing, branching & merging

- Insurance against yourself
- Test a new feature in isolation
- When everything is tested and OK, add it back into the big pool



THE MAIN ELEMENTS OF VERSION CONTROL

Repository

- The basic unit of GitHub
- A single project folder containing all the files of a project

Branches

- Every repository has at least one branch called Master
- Branches allow you to work on different parts of a repository at the same time

THE MAIN ELEMENTS OF VERSION CONTROL

Commit

- A change in a repository
- Every commit needs an associated message describing the change
- Commits help others understand what has been done to a repository

Issue

- A note on a repository about something that needs attention

Pull Request

- A request to the repository owner to include your code in their project

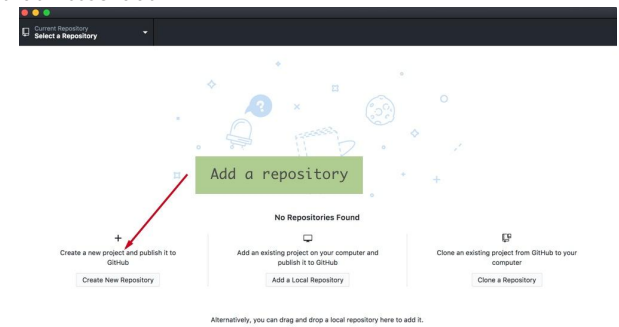
CREATING A REPOSITORY

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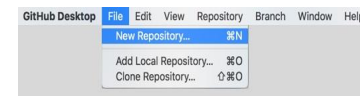
Go to

Download the Windows or MacOS version

Either

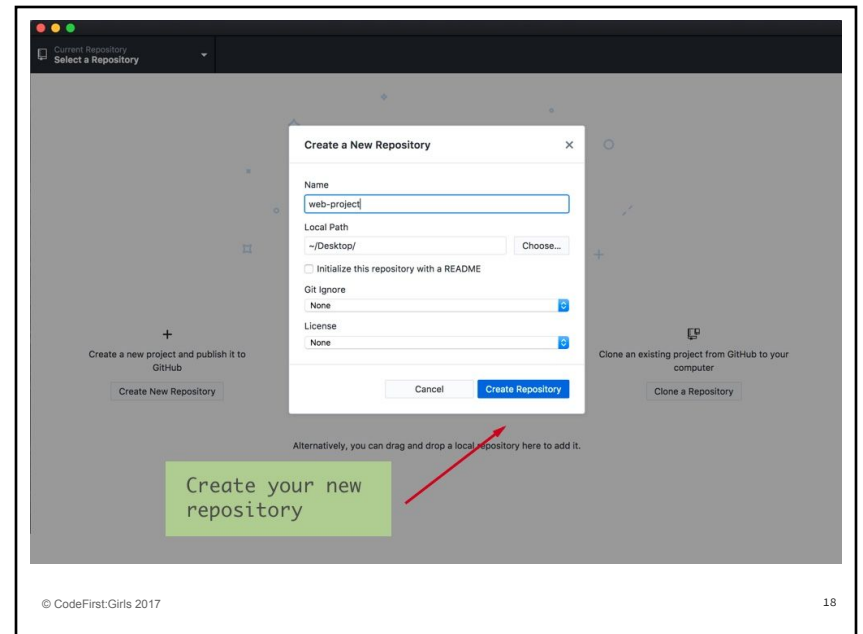
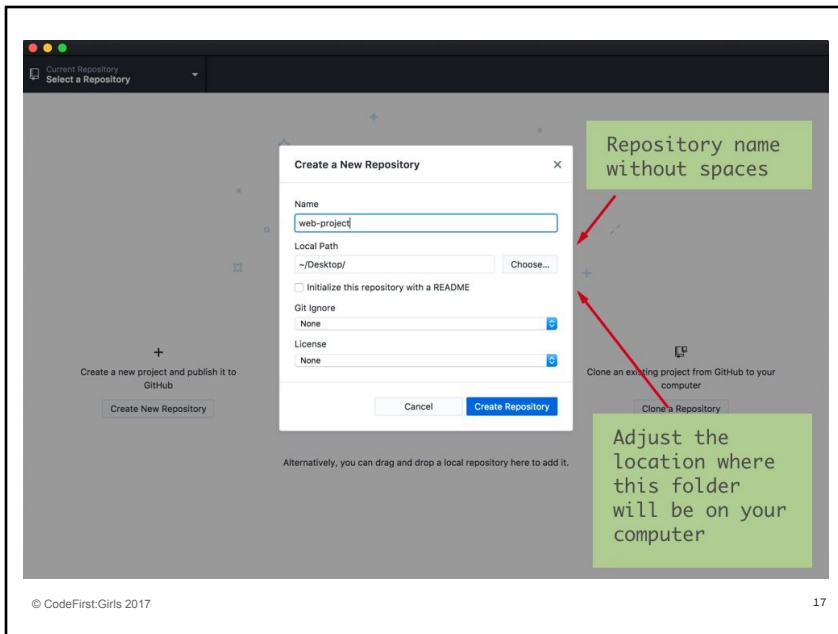


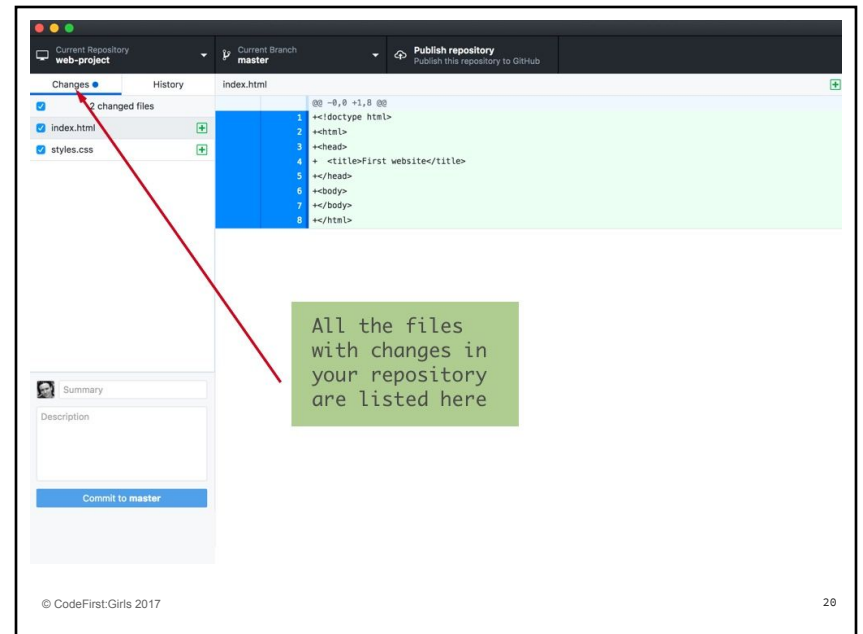
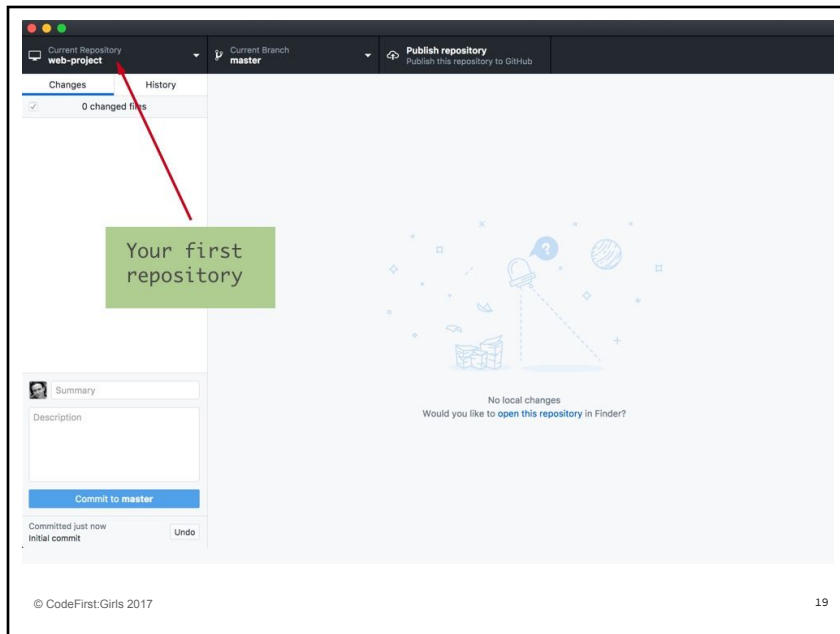
OR



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Current Repository
web-project

Current Branch
master

Publish repository
Publish this repository to GitHub

Changes

History

2 changed files

index.html

styles.css

@@ -0,0 +1,8 @@

1 <<doctype html>

2 <html>

3 <head>

4 + <title>First website</title>

5 </head>

6 <body>

7 </body>

8 </html>

Initial commit

Description

Commit to master

Committed 4 minutes ago
Initial commit

Undo

Write a commit message in the Summary box

This button will commit your Commit

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Current Repository
web-project

Current Branch
master

Publish repository
Publish this repository to GitHub

Changes

History

Initial commit

Joke De Winter
just now by Joke De Winter

4 minutes ago by Joke De Winter

index.html

styles.css

@@ -0,0 +1,8 @@

1 <<doctype html>

2 <html>

3 <head>

4 + <title>First website</title>

5 </head>

6 <body>

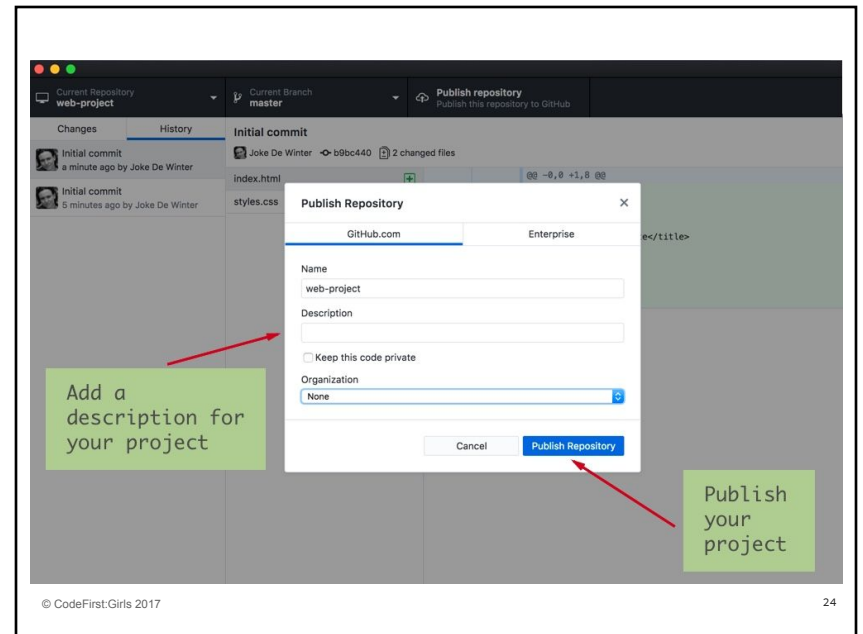
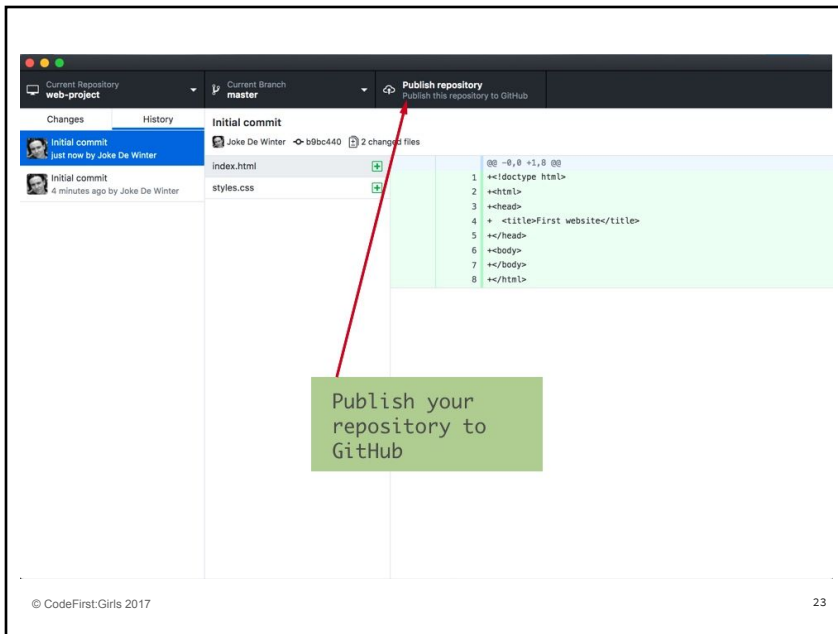
7 </body>

8 </html>

The commit history of your project is listed here

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GitHub profile page for Joke de Winter (jokedewinter). The page shows a list of repositories. A red arrow points from a green box labeled "Your first repository" to the "web-project" repository, which is marked as "Updated 2 minutes ago".

Joke de Winter
jokedewinter
Lego, gardening and code.
Loughborough UK
<https://www.jokedewinter.co...>

web-project
Updated 2 minutes ago

tiny-website
A very tiny website to show how git works
CSS Updated 29 days ago

wallpaper-image
CSS Updated on 7 Nov 2018

text-on-image
CSS Updated on 7 Nov 2018

click-reveal-boxes
CSS Updated on 7 Nov 2018

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GitHub repository page for Jokedewinter / web-project. The page shows a list of files and their commit history. A red arrow points from a green box labeled "All the files in your repository are listed here, together with the last commit message for each file" to the "styles.css" file, which is marked as "Initial commit" and "4 minutes ago".

Jokedewinter / web-project
Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights

No description, website, or topics provided. Edit

1 commit 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

jokedewinter Initial commit Latest commit de81499 4 minutes ago

index.html Initial commit 4 minutes ago

styles.css Initial commit 4 minutes ago

Help people interested in this repository understand your project by adding a README. Add a README

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FIRST RULE OF GIT

ALWAYS **SYNC** FIRST

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The screenshot shows a Git GUI interface for a repository named 'web-project-2'. The 'Current Branch' is 'master'. The 'Fetch origin' button is highlighted with a red arrow. A green callout box with the text 'Sync your repository to get the most recent version' is positioned below the arrow. The 'Initial commit' section shows two files: 'index.html' and 'styles.css'. The 'index.html' file content is displayed on the right:

```
1 <!doctype html>
2 <html>
3 <head>
4 + <title>First website</title>
5 </head>
6 <body>
7 </body>
8 </html>
```

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Current Repository: web-project-2 | Current Branch: master | Push origin: Last fetched 3 minutes ago

Changes: 1 changed file (styles.css)

History: styles.css

Red sections have been removed

Green sections have been added

```
@@ -2,7 +2,7 @@ body {
  font-family: Helvetica, sans-serif;
  text-align: center;
  width: 50%;
  margin: 0 auto;
  padding: 10px auto;
  border: 1px solid #ccc;
}
@@ -10,4 +10,5 @@ body {
  p {
    color: #333;
    font-size: 18px;
    text-align: justify;
  }
}
```

Commit to master

Committed just now: Adding initial styles | Undo

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Current Repository: web-project-2 | Current Branch: master | Push origin: Last fetched 4 minutes ago

Changes: 0 changed files

History: No local changes. Would you like to open this repository in Finder?

The quick undo button

Commit to master

Committed just now: Adding some styles | Undo

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The screenshot shows the VS Code interface with the 'web-project-2' repository. The 'History' tab is active, displaying a list of commits. The commit 'Adding initial styles' by Joke De Winter is selected. A context menu is open over this commit, showing options: 'Revert This Commit', 'Copy SHA', and 'View on GitHub'. A red arrow points from a green callout box to the 'Revert This Commit' option. Another red arrow points from a second green callout box to the diff view of the selected commit.

Current Repository: web-project-2 | Current Branch: master | Fetch origin | Last fetched a minute ago

Changes | History | Adding initial styles | Joke De Winter | 6e4560b | 1 changed file

Adding initial styles | 4 minutes ago by Joke De Winter | styles.css | 00 -0,0 +1,13 @@

```
1 +body {
2 + font-family: Helvetica, sans-serif;
3 + text-align: center;
4 + width: 50%;
5 + margin: 0 auto;
6 + padding: 30px;
7 + border: 1px solid #ccc;
8 +}
9 +
10 +p {
11 + color: #333;
12 + font-size: 18px;
13 +}
```

Ctrl+click on the commit you want to revert to (will reveal the menu)

Select Revert This Commit

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The screenshot shows the VS Code interface after reverting the 'Adding initial styles' commit. The 'History' tab is active, and the commit 'Revert "Adding initial styles"' by Joke De Winter is now the top commit. A red arrow points from a green callout box to this new commit. The diff view on the right shows the changes in 'styles.css' after the revert.

Current Repository: web-project-2 | Current Branch: master | Push origin | Last fetched 3 minutes ago

Changes | History | Revert "Adding initial styles" | Joke De Winter | 9dbd387 | 1 changed file

This reverts commit 6e4560b21dc67a8db58fef6ac613ad72f8731c8a.

Adding some styles | 5 minutes ago by Joke De Winter | styles.css | @@ -2,7 +2,7 @@ body {

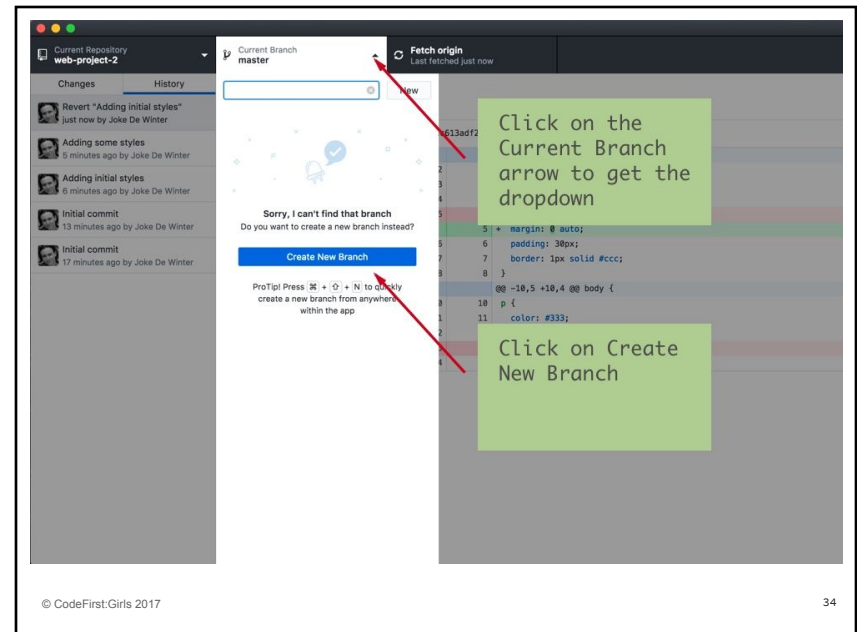
```
2 2 font-family: Helvetica, sans-serif;
3 3 text-align: center;
4 4 width: 50%;
5 - margin: 0 auto;
5 + margin: 0 auto;
6 6 padding: 30px;
7 7 border: 1px solid #ccc;
8 8 }
9
10 @@ -10,5 +10,4 @@ body {
11 11 p {
12 12 color: #333;
13 - text-align: justify;
14 13 }
```

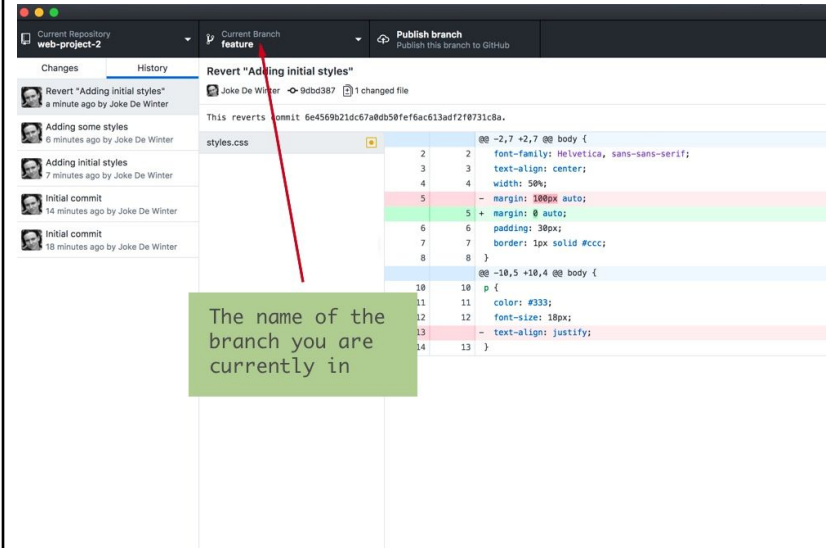
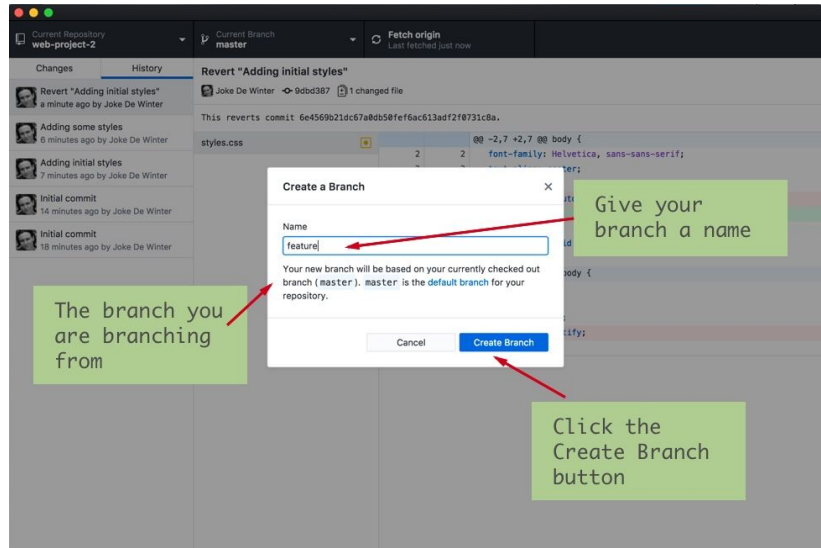
A new commit with the reverted changes

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CREATING A BRANCH

- The first branch in any repository is master
- You can create a branch from any other branch you are in
- A branch is (initially) a copy of the current branch you are in
- Branches are useful for testing out features





Current Repository: web-project-2

Current Branch: feature

Publish branch: Publish this branch to GitHub

Changes

2 changed files

- about.html
- index.html

about.html

```
@@ -0,0 +1,10 @@
1 <!doctype html>
2 <html>
3 <head>
4 + <title>About | First website</title>
5 </head>
6 <body>
7 + <h1>About me</h1>
8 + <p>I am a web designer and I like code.</p>
9 </body>
10 </html>
```

ig some content + an about page

Description

Commit to feature

Write a commit message

The commit button tells you which branch you are committing to

The changes on your current branch

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Current Repository: web-project-2

Current Branch: feature

Push origin: Last fetched 2 minutes ago

Changes

History

Revert "Adding initial styles"

Joke De Winter · 9dbd387 · 1 changed file

This reverts commit 6e4569b21dc67a8b0581f6ac613ad2f0731c8a.

styles.css

```
@@ -2,7 +2,7 @@ body {
2 font-family: Helvetica, sans-serif;
3 text-align: center;
4 width: 50%;
5 - margin: 100px auto;
6 + margin: 0 auto;
7 padding: 30px;
8 border: 1px solid #ccc;
9 }
10
11 @@ -10,5 +10,4 @@ body {
12 p {
13 color: #333;
14 font-size: 18px;
15 - text-align: justify;
16 }
```

Adding some more words to the ... just now by Joke De Winter

Adding some content + an about... 2 minutes ago by Joke De Winter

Revert "Adding initial styles" 6 minutes ago by Joke De Winter

Adding some styles 11 minutes ago by Joke De Winter

Adding initial styles 12 minutes ago by Joke De Winter

Initial commit 19 minutes ago by Joke De Winter

Initial commit 23 minutes ago by Joke De Winter

Publish your branch to your GitHub account

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ADDING COLLABORATORS

- Team up with the person sitting next to you
- Decide who is going to add a collaborator to their repository
- The owner of the repository needs to do the next steps

This repository Search Pull requests Issues Marketplace Gist

jokedewinter / web-project

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights

Options

- Collaborators
- Branches
- Webhooks
- Integrations & services
- Deploy keys

Settings

Repository name

web-project

Features

- ☒ Wikis
GitHub Wikis is a simple way to let others contribute content. Any GitHub user can create and edit pages to use for documentation, examples, support, or anything you wish.
- ☒ Restrict editing to collaborators only
Public wikis will still be readable by everyone.
- ☒ Issues
GitHub Issues adds lightweight issue tracking tightly integrated with your repository. Add issues to milestones, label issues, and close & reference issues from commit messages.
- ☒ Projects
Project boards on GitHub help you organize and prioritize your work. You can create project boards for specific feature work, comprehensive roadmaps, or even release checklists.

Merge button

Go to Collaborators

Select the Settings tab for your repository

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GitHub repository: jokedewinter / web-project

Collaborators

This repository doesn't have any collaborators yet. Use the form below to add a collaborator.

Search by username, full name or email address

You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

spillingthings

spillingthings Spilling Things

Add collaborator

Type the username of your teammate and select their account

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GitHub repository: jokedewinter / web-project

Collaborators

Push access to the repository

Spilling Things

Awaiting spillingthings's response

Copy invite link Cancel invite

Search by username, full name or email address

You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

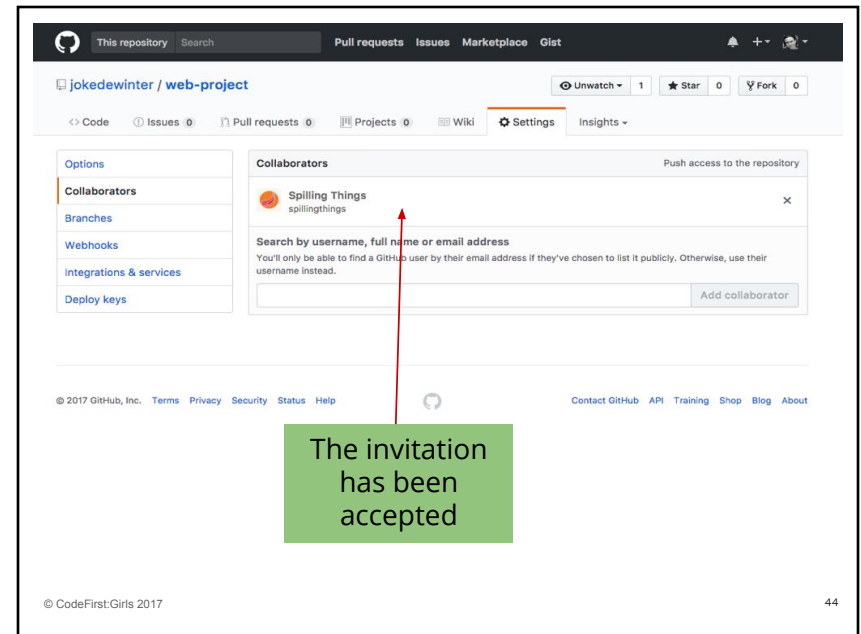
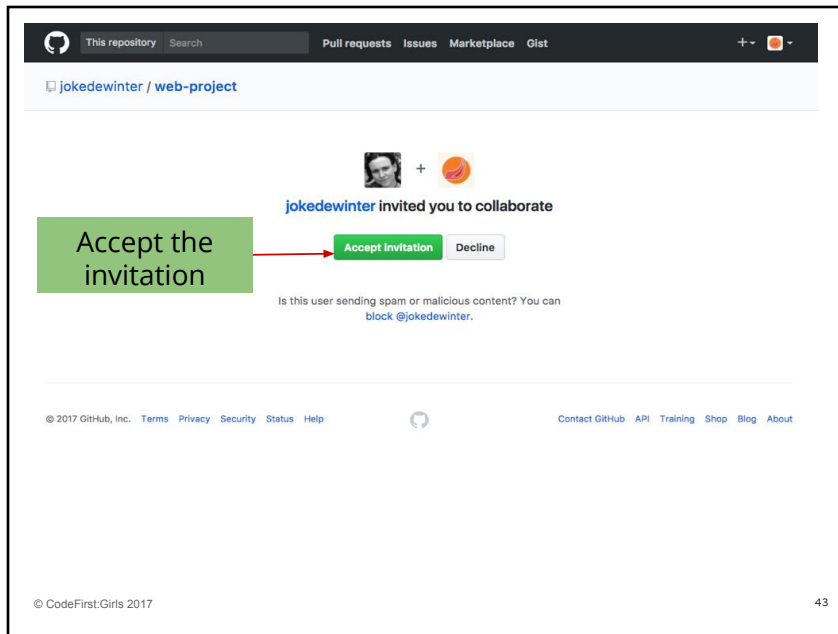
Add collaborator

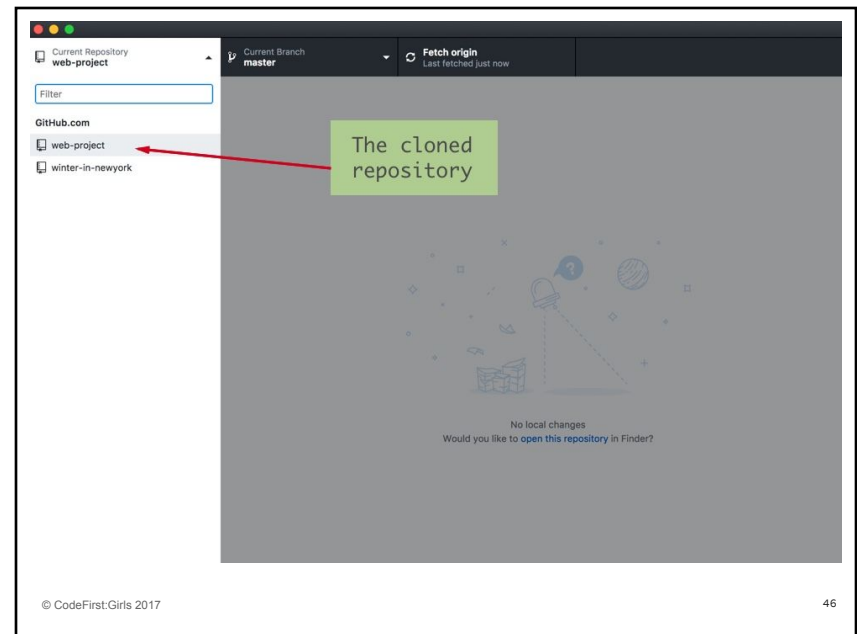
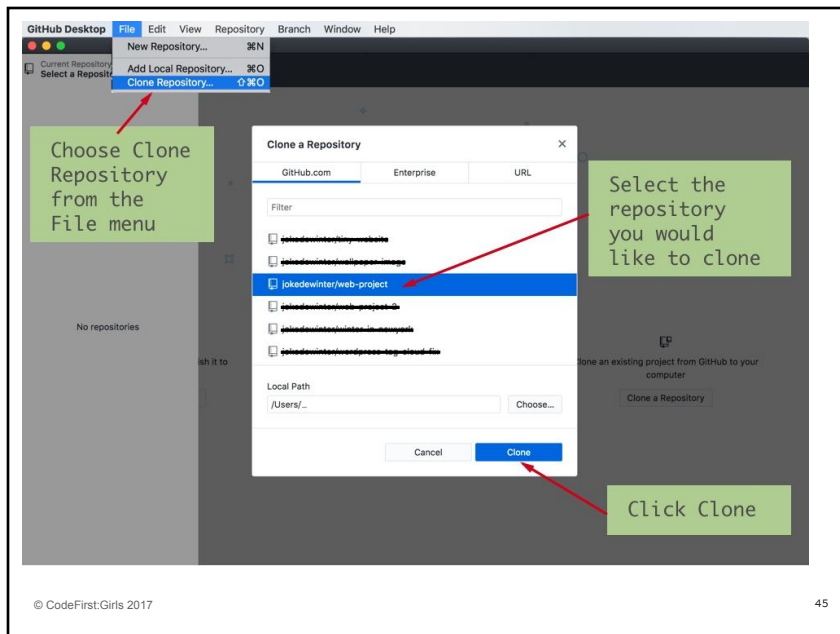
The invitation has been sent

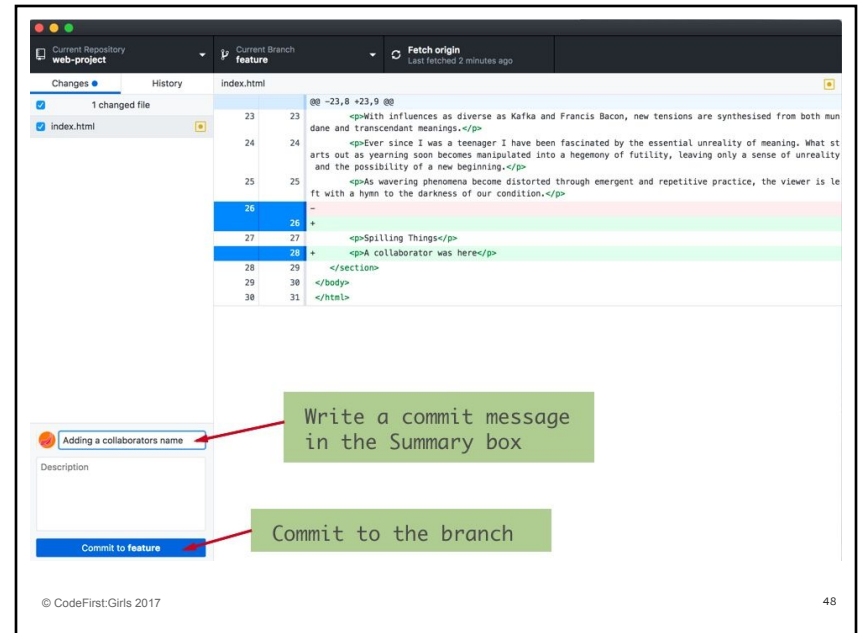
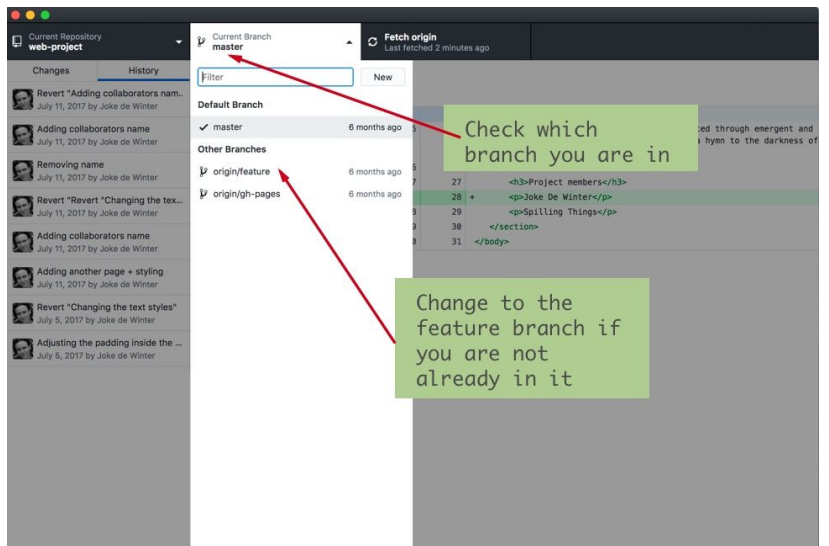
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Current Repository: web-project

Current Branch: feature

Push origin
Last fetched 2 minutes ago

Changes

- Adding collaborators name
- Revert "Adding collaborators name"
- Adding collaborators name
- Removing name
- Revert "Revert "Changing the tex..."
- Adding collaborators name
- Adding another page + styling
- Revert "Changing the text styles"
- Adjusting the padding inside the ...

History

25 25 @@ -25,6 +25,7 @@
 26 26 <p>As wavering phenomena become distorted through emergent and
 27 27 repetitive practice, the viewer is left with a hymn to the darkness of
 28 28 our condition.</p>
 29 29 <h3>Project members</h3>
 30 30 <p>Joke De Winter</p>
 31 31 <p>Spilling Things</p>
 32 32 </section>
 33 33 <body>

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GitHub Desktop

File Edit View Repository Branch Window Help

Current Repository: web-project

Current Branch: master

Branch menu options:

- New Branch...
- Rename...
- Delete...
- Update From Default Branch
- Merge Into Current Branch...
- Compare on GitHub
- Create Pull Request

Changes

- Fixing merge conflict
- Adding title above project memb...
- Adding repository owner name
- Merge branch
- Adding collaborator
- Revert "Adding collaborators name"
- Removing name
- Revert "Revert "Changing the tex..."
- Adding collaborators name
- Adding another page + styling
- Revert "Changing the text styles"

History

26 26 <h3>Project members</h3>
 27 27 <p>Joke De Winter</p>
 28 28 <p>Spilling Things</p>
 29 29 </section>
 30 30 <body>

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Current Repository: web-project | Current Branch: master | Push origin (Last fetched 2 minutes ago)

Changes | History | Adding collaborators name

about.html | 8428c9e | 1 changed file

Merge Branch

Filter

Default Branch: ☒ master (6 months ago)

Recent Branches:

- ☒ feature (6 minutes ago)

Other Branches:

- ☐ origin/gh-pages (6 months ago)

Merge into master

This will bring in 1 commit from feature

Select the branch you want to merge into the Master branch

Click Merge into Master

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Current Repository: web-project | Current Branch: master | Push origin (Last fetched 2 minutes ago)

Changes | History | index.html

1 changed file

index.html

@@ -24,9 +24,8 @@

```
24 24 <p>Ever since I was a teenager I have been fascinated by the essential unreality of meaning. What it  
25 25 arts out as yearning soon becomes manipulated into a hegemony of futility, leaving only a sense of unreality  
26 26 and the possibility of a new beginning.</p>  
27 25 <p>As wavering phenomena become distorted through emergent and repetitive practice, the viewer is le  
28 27 ft with a hymn to the darkness of our condition.</p>  
29 27  
30 28 <p>A collaborator was here</p>  
31 29 </section>  
32 30 </body>  
33 31 </html>
```

Merge branch 'feature'

Description

Commit to master

Push origin

A merge commit message has been created

Push your changes

Commit to master

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PUBLISHING ON GITHUB PAGES

- Free web hosting for git repositories on GitHub
- Always from the **gh-pages** branch
- Make sure **index.html** is all lowercase
- Your website url will be
[your-github-username].github.io/[repository-name]

The screenshot shows the GitHub interface for a repository named 'web-project' by user 'jokedewinter'. The repository has 21 commits, 2 branches, and 0 releases. A modal window titled 'Switch branches/tags' is open, displaying a list of branches. The 'gh-pages' branch is selected, and a button labeled 'Create branch: gh-pages from master' is highlighted. A green callout box with an arrow points to this button, containing the text 'Create a new branch called gh-pages'.

The url of
your website

GitHub Pages

GitHub Pages is designed to host your personal, organization, or project pages from a GitHub repository.

✓ Your site is published at <https://jokedewinter.github.io/web-project/>

Source

Your GitHub Pages site is currently being built from the gh-pages branch. [Learn more.](#)

gh-pages branch

Save

Theme Chooser

Select a theme to build your site with a Jekyll theme. [Learn more.](#)

Choose a theme

Custom domain

Custom domains allow you to serve your site from a domain other than `jokedewinter.github.io`. [Learn more.](#)

Save

✓ Enforce HTTPS

— Required for your site because you are using the default domain (`jokedewinter.github.io`)

HTTPS provides a layer of encryption that prevents others from snooping on or tampering with traffic to your site. When HTTPS is enforced, your site will only be served over HTTPS. [Learn more.](#)

Danger Zone

Make this repository private

Make this repository private

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CONFLICT SCENARIO!

- Working on a repository with more than one collaborator can create conflicts
- Conflicts are a nuisance
- But they can be fixed!

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The screenshot shows a code editor interface for a repository named "web-project". The "Current Branch" is "master". The "Changes" panel on the left shows "1 changed file" and "index.html". The main editor area displays the content of "index.html" with line numbers 27 to 33. The code includes a section that is being modified. A red arrow points from a green box labeled "For the COLLABORATOR" to line 30, which contains the text: `<p>This is going to cause a conflict, I hope</p>`. Another red arrow points from a green box labeled "Add a line of text to index.html" to the same line. A third red arrow points from a green box labeled "Write a commit message" to the "Causing a conflict" section in the bottom left. A fourth red arrow points from a green box labeled "Commit to master" to the "Commit to master" button in the bottom left. The bottom left section is titled "Causing a conflict" and has a "Description" field and a "Commit to master" button.

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The screenshot shows the same code editor interface as the previous one, but with an "Error" dialog box open in the center. The dialog box has a red exclamation mark icon and the text: "We found some conflicts while trying to merge. Please resolve the conflicts and commit the changes." A red arrow points from a green box labeled "Oops!" to the dialog box. The "Commit to master" button in the bottom left is still visible.

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```

24 <p>Ever since I was a teenager I have been fascinated by the essential unreality of
25 <p>As wavering phenomena become distorted through emergent and repetitive practice,
26
27 <p>Spilling Things</p>
28 <p>A collaborator was here</p>
29
30 <==== HEAD
31 <p>Creating conflicts for the fun of it</p>
32 =====
33
34 <p>This is going to cause a conflict, I hope</p>
35 >>>>>> 31b0769ef2edac7bfe31ae568cae830f0e392966
36
37 </section>
38 </body>
39 </html>

```

If you view your conflict in Atom the conflicting sections will be highlighted

Use me

Click on the Use me section you want to keep

```

21 <h2>Some silliness</h2>
22 <p>My work explores the relationship between acquired synesthesia and li
23 <p>With influences as diverse as Kafka and Francis Bacon, new tensions a
24 <p>Ever since I was a teenager I have been fascinated by the essential u
25 <p>As wavering phenomena become distorted through emergent and repetitiv
26
27 <p>Spilling Things</p>
28 <p>A collaborator was here</p>
29
30 <p>Creating conflicts for the fun of it</p>
31 </section>
32 </body>
33 </html>
34

```

The fixed code

HOW TO AVOID AND REDUCE MERGE CONFLICTS

- Always Sync first
- Always end your work with Sync
- Plan with your collaborators who is going to work on what and when

HOMEWORK

In this session you were shown how to put a website up using GitHub Pages.

Task: do a recap with your partner, or ask your instructor for a demo again.

Task: Work with your partner to:

1. Create your project repository on Github
2. Start a new folder on your computer to add your HTML & CSS files. Be sure to link your CSS to your HTML file, see your Session 2 notes and talk to your instructor if you're unclear on how to do this.
3. Start writing your HTML code!