GETTING STARTED WITH VERSION CONTROL: INTRO TO GIT AND GITHUB

DATA CULTURE SOCIETY

Support for data-led and applied digital research across the arts, humanities and social sciences.

Welcome!

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PhD student in data visualization &
visualization developer

Plan for Today

14:00 Welcome & Introduction

14:15 *Live demo & Troubleshooting:* Create your first repo & your first commit

14:40 *Live Demo & Troubleshooting:* Create a new branch and merge it

15:00 Break

15:10 *Live Demo & Troubleshooting:* Fork a repo & create a pull request

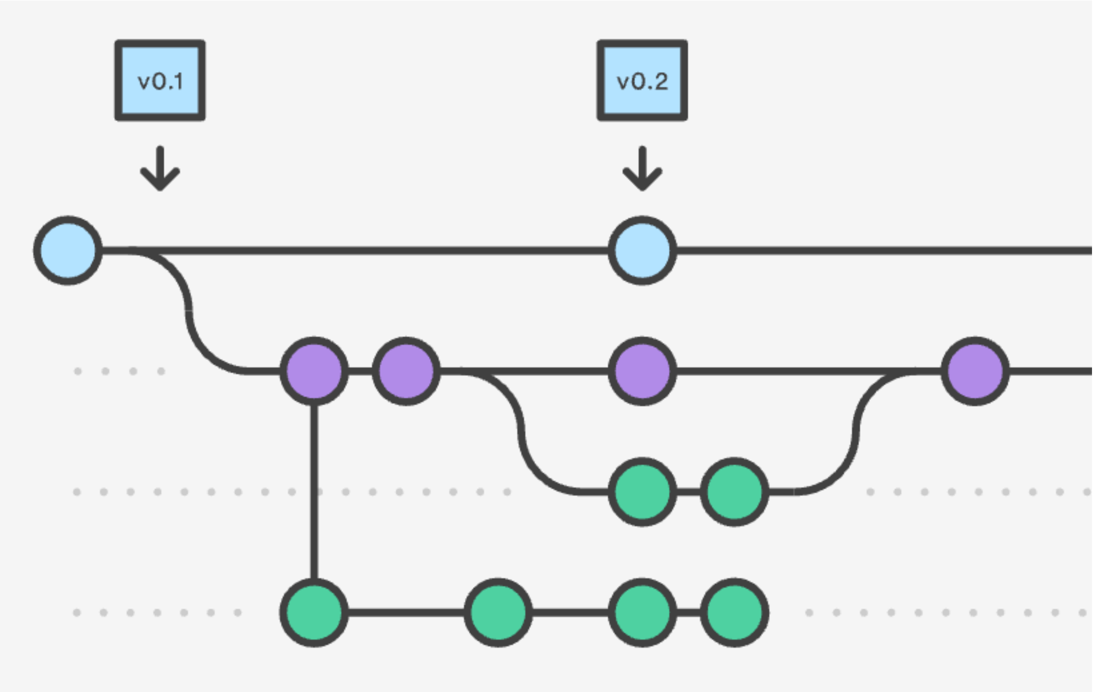
15:30 *Live Demo & Troubleshooting:* Resolving a merge conflict

15:50 Wrap up & additional resources

16:00 End of workshop

Version Control

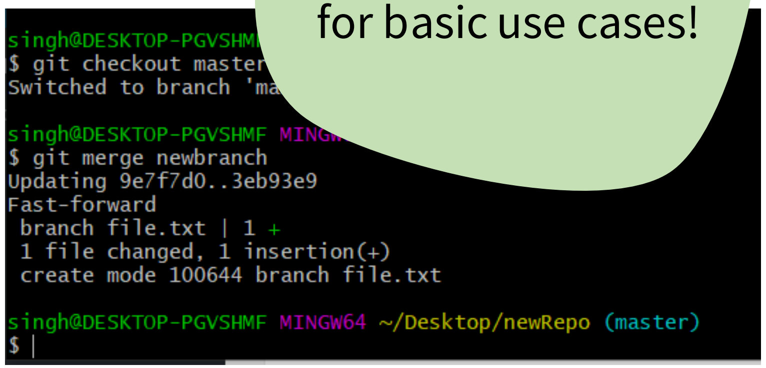
- **Version control is the practice of tracking and managing** *changes***to software code.**
- Version control software keeps track of every modification to the code in a special kind of database.
- Version control helps tracking every individual change by each contributor and helping prevent *concurrent* work from conflicting.
- It is a standard *workflow* in the tech industry.



git

A distributed version control system

No need to learn this for basic use cases!

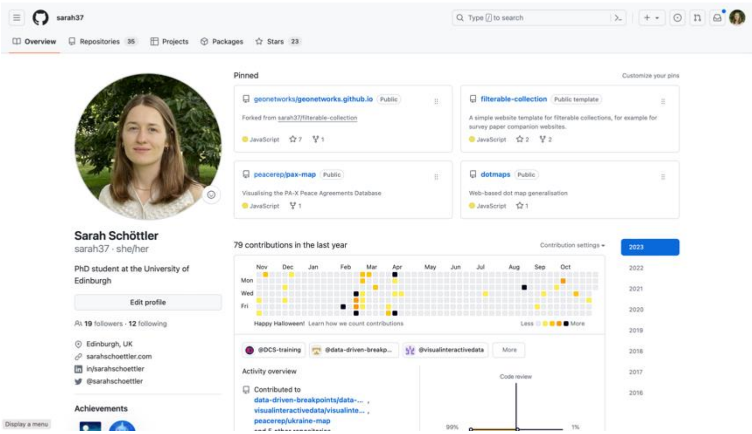


```
singh@DESKTOP-PGVSHM
$ git checkout master
Switched to branch 'ma

singh@DESKTOP-PGVSHMF MINGW
$ git merge newbranch
Updating 9e7f7d0..3eb93e9
Fast-forward
 branch file.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 branch file.txt

singh@DESKTOP-PGVSHMF MINGW64 ~/Desktop/newRepo (master)
$ |
```

Image from https://funkyvast.weebly.com/what-is-git-bash-terminal.html

GitHub

An online platform for collaborating on code, based on git



sarah37

Overview · Repositories 35 · Projects · Packages · Stars 23

Sarah Schöttler
sarah37 · she/her

PhD student at the University of Edinburgh

Edit profile

19 followers · 12 following

Edinburgh, UK
sarahschoettler.com
in/sarahschoettler
@sarahschoettler

Achievements

Pinned

geonetworks/geonetworks.github.io Public
Forked from sarah37/filterable-collection
JavaScript ☆ 7 1

filterable-collection Public template
A simple website template for filterable collections, for example for survey paper companion websites.
JavaScript ☆ 2 2

peacerep/pax-map Public
Visualising the PA-X Peace Agreements Database
JavaScript 1

dotmaps Public
Web-based dot map generalisation
JavaScript ☆ 1

79 contributions in the last year

Happy Halloween! Learn how we count contributions

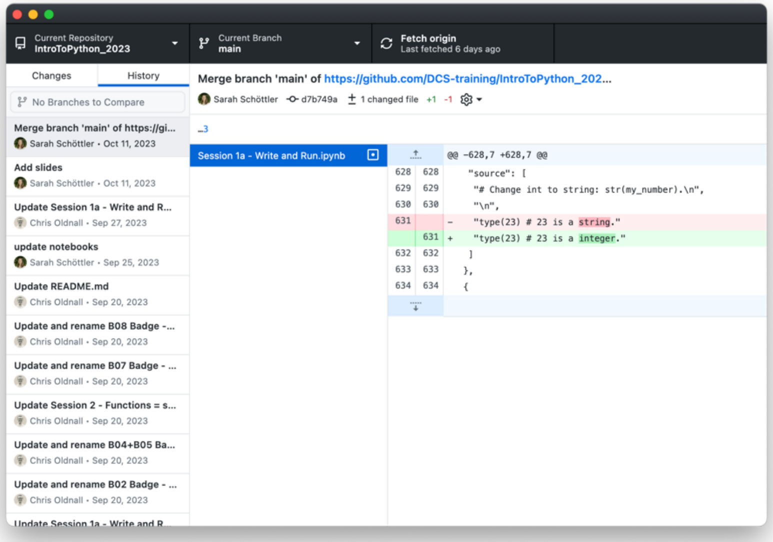
@DCS-training · @data-driven-breakp... · @visualinteractivedata · More

Activity overview

Contributed to data-driven-breakpoints/data-..., visualinteractivedata/visualinte..., peacerep/ukraine-map

GitHub Desktop

A desktop application for working with git and GitHub on your computer



Current Repository IntroToPython_2023 · Current Branch main · Fetch origin Last fetched 6 days ago

Changes · History

No Branches to Compare

Merge branch 'main' of https://gi...
Sarah Schöttler • Oct 11, 2023

Add slides
Sarah Schöttler • Oct 11, 2023

Update Session 1a - Write and R...
Chris Oldnall • Sep 27, 2023

update notebooks
Sarah Schöttler • Sep 25, 2023

Update README.md
Chris Oldnall • Sep 20, 2023

Update and rename B08 Badge -...
Chris Oldnall • Sep 20, 2023

Update and rename B07 Badge - ...
Chris Oldnall • Sep 20, 2023

Update Session 2 - Functions = s...
Chris Oldnall • Sep 20, 2023

Update and rename B04+B05 Ba...
Chris Oldnall • Sep 20, 2023

Update and rename B02 Badge - ...
Chris Oldnall • Sep 20, 2023

Update Session 1a - Write and R...

Merge branch 'main' of https://github.com/DCS-training/IntroToPython_202...
Sarah Schöttler · d7b749a · 1 changed file +1 -1

...3

Session 1a - Write and Run.ipynb

```
@@ -628,7 +628,7 @@
     "source": [
      "# Change int to string: str(my_number).\n",
      "\n",
-     "type(23) # 23 is a string."
+     "type(23) # 23 is a integer."
     ]
    },
    {
```

Terminology

repository/repo

commit

clone

branch

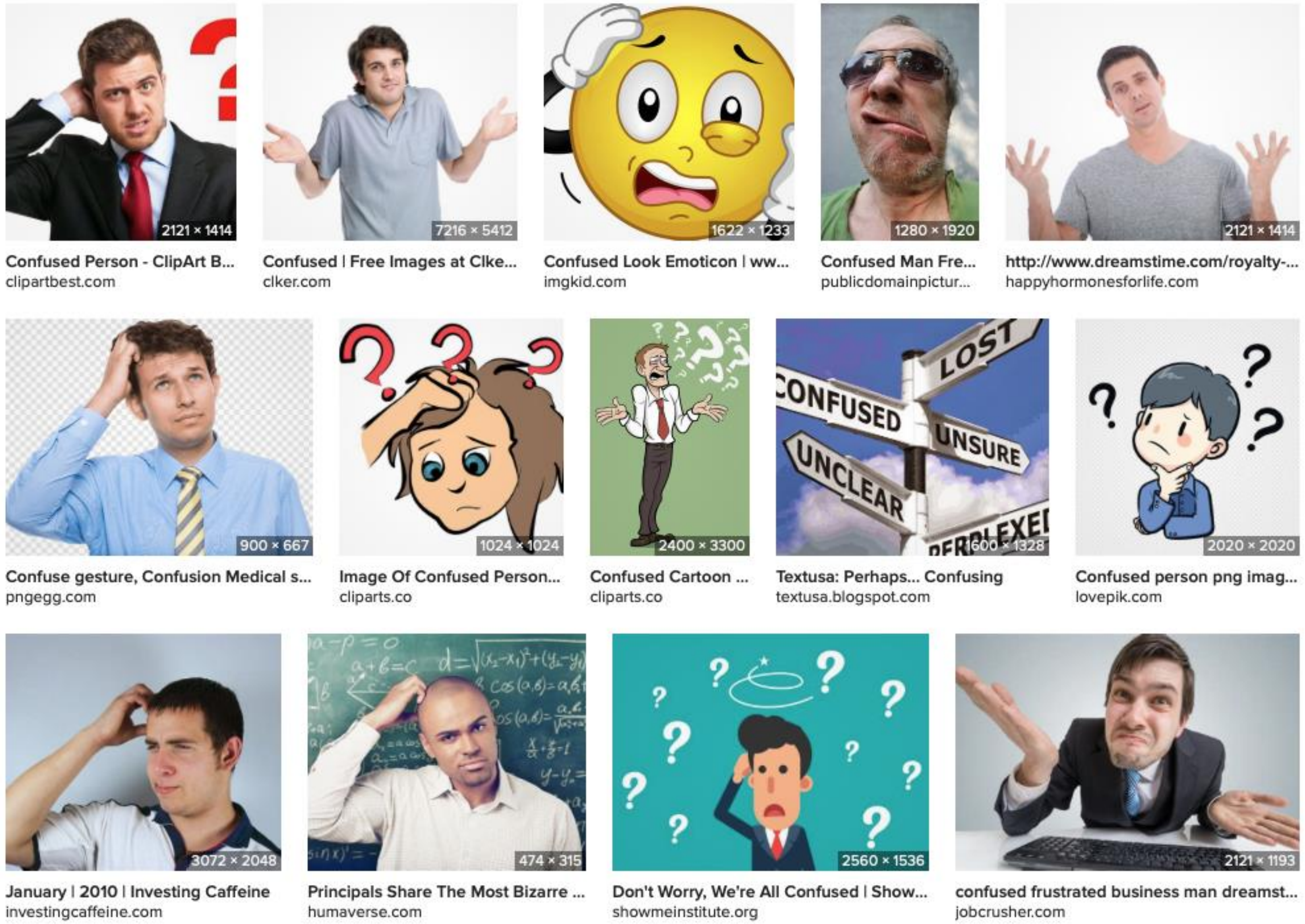
merge

fetch

pull

push

fork



Confused Person - ClipArt B...
clipartbest.com

Confused | Free Images at Clke...
clker.com

Confused Look Emoticon | ww...
imgkid.com

Confused Man Fre...
publicdomainpictur...

http://www.dreamstime.com/royalty-...
happyhormonesforlife.com

Confuse gesture, Confusion Medical s...
pngegg.com

Image Of Confused Person...
cliparts.co

Confused Cartoon ...
cliparts.co

Textusa: Perhaps... Confusing
textusa.blogspot.com

Confused person png imag...
lovepik.com

January | 2010 | Investing Caffeine
investingcaffeine.com

Principals Share The Most Bizarre ...
humaverse.com

Don't Worry, We're All Confused | Show...
showmeinstitute.org

confused frustrated business man dreamst...
jobcrusher.com

Terminology

repository/repo → a “folder” for your code for one project

commit → saving your changes in the project

clone → a copy of a repo (e.g., on your computer)

branch → a parallel version of a repo (repos can have multiple branches)

merge

fetch

pull

push

fork

Live Demo:
Creating your first repo

1. Go to www.github.com
2. Sign in / sign up
3. Click the **+** in the top right corner and select “New repository”
4. Choose a repository name, check “Add a README file”, and leave all other fields.
5. Click “Create repository”

Live Demo:
Cloning your repo with GitHub Desktop

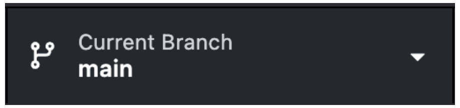
1. Install GitHub Desktop from https://desktop.github.com if you haven't yet
2. On the GitHub page for your repo, click "Open in GitHub Desktop"
3. Choose where to clone your repo
4. Click **fetch** & admire your repo in GitHub Desktop

Live Demo:
Making a commit

1. Open the README file in a text editor of your choice
   If you’re unsure: on Windows use **Notepad**; on Mac use **TextEdit**
2. Make some changes in your README file and save them
3. In GitHub Desktop, describe your commit and click commit when ready
4. Push to GitHub

Live Demo:
Creating a new branch and merging it

1. In Github Desktop, open the branch menu:



2. Select 'new branch' and enter a name of your choice. Confirm that this branch is now displayed under 'Current Branch'.
3. Make some changes in your README file and save them as before, commit, then push.
4. Switch back to the main branch, click 'Choose a branch to merge into main' in the branch dropdown, select your new branch, and merge.

Break

GETTING STARTED WITH VERSION CONTROL: INTRO

INTRO TO GIT AND GITHUB

Terminology

repository/repo	→	a “folder” for your code for one project
commit	→	saving your changes in the project
clone	→	a copy of a repo (e.g., on your computer)
branch	→	a parallel version of a repo (repos can have multiple branches)
merge	→	combine the changes from one branch into another
fetch	→	getting the latest changes from the online repo
pull	→	integrating the latest changes into your clone of the repo
push	→	sending your changes (your commits) to the server
fork	→	a personal copy of someone else’s repo

Live Demo:
Forking a repo, making a commit, and making a pull request

1. Find a partner and get the link to their GitHub repo. Fork it on GitHub, then add your fork to GitHub Desktop.
2. Make a change to their README, commit, and push.
3. On GitHub, view your fork and open a pull request.
4. Review and approve each other’s pull requests.

Live Demo:
Resolving a merge conflict

1. Choose either your partner's or your repo.
2. To create a merge conflict: At the same time, both of you edit the title of the README, commit, and push.
3. The person who pushed second will get an error message about a merge conflict: resolve this as demonstrated.

Additional Resources

- GitHub online tutorials
  - Introduction (tutorial repeating some of what we did today): https://github.com/skills/introduction-to-github
  - Reviewing pull requests: https://github.com/skills/review-pull-requests
  - Resolving merge conflicts: https://github.com/skills/resolve-merge-conflicts
  - List of all skills tutorials: https://github.com/skills

- GitHub student pack: https://education.github.com/pack