

# Python Programming - Day 2

More Python Concepts, APIs, Recursion,  
GitHub, Refining Ideas

# Finish Mad Libs

# Review

```
1 adjective1 = input("Tell me an adjective, and click enter. ")
2 noun1 = input("Tell me a noun (plural), and click enter. ")
3 noun2 = input("Tell me another noun, and click enter. ")
4 adjective2 = input("Tell me an another adjective, and click enter. ")
5
6 print ("Roses are " + adjective1)
7 print (noun1 + " are blue")
8 print (noun2 + " is " + adjective2)
9 print ("And so are you!")
```

```
Tell me an adjective, and click enter. red
Tell me a noun (plural), and click enter. violets
Tell me another noun, and click enter. sugar
Tell me an another adjective, and click enter. sweet
Roses are red
violets are blue
sugar is sweet
And so are you!
```

# More Python Concepts

# Tuples

```
1 # string tuple
2 metals = ('aluminum', 'aluminium')
3 print(metals)
4
5 # integer tuple
6 nums = (42, 73, 8)
7 print(nums)
8
9 # mixed tuple
10 leon = ('New York', 183)
11 print(leon)
12
13 # nested tuple
14 wow = ([ 'can', 'use', 'lists' ], ( 'wow', 'omg' ))
15 print(wow)
```

```
('aluminum', 'aluminium')
(42, 73, 8)
('New York', 183)
([ 'can', 'use', 'lists' ], ( 'wow', 'omg' ))
```

- > **immutable ordered collection of elements**
- > can combine types
- > can contain mutable elements

# Tuple Indexing and Length

```
1 # indexing
2 numbers = ('zero', 'first', 'second')
3 print(numbers[0])
4 print(numbers[1])
5 print(numbers[2])
6
7 # negative indexing
8 print(numbers[-1])
9
10 # range indexing
11 print(numbers[1:])
12 print(numbers[:1])
13 print(numbers[0:2])
14
15 # length
16 print(len(numbers))
```

```
zero
first
second
second
('first', 'second')
('zero',)
('zero', 'first')
3
```

# Sets

```
1 # set of strings  
2 string_set = {'pen', 'apple', 'pineapple'}  
3 print(string_set)  
4  
5 # set of integers  
6 even_set = {2, 4, 6, 8}  
7 print(even_set)  
8  
9 # mixed datatypes  
10 mixed_set = {2.0, 'socks', (1, 2, 3)}  
11 print(mixed_set)
```

```
{'pineapple', 'pen', 'apple'}  
{8, 2, 4, 6}  
{2.0, 'socks', (1, 2, 3)}
```

> **mutable** **unordered**  
**collection** **of** **immutable**  
**unique** **elements**

> No **mutable** **elements**  
like **dictionaries** or  
**lists**

> Can **mix** **datatypes** **of**  
**elements**

# Adding Elements to a Set

```
1 # empty set
2 empty_set = set()
3 print(empty_set)
4
5 # adding elements to a set
6 empty_set.add("aloha")
7 print(empty_set)
8
9 # adding multiple elements
10 empty_set.update([20,'Q',(1,0)])
11 print(empty_set)
```

```
set()
{'aloha'}
{(1, 0), 'Q', 20, 'aloha'}
```

- > empty set: `set()`
- > adding: `.add()`
- > multiple: `.update()`

# Removing Elements from a Set

```
1 # initialize set
2 fish = {'one fish', 'two fish', 'red fish', 'blue fish'}
3 print(fish)
4
5 # remove an element
6 fish.remove('red fish')
7 print(fish)
8
9 # remove random element
10 fish.pop()
11 print(fish)
12
13 # clear the set
14 fish.clear()
15 print(fish)
```

```
{'red fish', 'blue fish', 'one fish', 'two fish'}
{'blue fish', 'one fish', 'two fish'}
{'one fish', 'two fish'}
set()
```

- > remove: .remove()
- > random: .pop()
- > all: .clear()

# Set Operations

```
1 A = {1, 2, 3, 5, 6, 9}
2 B = {1, 3, 4, 7, 8, 9}
3
4 # union
5 union = A|B
6 print('union:',union)
7
8 # intersection
9 intersection = A&B
10 print('intersection:',intersection)
11
12 # elements of A, not B
13 difference = A - B
14 print('A-B:', difference)
15 # elements of B, not A
16 difference = B - A
17 print('B-A:', difference)
18
19 # elements that aren't overlapping
20 symmetric_difference = A ^ B
21 print('Non Overlap:', symmetric_difference)
```

```
union: {1, 2, 3, 4, 5, 6, 7, 8, 9}
intersection: {1, 3, 9}
A-B: {2, 5, 6}
B-A: {8, 4, 7}
Non Overlap: {2, 4, 5, 6, 7, 8}
```

# List Comprehension

```
1 # not pythonic list of 5 zeros
2 list1 = []
3 for i in range(5):
4     list1.append(0)
5 print(list1)
6
7 # python list of 5 zeros
8 list2 = [0 for i in range(5)]
9 print(list2)
```

# List Comprehension

```
1 # evaluate expression
2 expression = [i**2 for i in range(5)]
3 print(expression)
4
5 # even number
6 even = [i for i in range(10) if i%2 == 0]
7 print(even)
8
9 # doing both!
10 both = [i**2 for i in range(10) if i%2 == 0]
11 print(both)
```

```
[0, 1, 4, 9, 16]
[0, 2, 4, 6, 8]
[0, 4, 16, 36, 64]
```

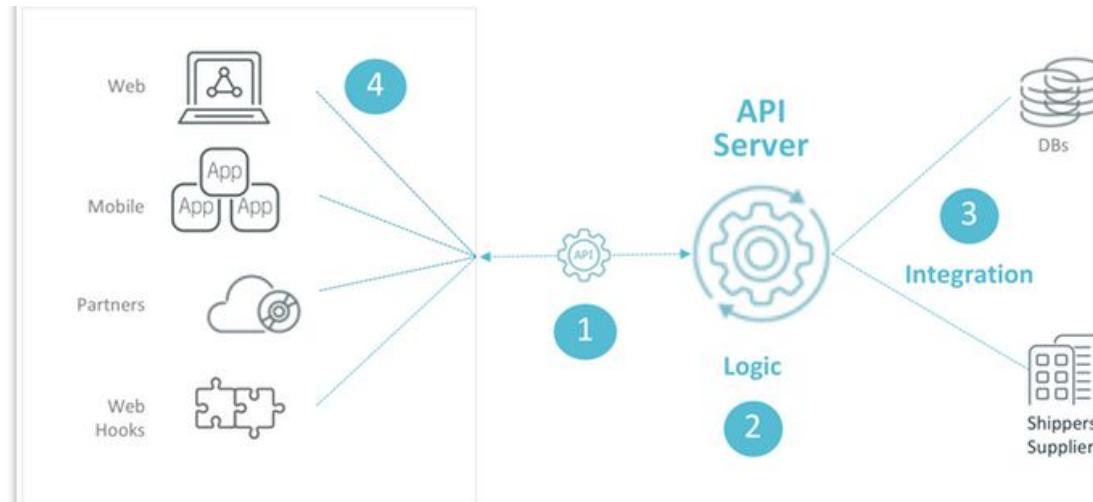
Formula:

```
result = [<transform> <iteration> <filter>]
```

# **Short Intro to APIs**

# APIs

- API = Application Programming Interface



# Why use an API?

- Goal of an API = make the life of a developer easier
- Putting difficult functions into easy to use *endpoints*
- “You can order bread from a bakery, and the bread will come the way you want it, even if you don’t know how to make the bread.”



Our weather API is simple, clear and free. We also offer higher levels of support, please see our [paid plan options](#). To access the API you need to sign up for an [API key](#) if you are on a free or paid plan.

## Current weather data

[API doc](#) [Subscribe](#)

- Access current weather data for any location including over 200,000 cities
- Current weather is frequently updated based on global models and data from more than 40,000 weather stations
- Data is available in JSON, XML, or HTML format
- Available for Free and all other paid accounts

## 5 day / 3 hour forecast

[API doc](#) [Subscribe](#)

- 5 day forecast is available at any location or city
- 5 day forecast includes weather data every 3 hours
- Forecast is available in JSON and XML
- Available for Free and all other paid accounts

## 16 day / daily forecast

[API doc](#) [Subscribe](#)

- 16 day forecast is available at any location or city
- 16 day forecast includes daily weather
- Forecast is available in JSON and XML
- Available for all paid accounts

## Historical data

[API doc](#) [Subscribe](#)

- Through our API we provide city historical weather data for 37,000+ cities
- Historical data is available for 1 month previous in Starter account, for 1 year previous in Medium accounts, and for 5 years in History Bulk

## History Bulk

[API doc](#) [GET](#)

- We have recently launched History Bulk functionality that provides weather data for 37,000+ cities.
- Historical data is available for 5 years and Pricing is simple and easy - just \$10 for one city, no matter how much data will you receive.

## Weather map layers

[API doc](#) [Subscribe](#)

- Weather maps include precipitation, clouds, pressure, temperature, wind, and more
- Connect our weather maps to your mobile applications and websites
- Use as layers in Direct Tiles, OpenLayers, Leaflet, and Google Maps
- Available for Free and all other paid accounts

## UV Index BETA

[API doc](#) [Subscribe](#)

- Current UV index (Clear Sky) and historical data are available for any geo location (lat/lon)
- Interpreting of the UV Index and recommended protection are provided
- Data is available in JSON
- Available for Professional and Enterprise

## Weather stations

[API doc](#) [Subscribe](#)

- API for managing your personal weather stations
- Creation of the station and measurements transfer
- Receiving the aggregated measurements from the station
- Available for Free and all other paid

## Bulk downloading

[API doc](#) [Subscribe](#)

- We provide number of bulk files with current weather and forecasts
- Current weather bulk is available for 20,000 cities
- Variety of hourly and daily forecast bulks depends on frequency of data updating
- Available for Professional and Enterprise

Support Center

Weather in your city

Sign In

Sign Up

°C

°F

# OpenWeatherMap

Weather Maps API Price Partners Stations Widgets Blog

## Price

Home / Price

Subscribe to current weather, forecasts, and historical data collections and enjoy our fast simple API!  
Please, read [How to buy](#) before you subscribe.

### Current weather and forecasts collection

	Free	Startup	Developer	Professional	Enterprise
<b>Price</b> Price is fixed, no other hidden costs (VAT is not included)	Free	40 USD / month	180 USD / month	470 USD / month	2,000 USD / month
<b>Subscribe</b>	<a href="#">Get API key and Start</a>	<a href="#">Subscribe</a>	<a href="#">Subscribe</a>	<a href="#">Subscribe</a>	<a href="#">Subscribe</a>
Calls per minute (no more than)	60	600	3,000	30,000	200,000
Current weather API	✓	✓	✓	✓	✓
5 days/3 hour forecast API	✓	✓	✓	✓	✓
16 days/daily forecast API	-	✓	✓	✓	✓
Weather maps API	✓	✓	✓	✓	✓
Bulk download	-	-	-	✓	✓
UV index (beta)	✓	✓	✓	✓	✓
Air pollution (beta)	✓	✓	✓	✓	✓
Weather alerts (beta)	✓	✓	✓	✓	✓
Service					

# How to get accurate API response

- 1 Do not send requests more than 1 time per 10 minutes from one device/one API key. Normally the weather is not changing so frequently.
- 2 Use the name of the server as [api.openweathermap.org](http://api.openweathermap.org). Please never use the IP address of the server.
- 3 Call API by **city ID** instead of city name, city coordinates or zip code. In this case you get precise respond exactly for your city. The cities' IDs can be found in the following file: [Cities' IDs list](#).
- 4 Free and Startup accounts have limitation of capacity and data availability. If you do not get respond from server do not try to repeat your request immediately, but only after 10 min. Also we recommend to store your previous request data.

## Access limitation

If account exceeds the limits, then a notification about limits exceeding is sent. If it repeats again, then the account is blocked for an hour. Therefore, the lock period is increased by one hour until 4 hours block sets. When blocking repeats the fifth time, then the lock period lasts 24 hours. This rule is cycled. Please be carefull with the number of API calls you complete.

### Response from API about blocking

```
{  
  "cod": 429,  
  "message": "Your account is temporary blocked due to exceeding of requests limitation of your subscription type. Please choose the pro  
}  
▶
```

Find more details in our [price-list](#) or contact us via [Support Center](#).

## Create New Account

Username

Enter email

Password  Repeat Password

We will use information you provided for management and administration purposes, and for keeping you informed by mail, telephone, email and SMS of other products and services from us and our partners. You can proactively manage your preferences or opt-out of communications with us at any time using Privacy Centre. You have the right to access your data held by us or to request your data to be deleted. For full details please see the OpenWeather [Privacy Policy](#).

- I am 16 years old and over
- I agree with [Privacy Policy](#), [Terms and conditions of sale](#) and [Websites terms and conditions of use](#)

I consent to receive communications from OpenWeather Group of Companies and their partners:

- System news (API usage alert, system update, temporary system shutdown, etc)
- Product news (change to price, new product features, etc)
- Corporate news (our life, the launch of a new service, etc)



# OpenWeatherMap

[Weather](#) [Maps](#) [API](#) [Price](#) [Partners](#) [Stations](#) [Widgets](#) [News](#) [About](#)

## API keys

[Home](#)[Setup](#) [API keys](#) [My Services](#) [My Payments](#) [Billing plans](#) [Map editor](#) [Block logs](#) [History bulk](#)[Logout](#)

Activation of an API key for **Free** and **Startup** accounts takes 10 minutes. For other accounts it takes from 10 to 60 minutes.  
You can generate as many API keys as needed for your subscription, they accumulate the total load from all of them.

### Key

a8fa409ad5e8167ad544b6737181b051

### Name

Default



### Create key

\* Name

[Generate](#)

## Weather in your city

- Find your city
- Weather maps

## Map layers

- Examples of weather map layers
- Map styles legend
- Libraries to connect weather layers

## Weather station network

- How to connect your weather station

## About

The screenshot shows the top navigation bar of the OpenWeatherMap website. It includes links for 'Support Center', 'Weather in your city' (with a search icon), 'Sign In', 'Sign Up', and temperature units ('°C' and '°F'). Below the main header, there's a secondary navigation bar with links for 'Weather', 'Maps', 'API', 'Price', 'Partners', 'Stations', 'Widgets', and 'Blog'. The 'OpenWeatherMap' logo is also present.

## Current weather data

[Home](#) / [API](#) / Current weather

Access current weather data for any location on Earth including over 200,000 cities! Current weather is frequently updated based on global models and data from more than 40,000 weather stations. Data is available in JSON, XML, or HTML format.

### Call current weather data for one location

Please remember that all Examples of API calls that listed on this page are just samples and do not have any connection to the real API service!

#### By city name

##### Description:

You can call by city name or city name and country code. API responds with a list of results that match a searching word.

There is a possibility to receive a central district of the city/town with its own parameters (geographic coordinates/id/name) in API response. [Example](#)

##### API call:

`api.openweathermap.org/data/2.5/weather?q=(city name)`

`api.openweathermap.org/data/2.5/weather?q=(city name),(country code)`

##### Parameters:

`q` city name and country code divided by comma, use ISO 3166 country codes

##### Examples of API calls:

`api.openweathermap.org/data/2.5/weather?q=London`

`api.openweathermap.org/data/2.5/weather?q=London,uk`

- Call current weather data for one location
  - By city name
  - By city ID
  - By geographic coordinates
  - By ZIP code
- Call current weather data for several cities
  - Cities within a rectangle zone
  - Cities in cycle
  - Call for several city IDs
- Bulk downloading
- Parameters of API respond
  - JSON
  - XML
  - List of condition codes
  - Min/max temperature in current weather API and forecast API
- Other features
  - Format
  - Search accuracy
  - Units format
  - Multilingual support
  - Call back function for JavaScript code

# API Request (GET Request)

- Base URL
- Query
- Application Key

```
14
15 # http://api.openweathermap.org/data/2.5/weather?q=Hong Kong&appid=62b2199289dcadb070db52a407636bc1
16 base_url = "http://api.openweathermap.org/data/2.5/weather"
17 query = "Hong Kong"
18 app_id = "62b2199289dcadb070db52a407636bc1"
19 url = base_url + "?q=" + query + "&appid=" + app_id
20
21 req = requests.get(url)
22
23 stuff = req.json()
24 pprint.pprint(stuff)
25
```

Important: Please verify your email address before continuing to use the API or you will be limited to 100 operations.



PRODUCTS SOLUTIONS DEVELOPERS COMPANY DEMO PRICING LEON

LOG OUT

ACCOUNT

• Applications

API Keys

Profile

Billing

Usage

## Manage Your Applications

Select an application to view details.

CREATE NEW APPLICATION

my-first-application

Created Jul 31 2018, 0:19



PRODUCT

Technology

Model Gallery

Clarifai Explorer

Pricing

DEVELOPERS

Documentation

API Reference

API Status

Community

COMPANY

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<https://rapidapi.com/>

The screenshot shows the RapidAPI Marketplace interface. At the top, there is a search bar and a navigation bar with links to Marketplace, About, Docs, Dashboard, Blog, and a user profile section. The main content area displays the details for the **GoogleTranslate** API.

**GoogleTranslate** ★★★★☆  
Github: <https://github.com/RapidSoftwareSolution...>  
Last updated: 12/07/2018

[Overview](#) [Functions](#) [Discussions](#) [Docs](#)

Installs: Today: 452 | All Time: 89224  
Developer: [dimashirokov](#)

**Test This Block**

**POST detectLanguage**

**POST translate** (selected)

**Body parameter**

apiKey: AlzaSyDEAE3vLTN2ODev3ev1kIGxgwRd-FYpUJU  
The api key obtained from Google Cloud.

**Required Parameters**

**string** (Body parameter): hello how are you?  
The string to translate.

**targetLanguage** (Body parameter): zh-CN  
The ISO 639-1 language code to translate the input to. All supported languages: <https://cloud.google.com/translate/docs/languages>

**Optional Parameters ▶**

Show Optional Parameters

**TEST Function**

CODE (Python):  
Callback: Success 200  
Response: 你好! 你好吗?

# **GIT and Command Line**

Version Control and Collaboration

# **Setup GIT**



git download



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More

Settings

Tools

About 193,000,000 results (0.25 seconds)



## Git - Downloads

<https://git-scm.com/downloads> ▾

GUI Clients. Git comes with built-in GUI tools (`git-gui`, `gitk`), but there are several third-party tools for users looking for a platform-specific experience. View GUI ...

### Windows

You are downloading the latest (2.18.0) 32-bit version of Git for ...

### GUI Clients

GUI Clients. Git comes with built-in GUI tools for committing (`git-gui` ...

### Mac OS X

You are downloading version 2.18.0 of Git for the Mac platform ...

### Logos

Full color Git logo for light backgrounds. PNG (bitmap ...

[More results from git-scm.com »](#)

## Linux GUIs - Git - GUI Clients

<https://git-scm.com/download/gui/linux> ▾

... Staging Area · Free and Open Source · Trademark · Documentation · Reference · Book · Videos · External Links · [Downloads](#) · GUI Clients · Logos · Community ...

## Git for Windows

<https://gitforwindows.org/> ▾

We bring the awesome Git VCS to Windows. ... [Download](#) [Contribute](#) ... Git for Windows provides a BASH emulation used to run Git from the command line.



## About

## Documentation

## Downloads

GUI Clients

Logos

## Community

The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

# Downloads



Mac OS X



Windows



Linux/Unix

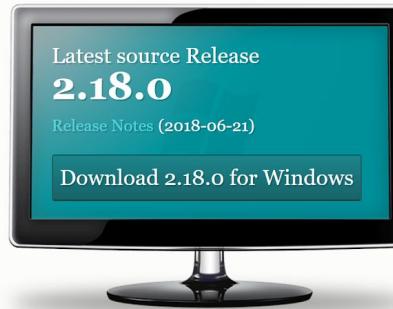
Older releases are available and the [Git source repository](#) is on GitHub.

## GUI Clients

Git comes with built-in GUI tools ([git-gui](#), [gitk](#)), but there are several third-party tools for users looking for a platform-specific experience.

[View GUI Clients →](#)

## Git via Git



Latest source Release

**2.18.0**

[Release Notes \(2018-06-21\)](#)

[Download 2.18.0 for Windows](#)

## Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

[View Logos →](#)

# **Git Bash & Command Line Basics**

Documents

File Home Share View

This PC > Documents

Search Documents

Quick access

- Desktop
- Downloads
- Documents
- Pictures

Name	Status	Date modified	Type	Size
Adobe	✓	2018-07-09 4:48 PM	File folder	
Github	✓	2018-07-26 6:07 PM	File folder	
hello	✓	2018-07-30 10:24	File folder	
MYcamp	✓	2018-07-03 4:27 PM	File folder	

View >

Sort by >

Group by >

Refresh

Customize this folder...

---

Paste

Paste shortcut

Undo Delete Ctrl+Z

Git GUI Here

Git Bash Here

---

Share a OneDrive link

More OneDrive sharing options

View online

Always keep on this device

Free up space

---

Give access to >

---

New >

---

Properties

4 items

Right click, Git Bash!



MINGW64:/c/Users/charl/OneDrive/Documents



```
charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents  
$ |
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ ls
Adobe/ desktop.ini Github/ MYcamp/
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ dir
Adobe desktop.ini Github MYcamp
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ |
```

Leon says "dir is for stupid windows  
command prompt"

Charleen says "they're literally the  
same thing"

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ ls
Adobe/ desktop.ini Github/ MYcamp/
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ mkdir hello
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ ls
Adobe/ desktop.ini Github/ hello/ MYcamp/
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ |
```

```
charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ ls
Adobe/ desktop.ini Github/ MYcamp/

charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ mkdir hello

charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ ls
Adobe/ desktop.ini Github/ hello/ MYcamp/

charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ cd hello
charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents;/hello
$ ls

charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ |
```

```
charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ touch new_file.py

charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ ls
new_file.py

charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ |
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ ls
new_file.py
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ cd ..
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ ls
Adobe/ desktop.ini Github/ hello/ MYcamp/
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents
$ |
```

# **Summary**

**ls/dir** - list current directory

**mkdir** - make directory

**cd** - change directory

**touch** - make new file

# Your Turn!

1. Explore your computer!
2. Make a new folder
3. Make a new file

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ ls
new_file.py
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ rm new_file.py
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ ls
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ |
```

```
charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ echo "print('hello')"
print('hello')
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ echo "print('hello')" > new_file.py
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ cat new_file.py
print('hello')
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/hello
$ pwd
/c/Users/char1/OneDrive/Documents/hello
```

# **Summary**

**rm** - remove a file

**echo** - echoes what you wrote

**cat** - displays the file

**pwd** - print work directory

# Your Turn!

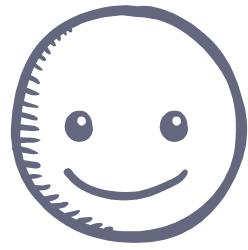
Make new files! Add stuff! Do more things!



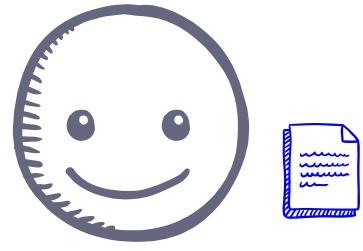
# GIT

Let's git organized!

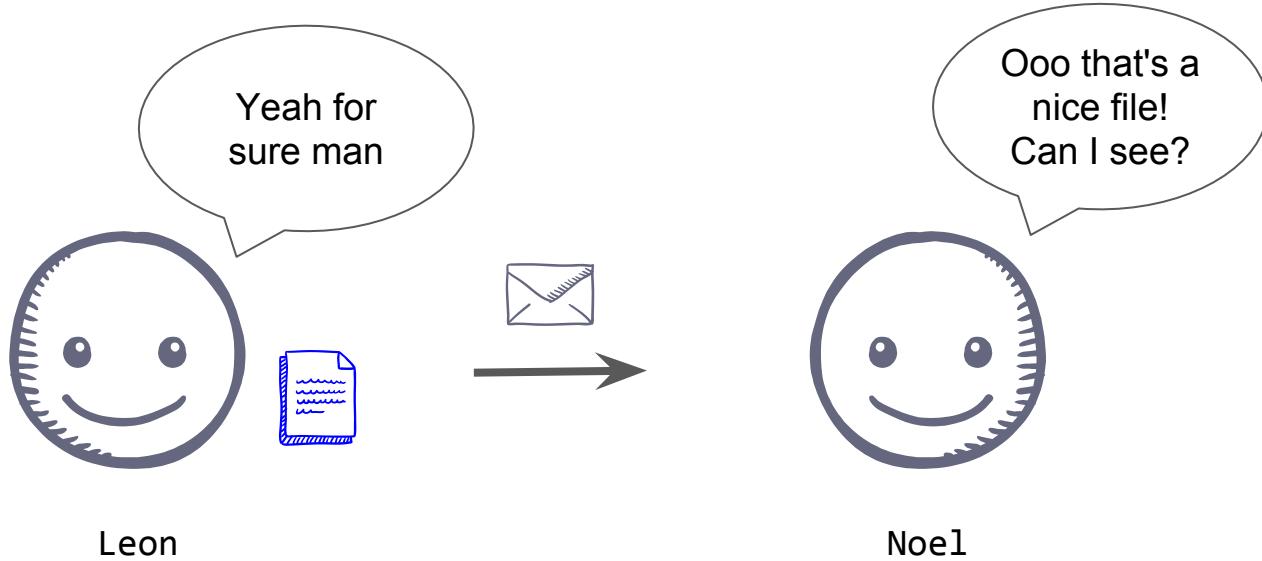
# **STORY TIME!**



Leon

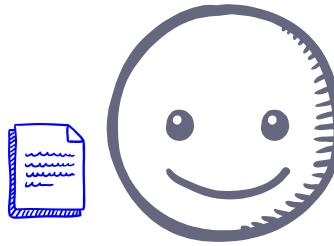


Leon has a file





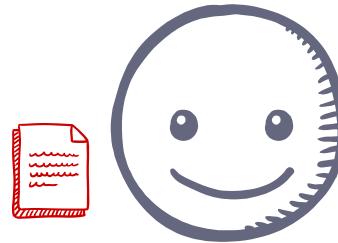
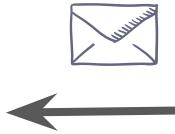
Leon



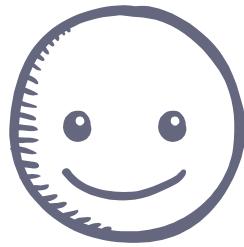
Noel



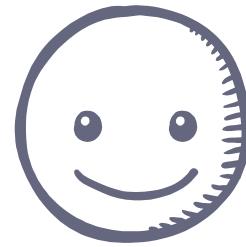
Leon



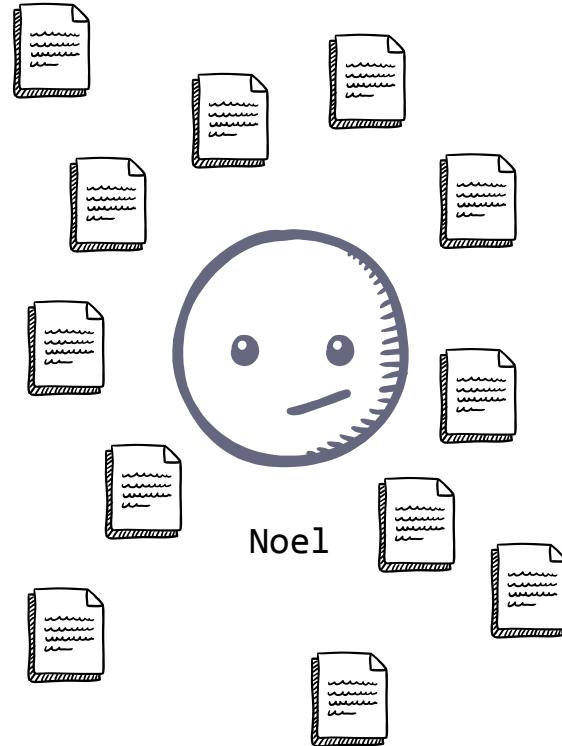
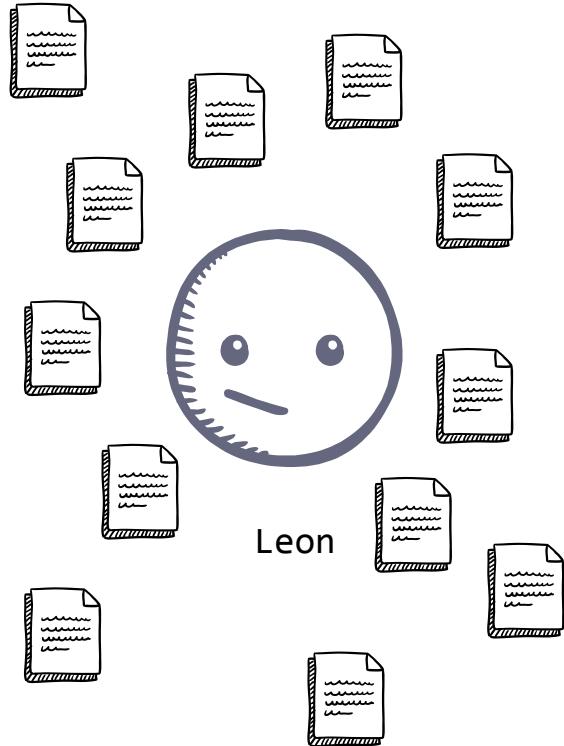
Noel



Leon



Noel

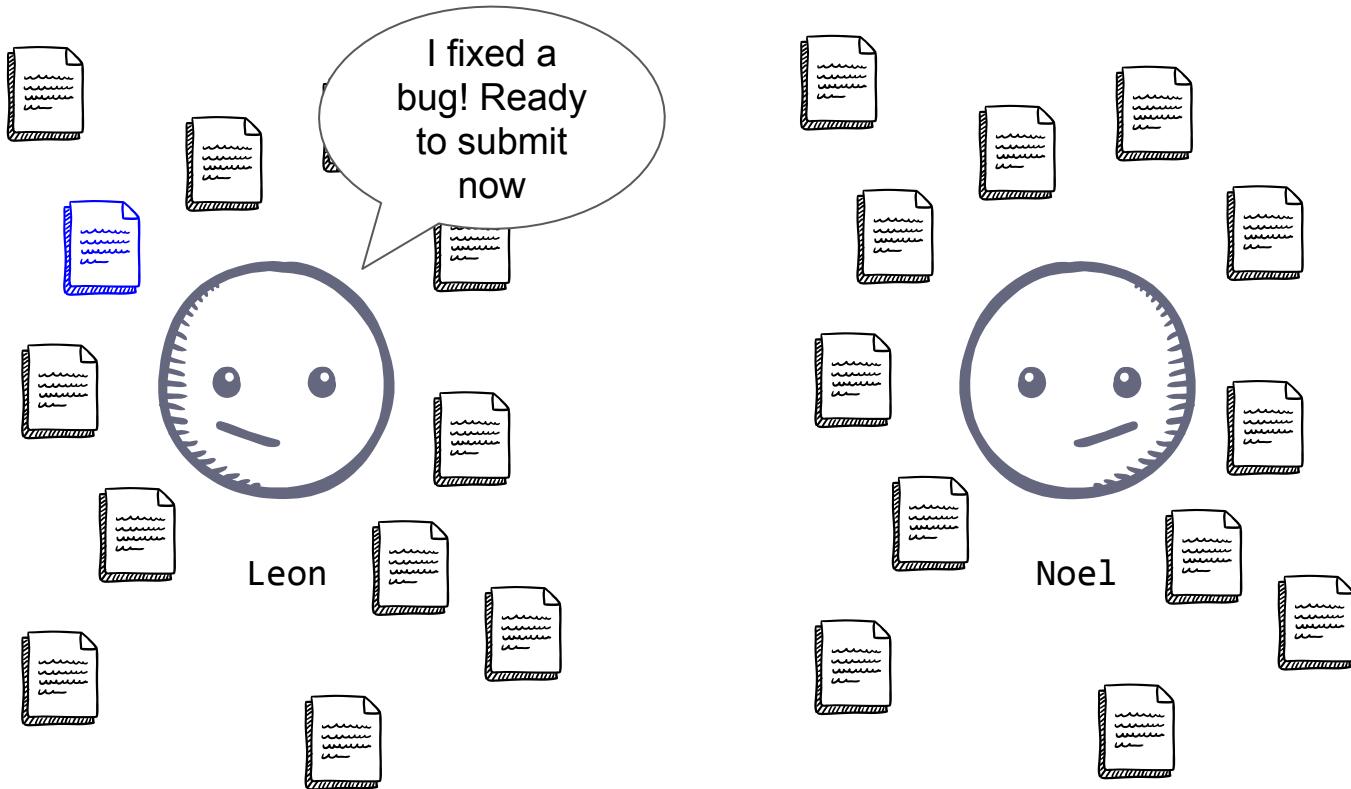


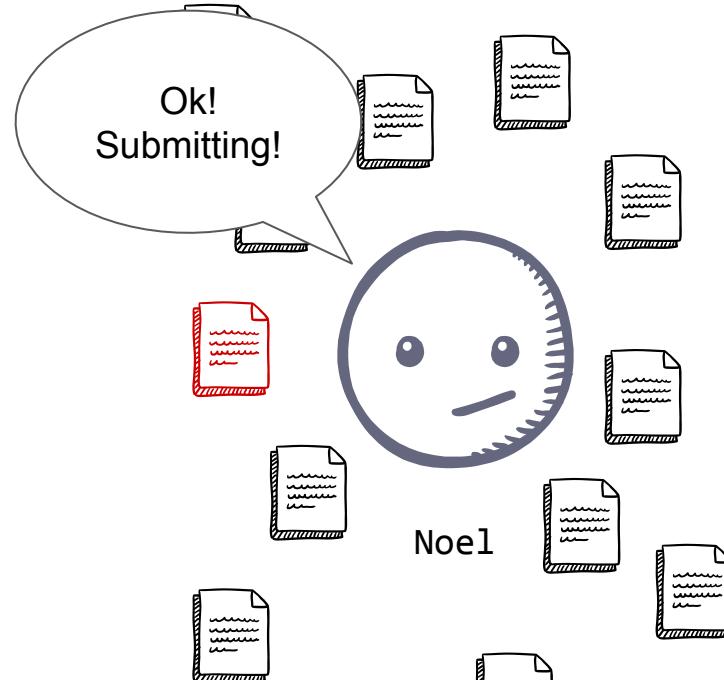
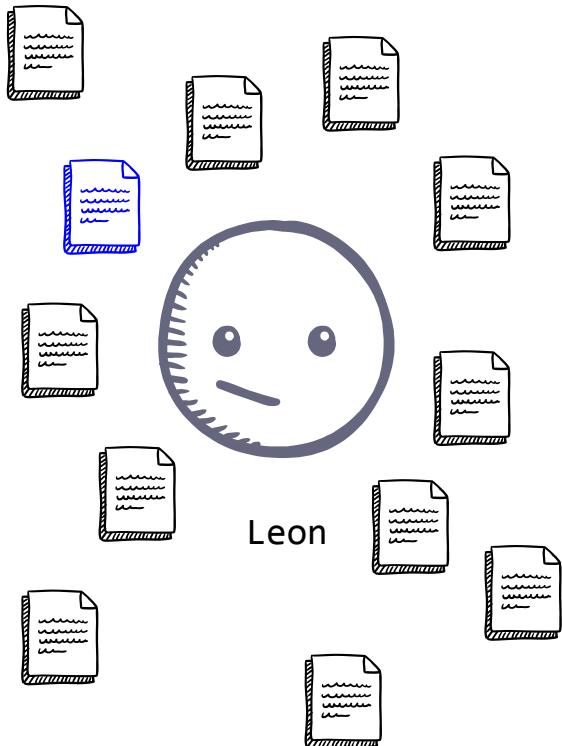
# **Things that could possibly go wrong...**

1. Synchronization
2. Collaboration
3. Version Control

# Things that could possibly go wrong...

1. Synchronization
2. Collaboration
3. Version Control





**Submitted the wrong file... :(**

# **Things that could possibly go wrong...**

## 1. Synchronization

No one knows which file is the most updated one

## 2. Collaboration

## 3. Version Control

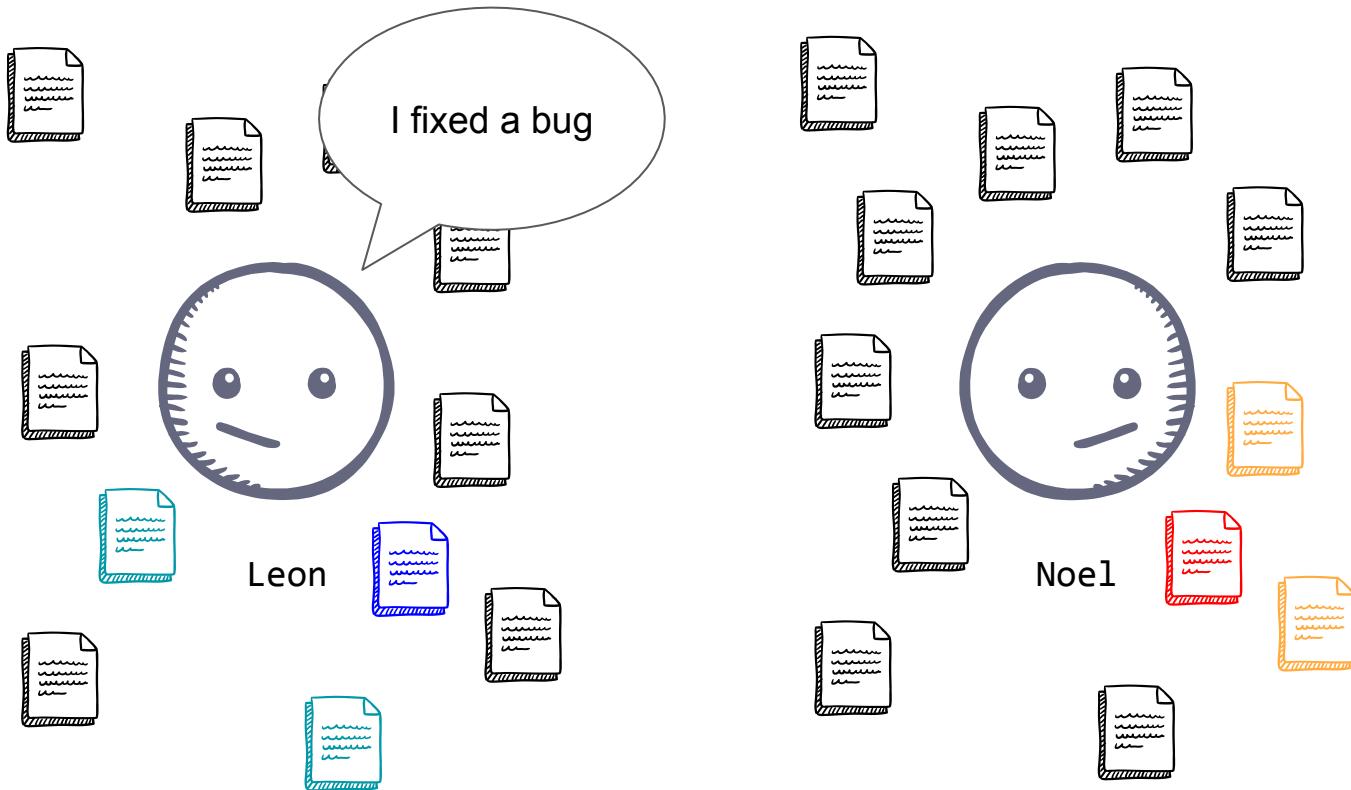
# **Things that could possibly go wrong...**

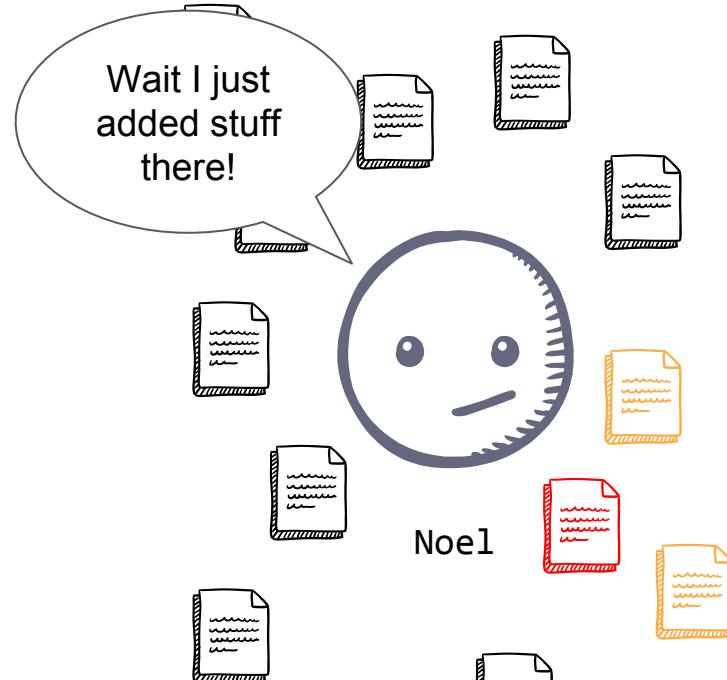
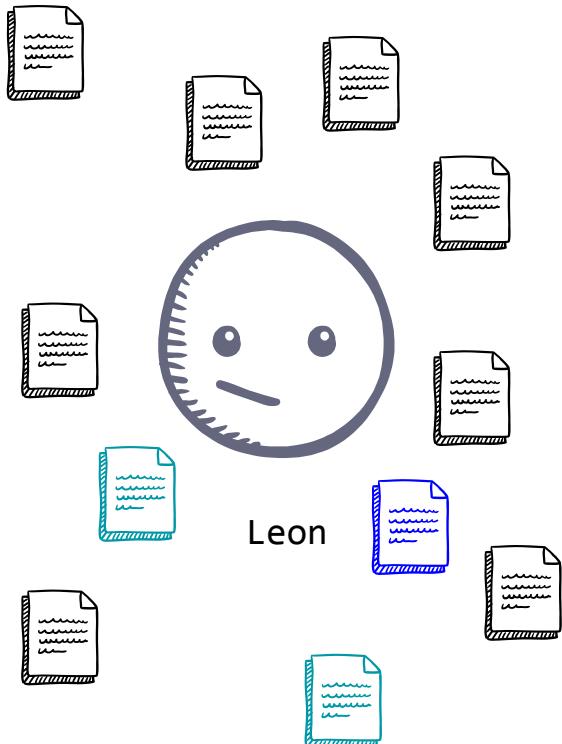
## **1. Synchronization**

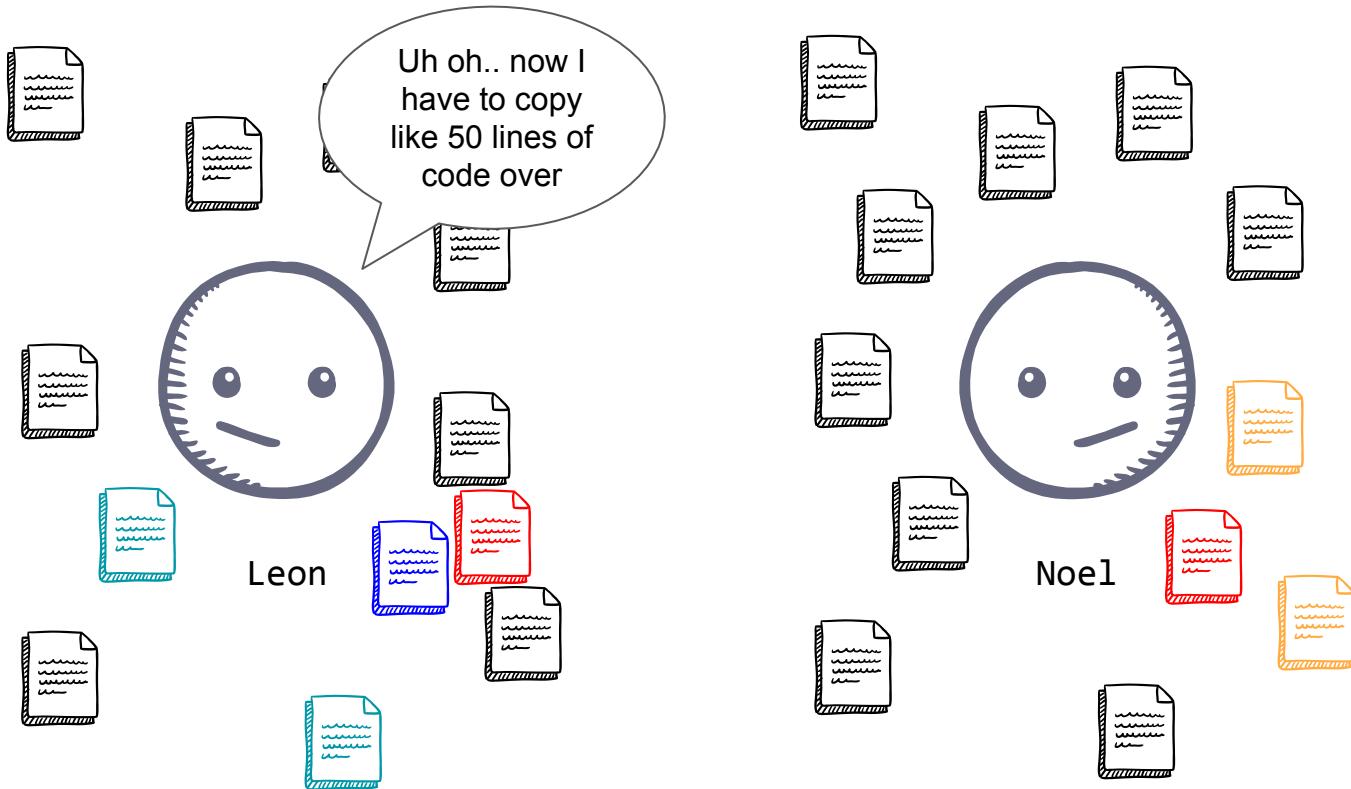
No one knows which file is the most updated one

## **2. Collaboration**

## **3. Version Control**







**Issues Merging Two Files... :(**

# Things that could possibly go wrong...

## 1. Synchronization

No one knows which file is the most updated one

## 2. Collaboration

It's hard for 2 people to work on the same file

## 3. Version Control

# **Things that could possibly go wrong...**

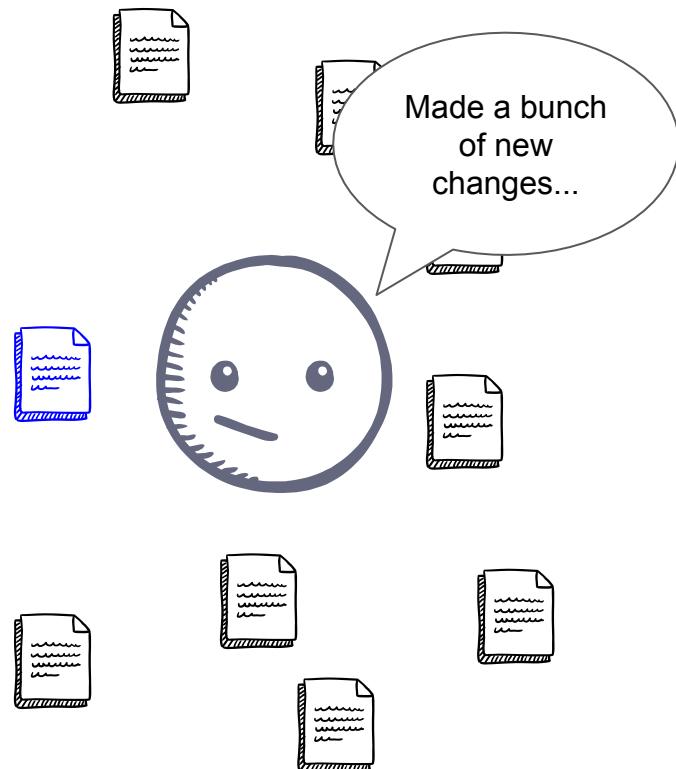
## **1. Synchronization**

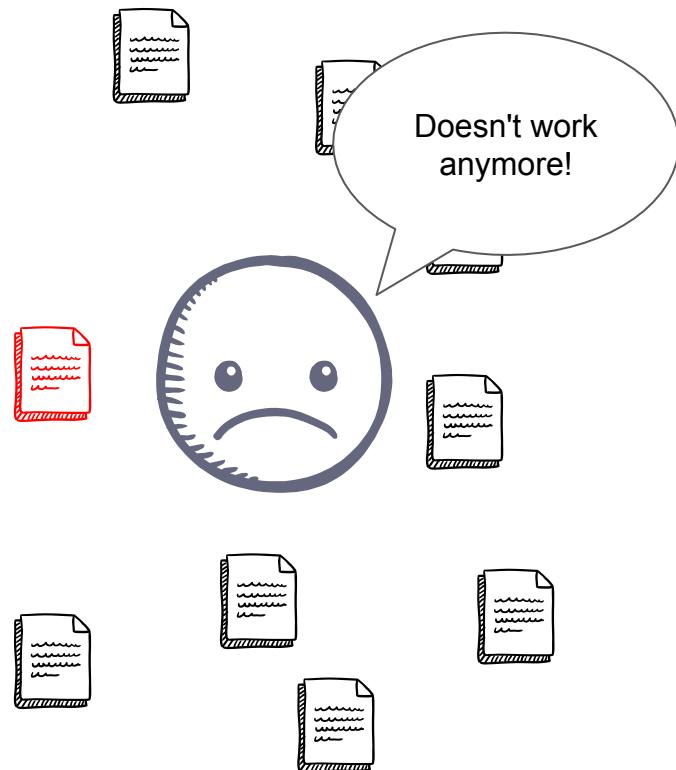
No one knows which file is the most updated one

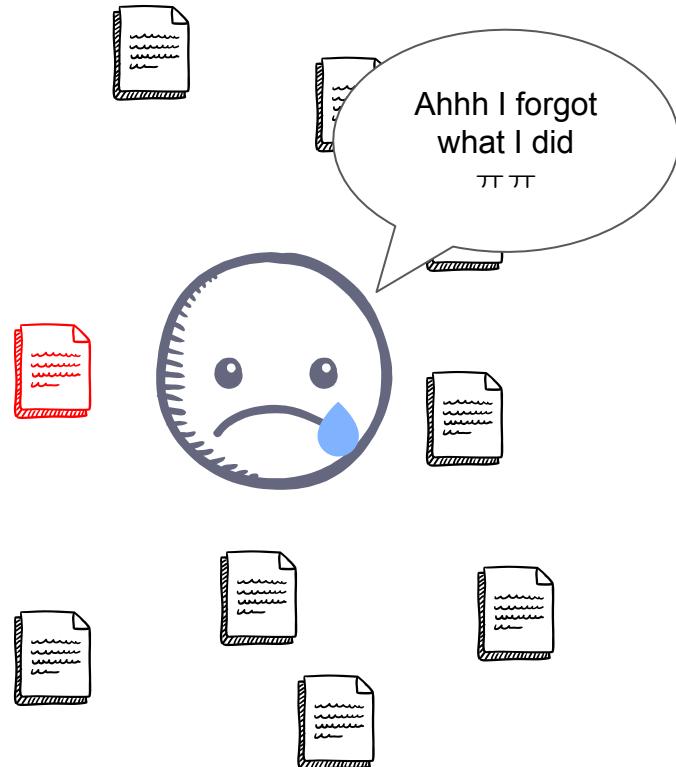
## **2. Collaboration**

It's hard for 2 people to work on the same file

## **3. Version Control**







**Can't go back...**

# Things that could possibly go wrong...

## 1. Synchronization

No one knows which file is the most updated one

## 2. Collaboration

It's hard for 2 people to work on the same file

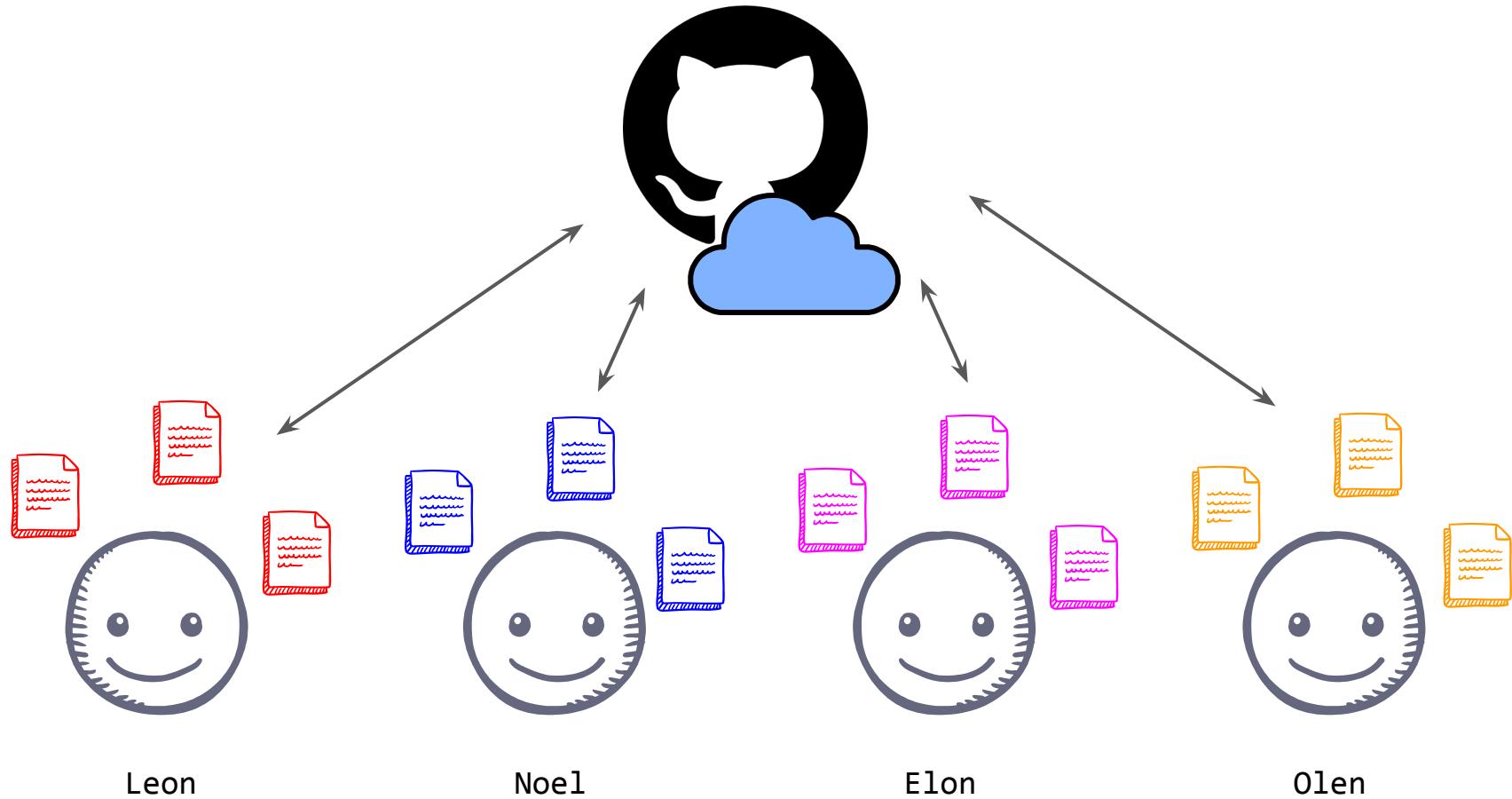
## 3. Version Control

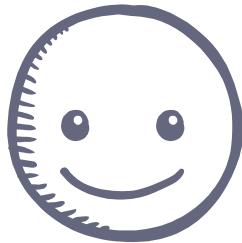
If you mess up, it's hard to go back

# **The Solution!!**



# GIT





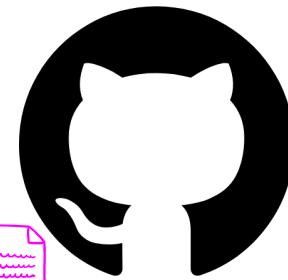
Leon

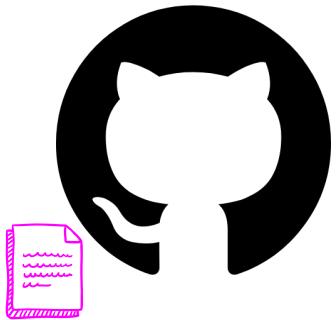


commit

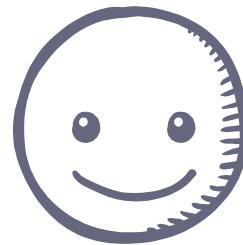


push

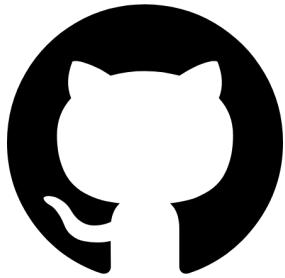




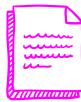
pull



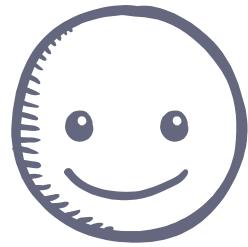
Noel



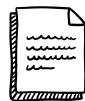
pull



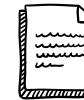
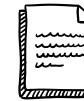
Noel

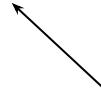
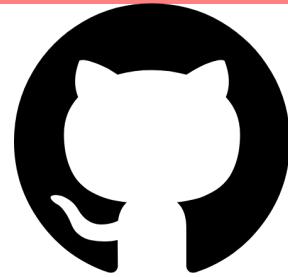


Leon



Noel

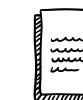


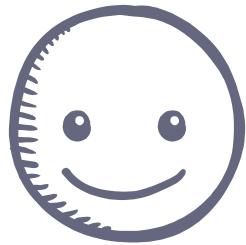
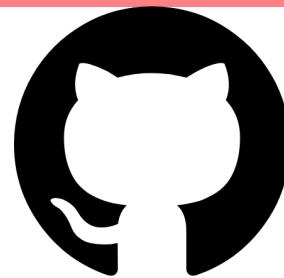


Leon

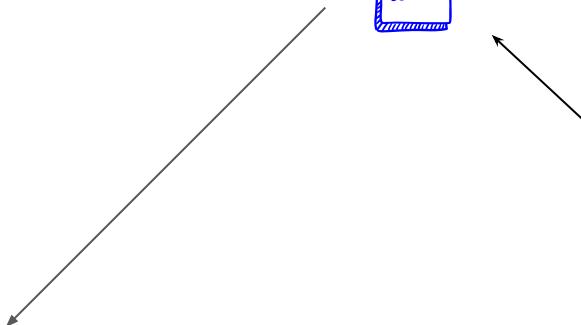


Noel





Leon

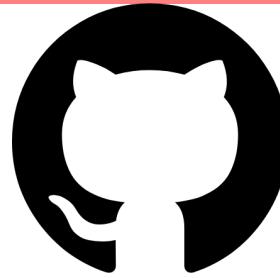


Noel

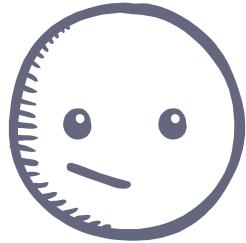
**commit** - package local changes

**push** - send commits to server

**pull** - get updated files from server



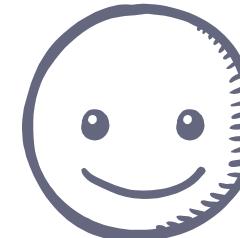
merge  
conflict



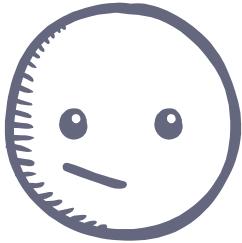
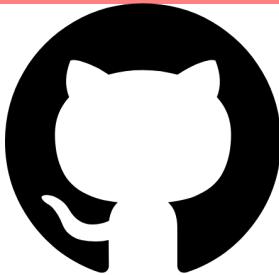
Leon



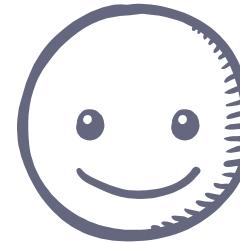
merge  
conflict



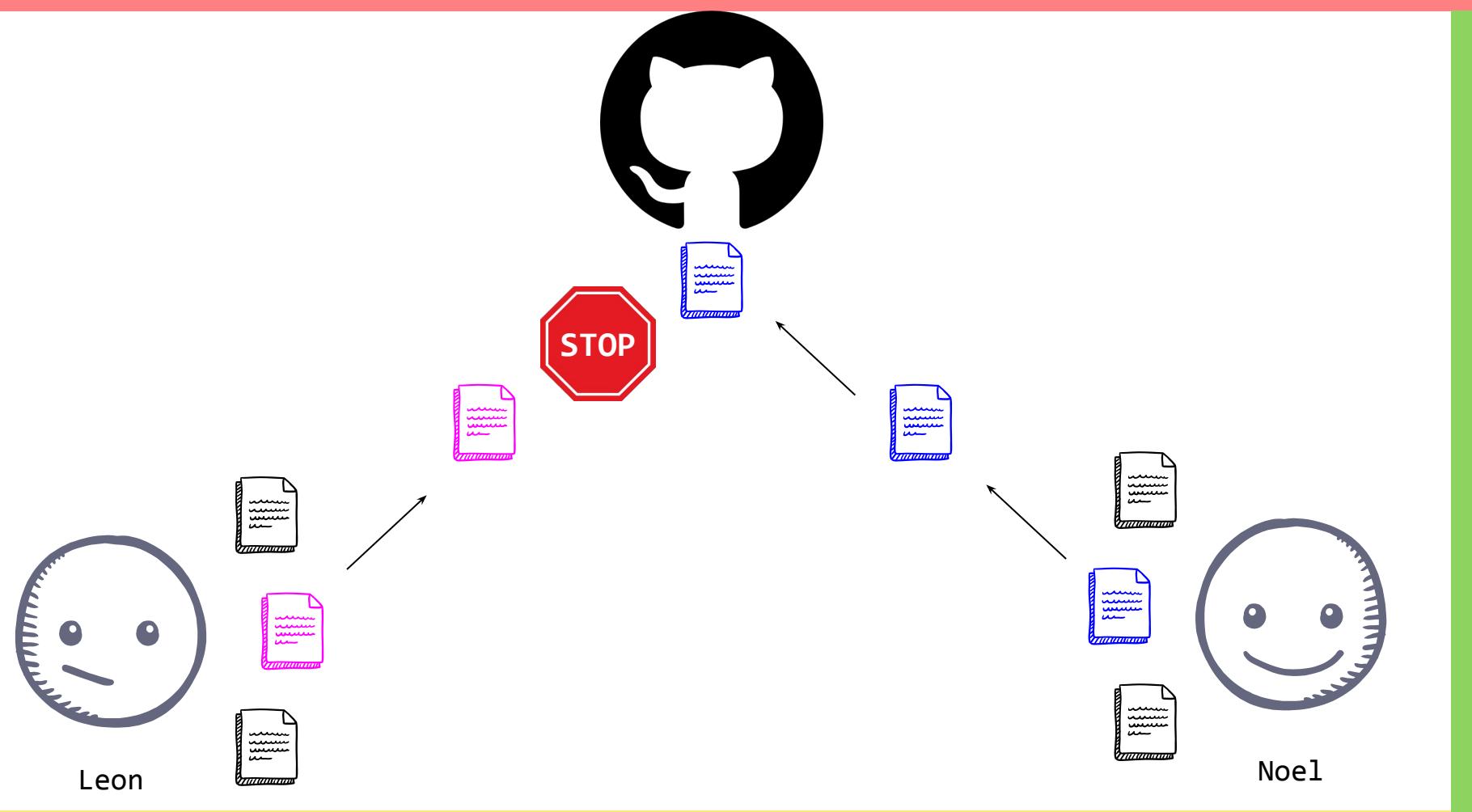
Noel

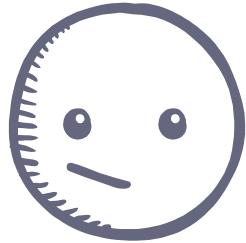
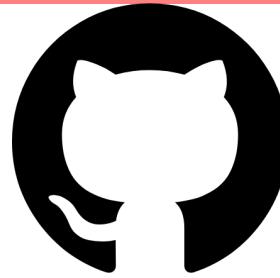


Leon

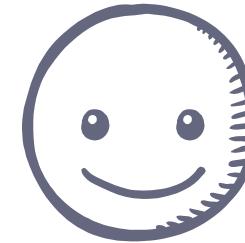
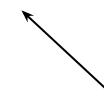
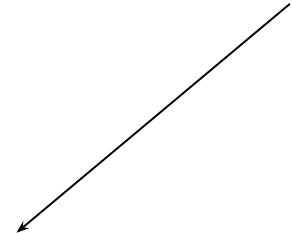


Noel



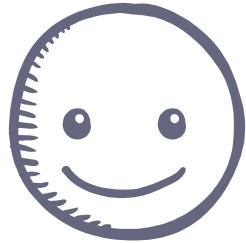
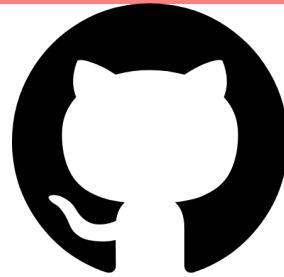


Leon

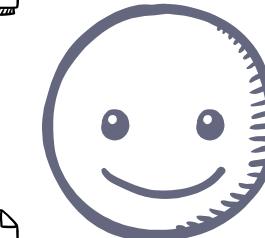
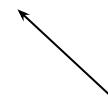
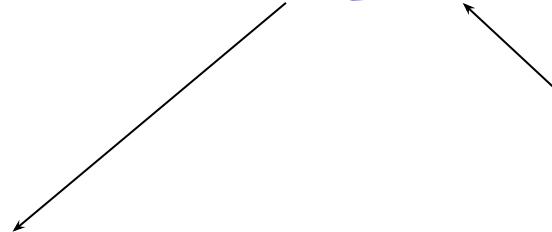


Noel

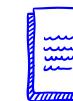




Leon



Noel





Communicate!

Try not to work on the  
same thing at the same  
time

Divide tasks

**Let's get started!**

# Making a Github account

<https://github.com/>



# Built for developers

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside millions of other developers.

Username

Pick a username

Email

you@example.com

Password

Create a password

Use at least one letter, one numeral, and seven characters.

**Sign up for GitHub**

By clicking "Sign up for GitHub", you agree to our [terms of service](#) and [privacy statement](#). We'll occasionally send you account related emails.

**repository** - a folder that git keeps track of

The screenshot shows the GitHub dashboard. At the top, there is a navigation bar with links for Pull requests, Issues, Marketplace, and Explore. On the right side of the bar are icons for notifications, a plus sign, and user profile. A blue banner at the top left informs users about new Terms of Service and Privacy Statement. Below the banner, the user's profile picture and name "charleenwang" are displayed, along with a dropdown arrow. A red circle highlights the green "New repository" button. To the right of the user info, a modal window titled "Introducing the dashboard" (Beta) asks if the user wants to opt-in to the changes, with "Opt-in" and "No thanks" buttons. The main dashboard area shows a list of repositories under "Repositories", including "charleenwang/MYCamp-Web...", "charleenwang/portfolio", "leoncheng57/MYCamp-Web...", "charleenwang/test\_extension", "Slava/ats-website", "jynnie/FASH", and "charleenwang/test". There is also a "Find a repository..." search bar. Below the repository list, there are sections for "Browse activity" and "Discover repositories". An activity feed item shows "leoncheng57 forked leoncheng57/MYCamp-Web-Dev-Lessons from charleenwang/MYCamp-Web-Dev-Lessons" on Jun 26. A "charleenwang/MYCamp-Web-Dev-Lessons" repository card is shown with a "Star" button. At the bottom, there is a "ProTip!" message about the news feed and a link to subscribe.

Our new Terms of Service and Privacy Statement are in effect.

charleenwang

New repository

Introducing the dashboard Beta

Opt-in No thanks

Repositories

Find a repository...

charleenwang/MYCamp-Web-...  
charleenwang/portfolio  
leoncheng57/MYCamp-Web-...  
charleenwang/test\_extension  
Slava/ats-website  
jynnie/FASH  
charleenwang/test

Show more

Your teams

Browse activity Discover repositories

leoncheng57 forked leoncheng57/MYCamp-Web-Dev-Lessons from charleenwang/MYCamp-Web-Dev-Lessons on Jun 26

charleenwang/MYCamp-Web-Dev-Lessons

HTML Updated Jun 20

★ Star

ProTip! The feed shows you events from people you follow and repositories you watch.

Subscribe to your news feed

# Create a new repository

A repository contains all the files for your project, including the revision history.

Owner



charleenwang ▾

Repository name

repository name



Great repository names are simple and descriptive. Your new repository will be created as repository-name tional-succotash.

Description (optional)



Public

Anyone can see this repository. You choose who can commit.



Private

You choose who can see and commit to this repository.



Initialize this repository with a README

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None ▾

Add a license: None ▾



Create repository



Search or jump to... /

Pull requests Issues Marketplace Explore

Watch + ⚙️

charleenwang / repository-name

Watch 0

Star 0

Fork 0

Code

Issues 0

Pull requests 0

Projects 0

Wiki

Insights

Settings

No description, website, or topics provided.

Edit

Add topics

1 commit

1 branch

0 releases

1 contributor

Branch: master ▾

New pull request

Create new file

Upload files

Find file

Clone or download ▾



charleenwang Initial commit

Latest commit 743a38a just now

README.md

Initial commit

just now

README.md



# repository-name

0 releases

1 contributor

Create new file

Upload files

Find file

Clone or download ▾

### Clone with HTTPS ⓘ

Use SSH

Use Git or checkout with SVN using the web URL.

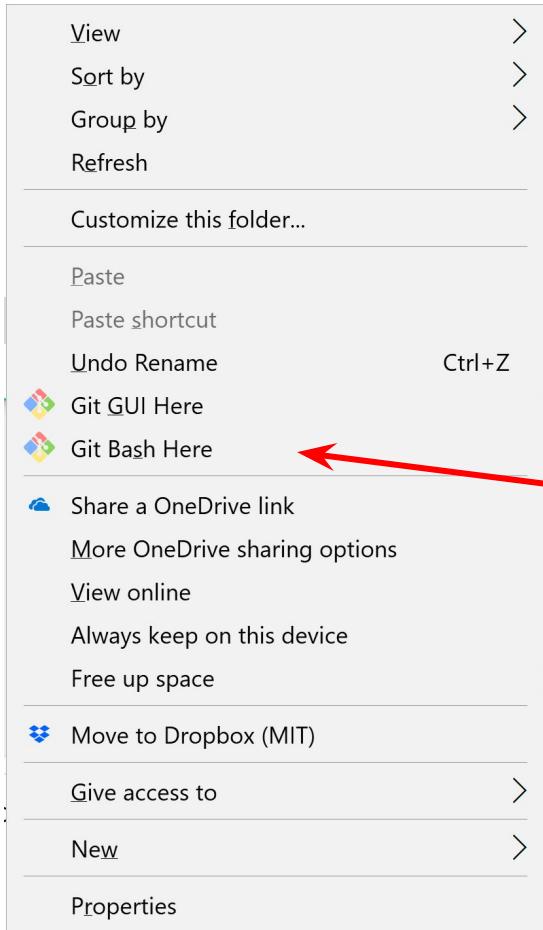
<https://github.com/charleenwang/reposito>



Copy this link

Open in Desktop

Download ZIP



- 1 Make a folder on the computer
- 2 Right click to open Git Bash

 MINGW64:/c/Users/charl/OneDrive/Documents/Github



```
charl@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/Github (master)
$
```

 MINGW64:/c/Users/charl/OneDrive/Documents/Github

-

□

×

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/Github (master)
$ git clone https://github.com/charleenwang/repository-name.git
Cloning into 'repository-name'...
remote: Counting objects: 3, done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
```

```
char1@DESKTOP-SKMOM5G MINGW64 ~/OneDrive/Documents/Github (master)
$ |
```

```
git status  
git add .  
git commit -m "write  
commit message"  
git push
```

# Making a Team Repo

Give us your GitHub usernames!



Search or jump to...



Pull requests Issues Marketplace Explore



You've been invited to the **MIT-THEi-2018** organization!

Invited by Leon Cheng

[Join MIT-THEi-2018](#)



Owners of MIT-THEi-2018 will be able to see if you have two-factor authentication enabled or not.

[View two-factor authentication settings](#)





Search or jump to...



Pull requests Issues Marketplace Explore



You are now a member of MIT-THEi-2018!



# MIT-THEi-2018

Repositories 0

People 2

Teams 0

Projects 0



Your teams don't have access to any repositories.

Create a new repository

People

2 >



charleenwang  
Charleen



leoncheng57  
Leon Cheng

# Your Turn!

Make one repo per team  
Send your partner your madlibs program!

# Refining Ideas

# 1. Categories!

# Categories

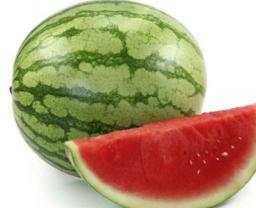
Look at your list of ideas

Find similarities in your ideas

Create a list of 3 ideas

Ideate further within those ideas!

## **2. Pugh Charts!**

			
Is it a vegetable?	+	S	+
How green?	+	S	-
How exotic?	-	S	+
How many seeds?	-	S	+