

INTRODUCTION SOFTWARE ENGINEERING

(軟體工程)

GIT TUTORIAL

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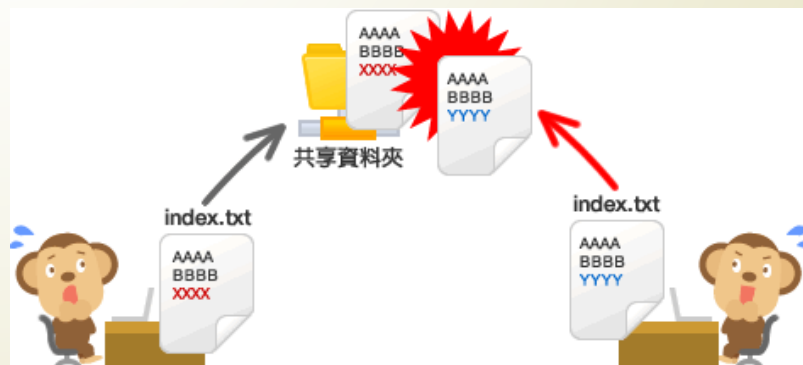
Department of Computer and Communication Engineering
National Kaohsiung University of Science and Technology

以前檔案備份

Name	
	120525_文檔_更新版.txt
	120604_文檔.txt
	120605_文檔_yourname.txt
	120605_文檔_最新.txt
	120605_文檔_最新複製.txt
	120605_文檔_修改版.txt
	120605_文檔.txt
	1200602_文檔.txt
	文檔_會議用.txt

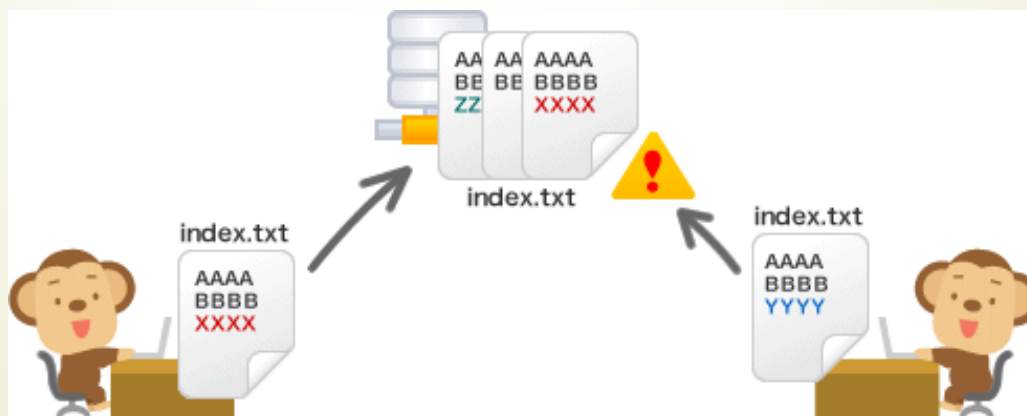
問題

- 毫無規則的命名
 - 沒有辦法區別那一個檔案是最新的了
- 組群共享操作
 - 加上編輯者的名字，具體進行了什麼樣的更改也不容易知道了
 - 同時進行編輯的話，先進行編輯的人的修改內容會被覆蓋



Git版本控制系統

- Git為分散式版本控制系統
 - 檔案的狀態作為更新歷史記錄保存起來
 - 因此可以把編輯過的檔案復原到以前的狀態，也可以顯示編輯過內容的差異。
 - 不需要複製備用檔案



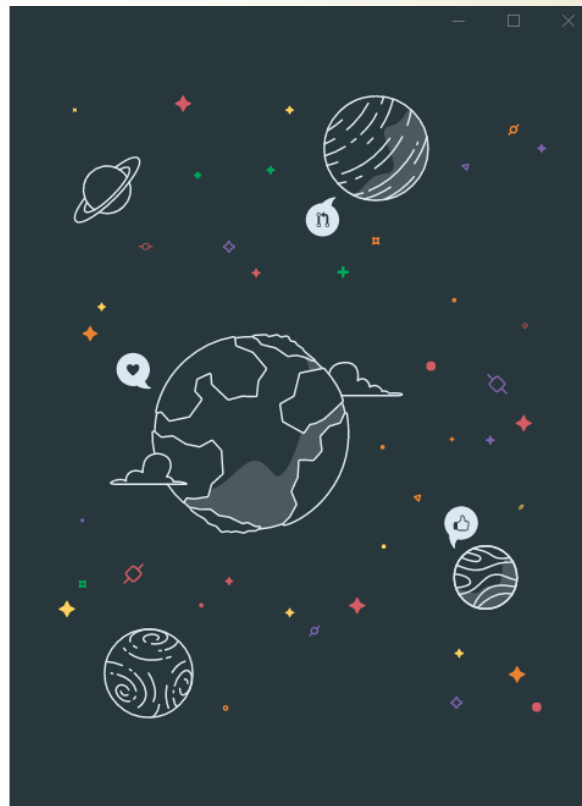
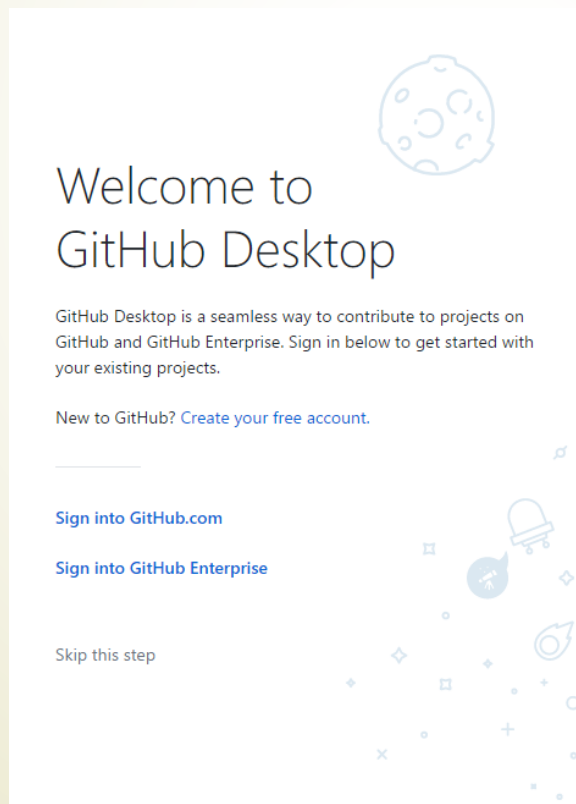
GitHub

- ▶ An open source version control system (VCS) , called *Git*
- ▶ Three interfaces to use
 - ▶ Command line
 - ▶ Desktop
 - ▶ Windows or Mac OS
 - ▶ Web

Installing GitHub Desktop

➤ Download page

➤ <https://desktop.github.com/>



Authenticating to GitHub

➤ Pass

Configuring basic settings

The image shows a 'Git Options' dialog box with three tabs: 'Accounts', 'Git', and 'Advanced'. The 'Git' tab is selected. It contains fields for 'Name' (filled with 'Tidustseng') and 'Email' (filled with '31063431+Tidustseng@users.noreply.github.com'). At the bottom are 'Save' and 'Cancel' buttons. In the background, another dialog box is partially visible, showing the 'Advanced' tab with options like 'Atom?' and checkboxes for 'Log before removing repositories' and 'Log before discarding changes'.

Options

Accounts **Git** Advanced

Name
Tidustseng

Email
31063431+Tidustseng@users.noreply.github.com

Save Cancel

使用數據庫管理歷史記錄

- 數據庫 (Repository)
 - 記錄檔案或目錄狀態，並儲存內容的修改歷史記錄。
 - 追蹤內容的狀態和版本。



遠端數據庫和本地端數據庫

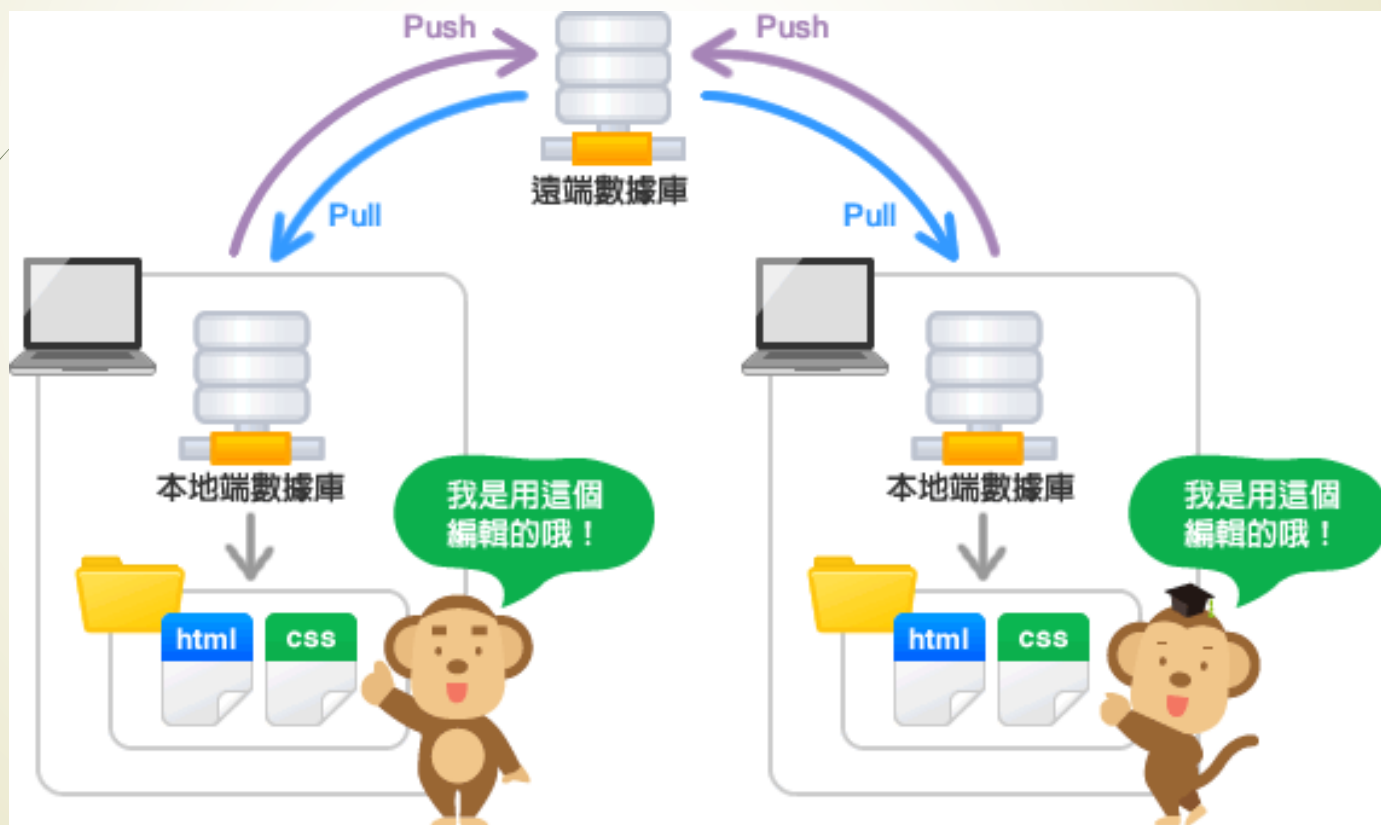
➤ 遠端數據庫

- 配有專用的伺服器，為了讓多人共享而建立的數據庫。
- 公開在本地端數據庫的修改內容或取得其他人修改的內容。

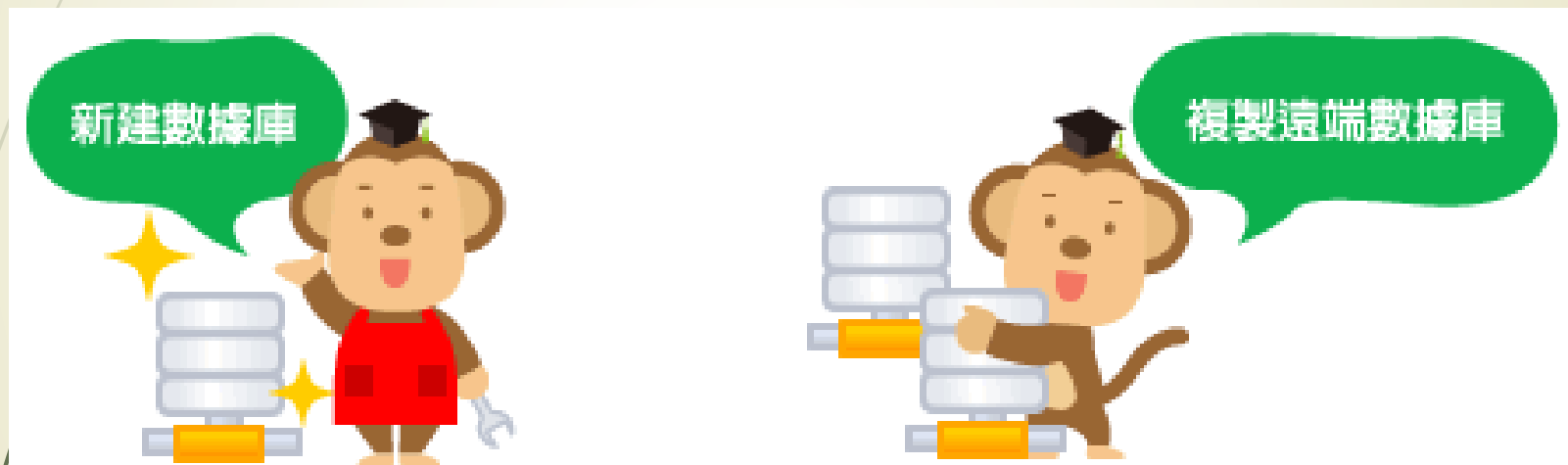
➤ 本地端數據庫

- 為了方便用戶個人使用，在自己的機器上配置的數據庫。
- 使用像是還原更改、跟蹤更改等所有Git版本控制功能。

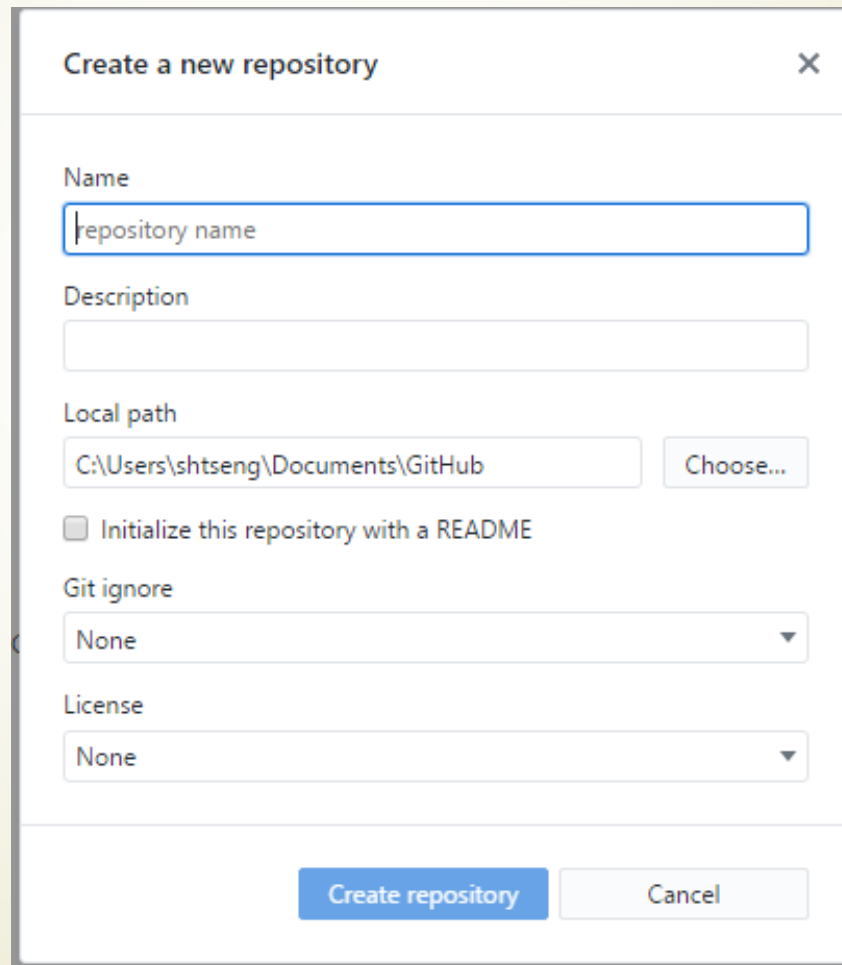
遠端數據庫和本地端數據庫



建立數據庫



Create New Repository



The screenshot shows a 'Create a new repository' dialog box with the following fields and options:

- Name:** A text input field containing 'repository name'.
- Description:** An empty text input field.
- Local path:** A text input field containing 'C:\Users\shtseng\Documents\GitHub' and a 'Choose...' button.
- Initialize this repository with a README:** An unchecked checkbox.
- Git ignore:** A dropdown menu with 'None' selected.
- License:** A dropdown menu with 'None' selected.
- Buttons:** 'Create repository' (blue) and 'Cancel' (light blue) at the bottom right.

記錄修改的提交

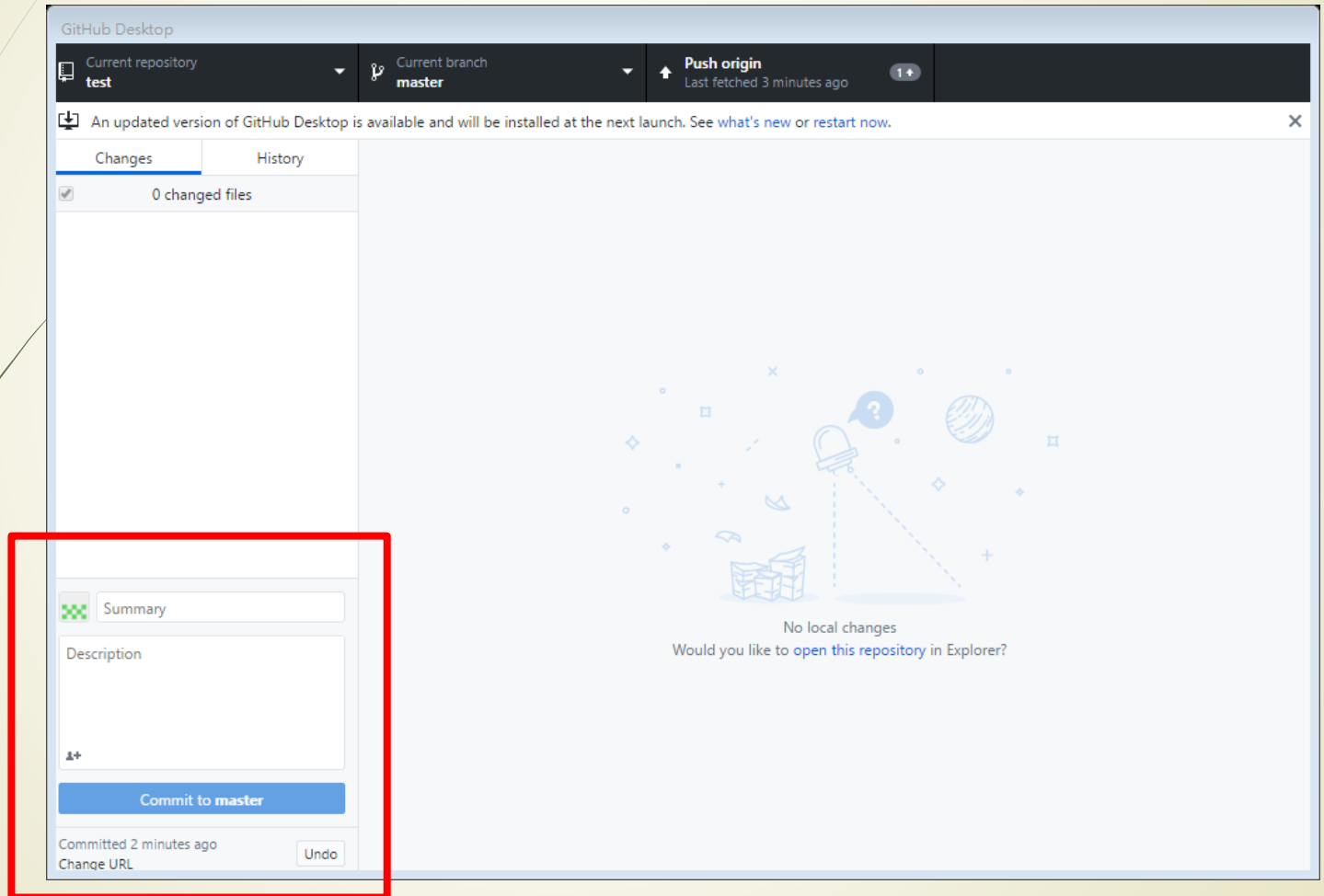
- 提交(Commit)
 - 變更與新增的檔案/目錄儲存到數據庫中
 - 像錯誤修復或功能添加之類不同含義的更改，要盡量分開來提交。
 - Git的標準提交訊息：
 - 第1行：提交時修改內容的摘要
 - 第2行：空行
 - 第3行以後：修改的理由

記錄修改的提交

- 差異紀錄(Revision)
 - 上次提交的狀態與現在狀態
 - 以時間順序排列狀態被儲存到數據庫中的



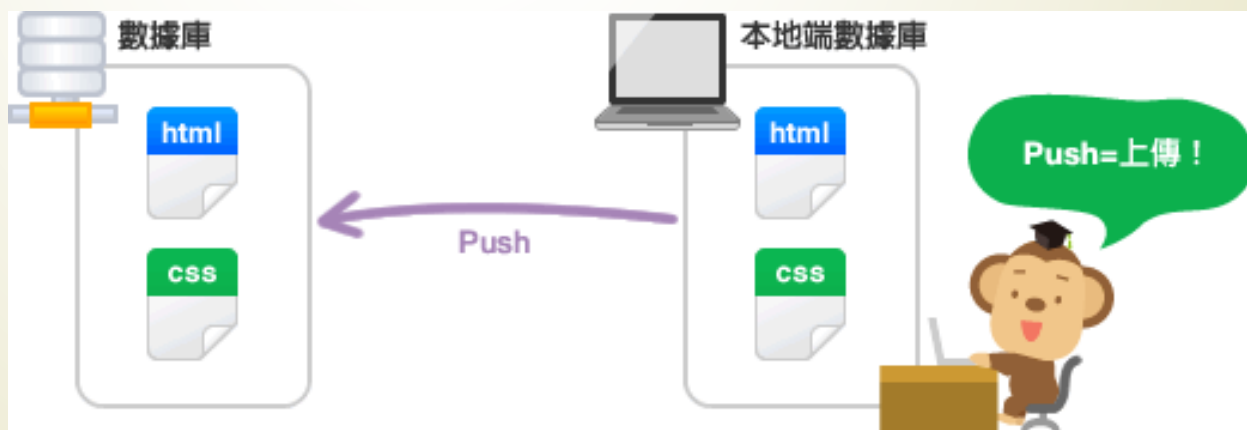
Commit



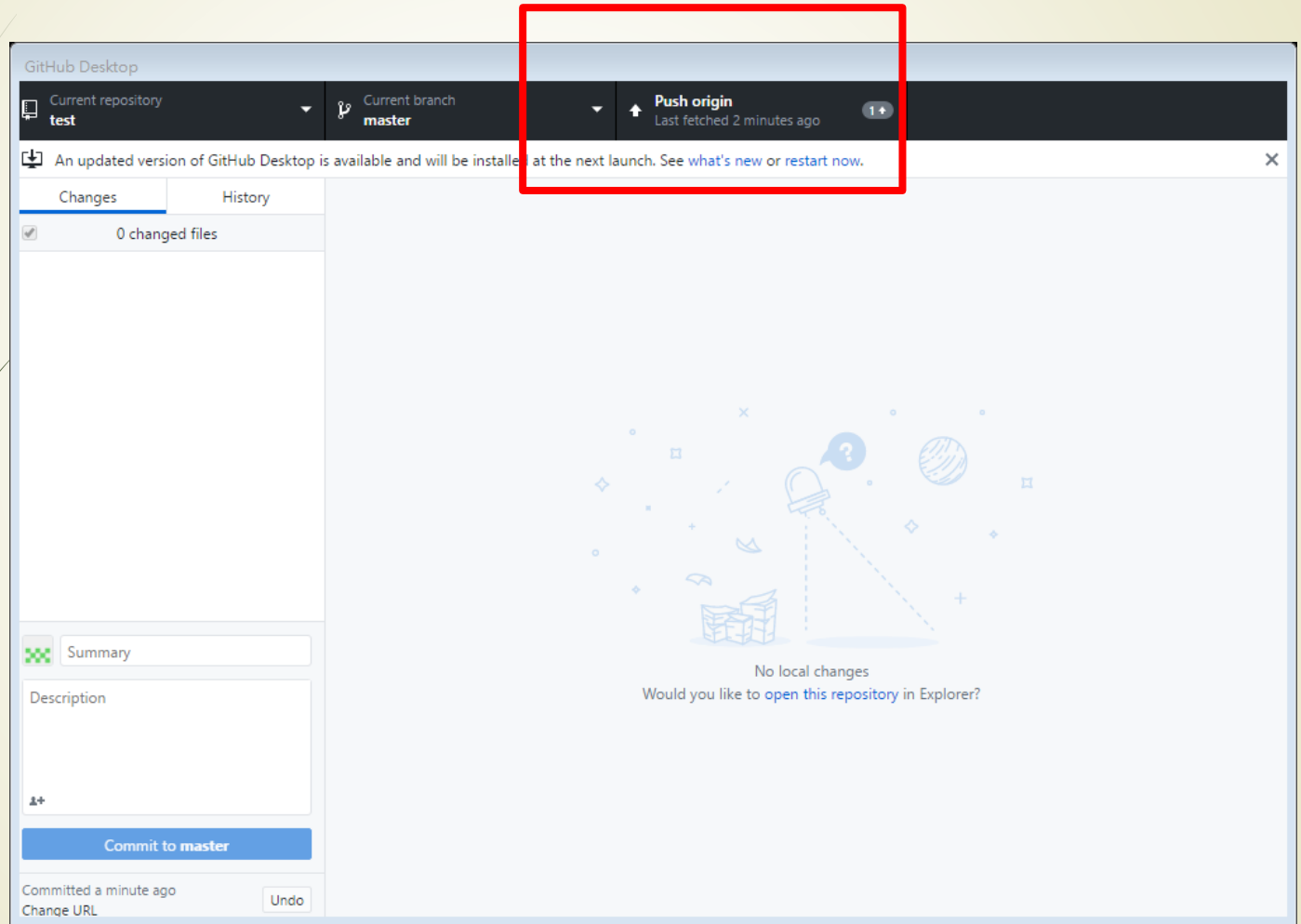
共享數據庫

➡ 推送 (Push)

- ➡ 本地端數據庫的修改歷史共享到遠程數據庫。
- ➡ 遠端數據庫的修改歷史就會和本地端數據庫的修改歷史保持同步。



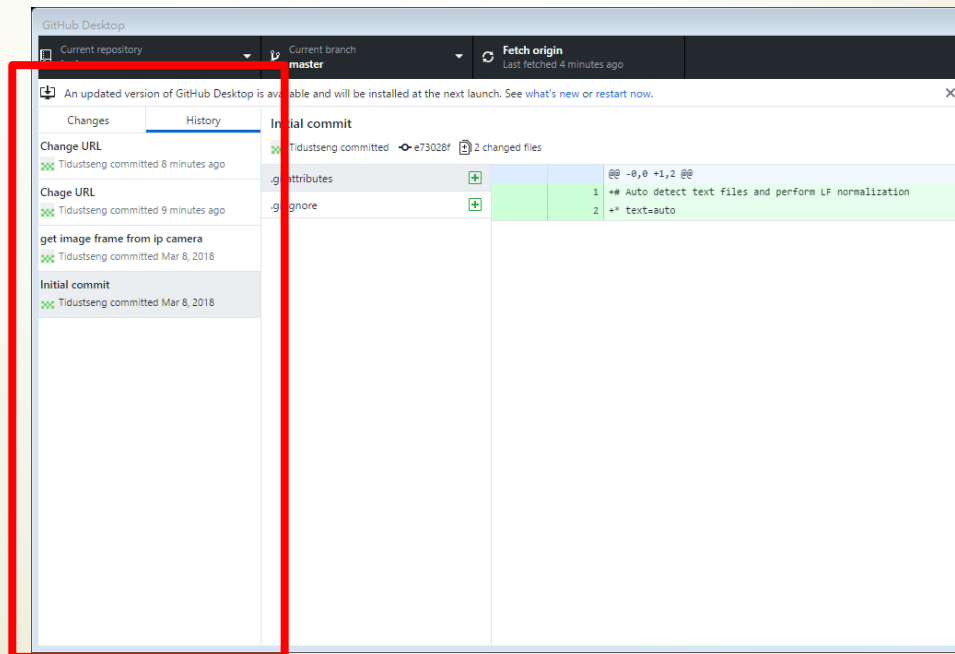
Push



複製遠端數據庫

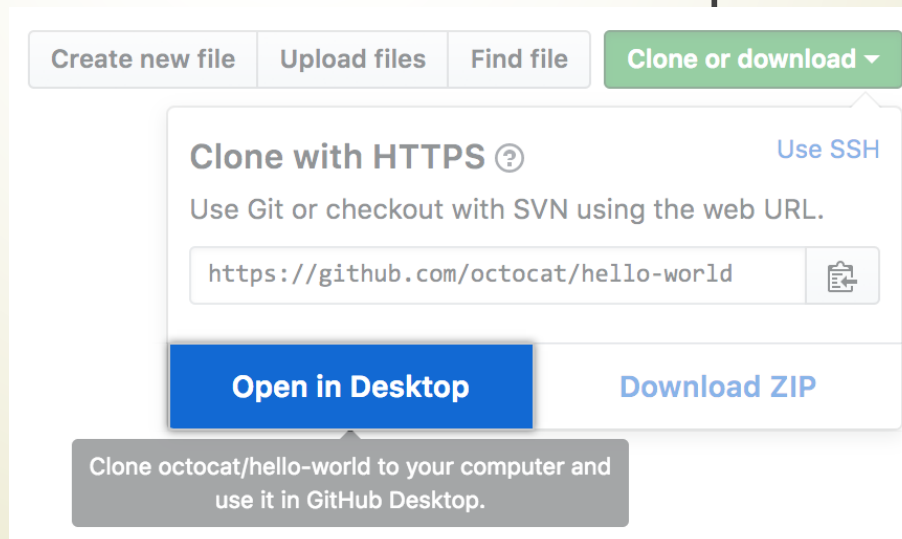
➡ 複製 (Clone)

- ➡ 把遠端數據庫裡的內容全部下載下來，可以在另一台機器的本地數據庫上進行操作。
- ➡ 修改歷史也會被複製到本地數據庫裡。



Cloning a repository

- From GitHub desktop
 - Click “Clone Repository”
 - Click the tab that corresponds to the location of the repository you want to clone or typing URL
 - Click Choose, navigate to a local path, and Clone
- Form GitHub to GitHub Desktop




The screenshot shows the GitHub interface for cloning a repository. At the top, there are four buttons: 'Create new file', 'Upload files', 'Find file', and 'Clone or download'. The 'Clone or download' button is highlighted with a green background and a dropdown arrow. Below it, a dropdown menu is open, showing the 'Clone with HTTPS' option selected. The text 'Use Git or checkout with SVN using the web URL.' is displayed. A text input field contains the URL 'https://github.com/octocat/hello-world'. To the right of the input field is a clipboard icon. Below the input field are two buttons: 'Open in Desktop' (blue) and 'Download ZIP' (light blue). At the bottom, a grey box contains the text: 'Clone octocat/hello-world to your computer and use it in GitHub Desktop.'

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.



Open in Desktop Download ZIP

Clone octocat/hello-world to your computer and use it in GitHub Desktop.

Cloning a repository

- From GitHub desktop for partner
 - Share your repository

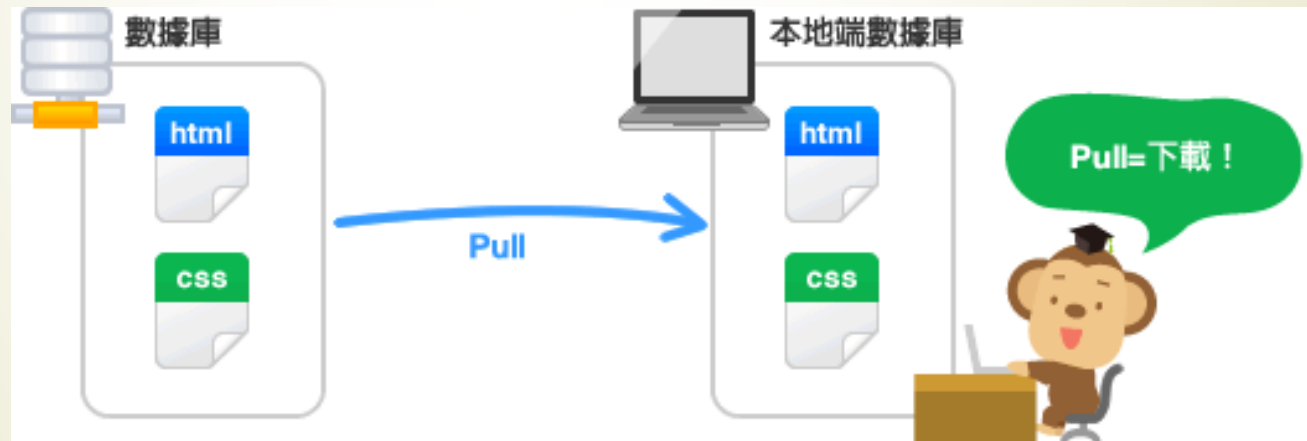
The image shows a screenshot of the GitHub web interface and the GitHub Desktop 'Clone a repository' dialog. The web interface shows the 'Settings' tab for a repository, with a sidebar on the left containing links for Options, Collaborators, Branches, Webhooks, Integrations & services, and Deploy keys. The main content area is titled 'Collaborators' and states 'This repository doesn't have any collaborators yet. Use the form below to add a collaborator.' It includes a search bar with the placeholder text 'Search by username, full name or email address' and a note: '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.' The 'Clone a repository' dialog is open, showing the 'GitHub.com' tab. It has a 'Filter' input field and a list of 'Your repositories' including 'SarahChiu/Pepper-Social-Skills' and 'Tidustseng/test'. The 'Local path' section shows the path 'C:\Users\shitseng\Documents\GitHub' with a 'Choose...' button. At the bottom are 'Clone' and 'Cancel' buttons.

- Clone from Github.com

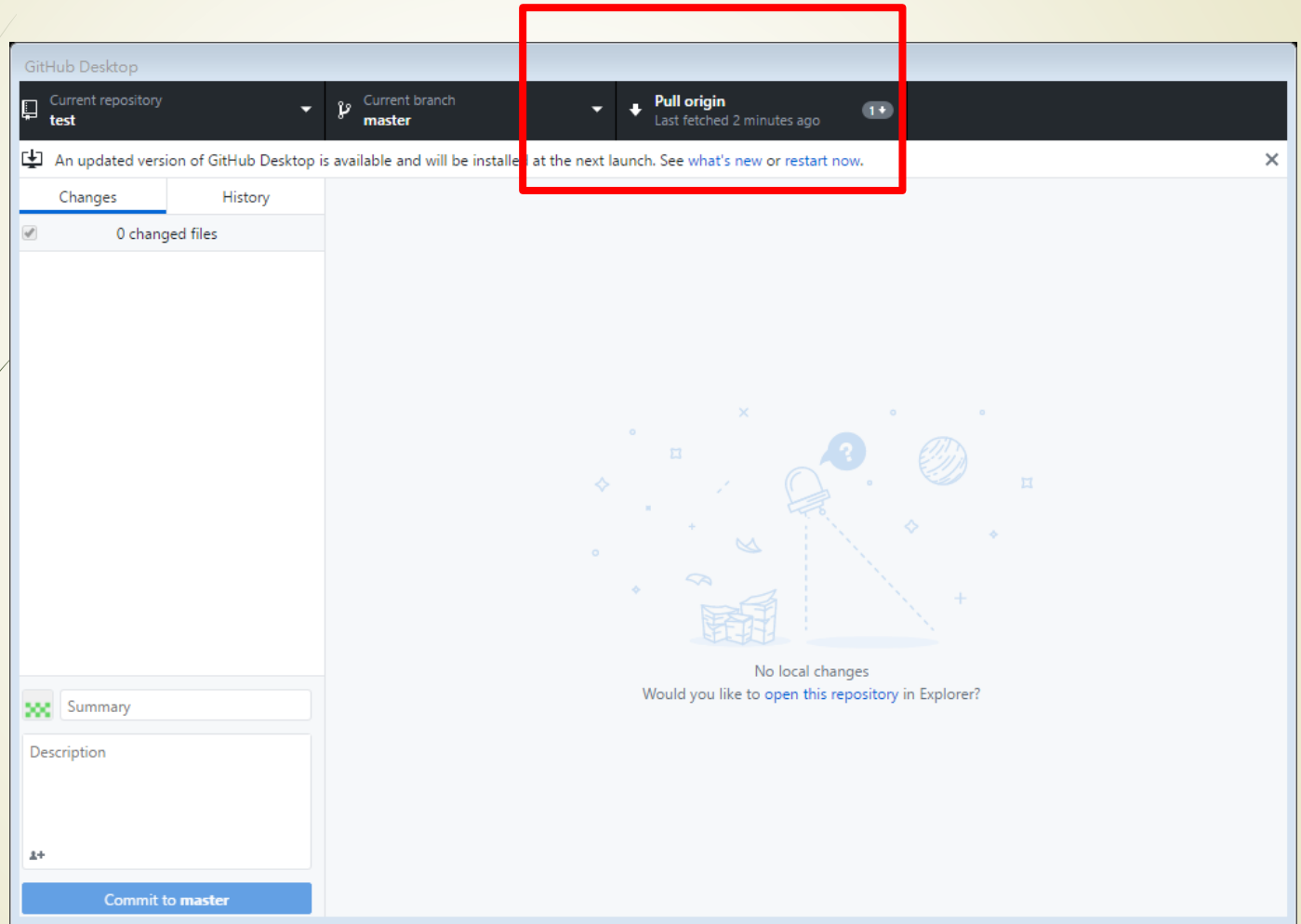
多人同時作業

➡ 拉取(Pull)

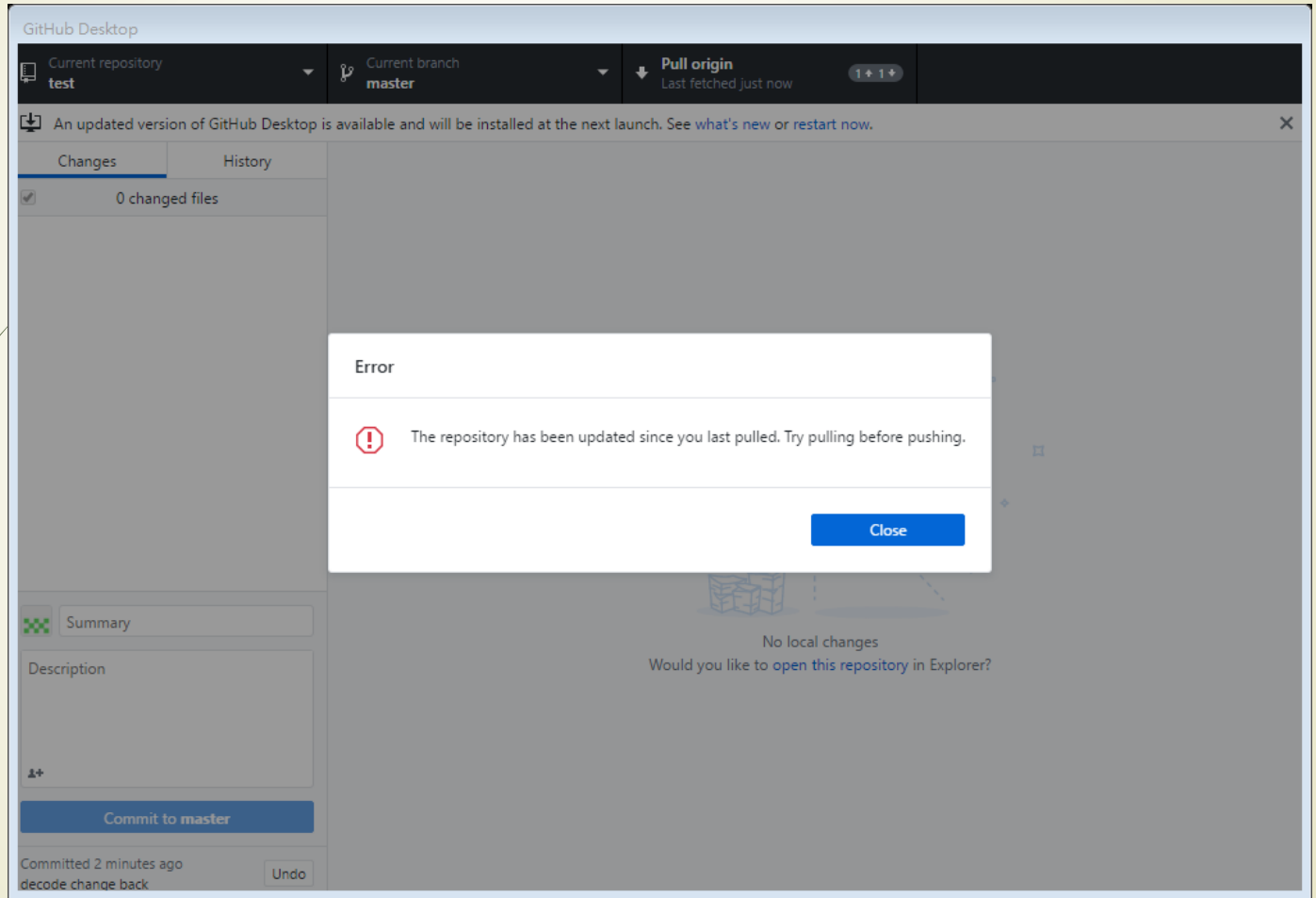
- ➡ 同步其他人push的修改內容到自己的本地端數據庫。



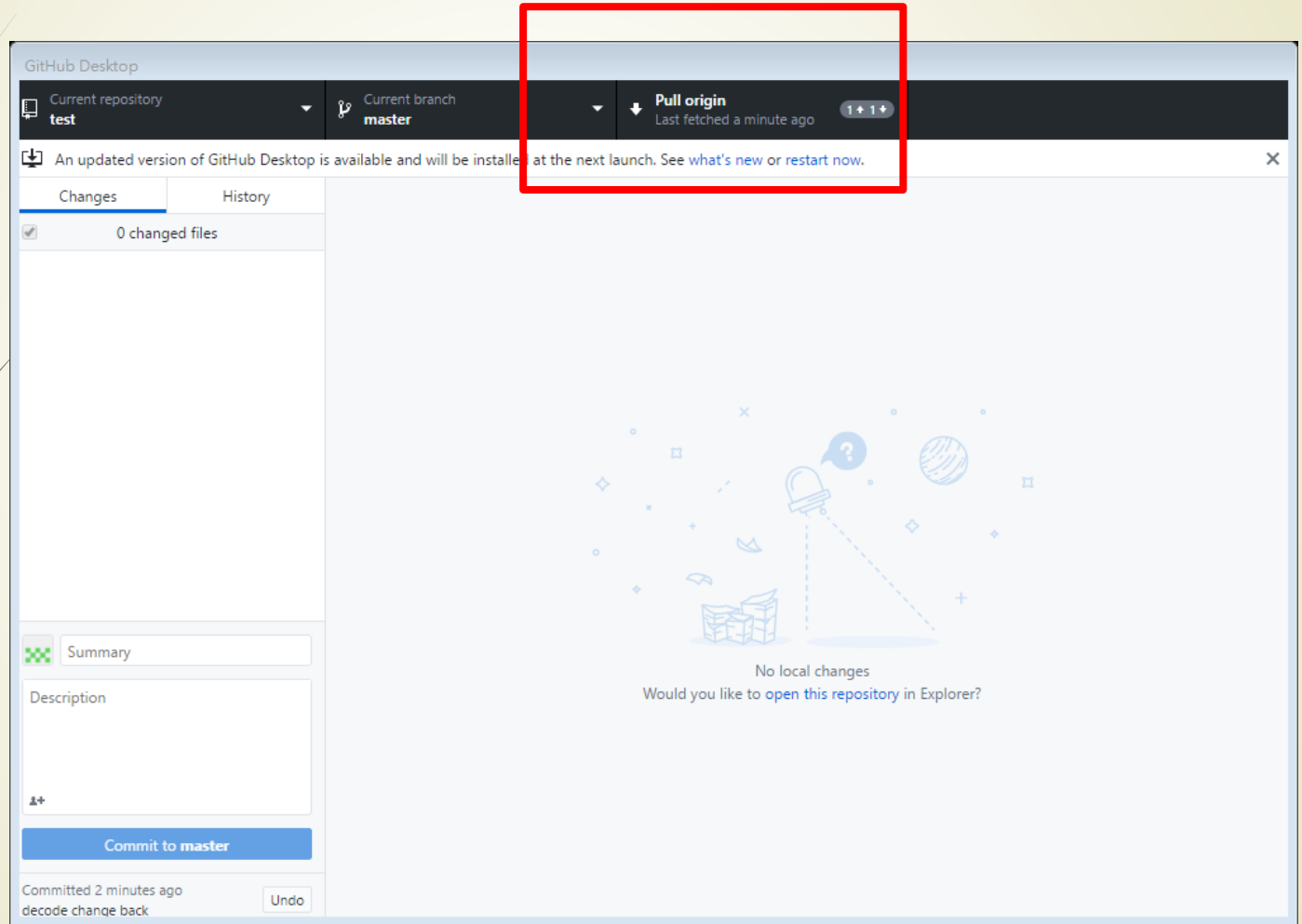
Pull



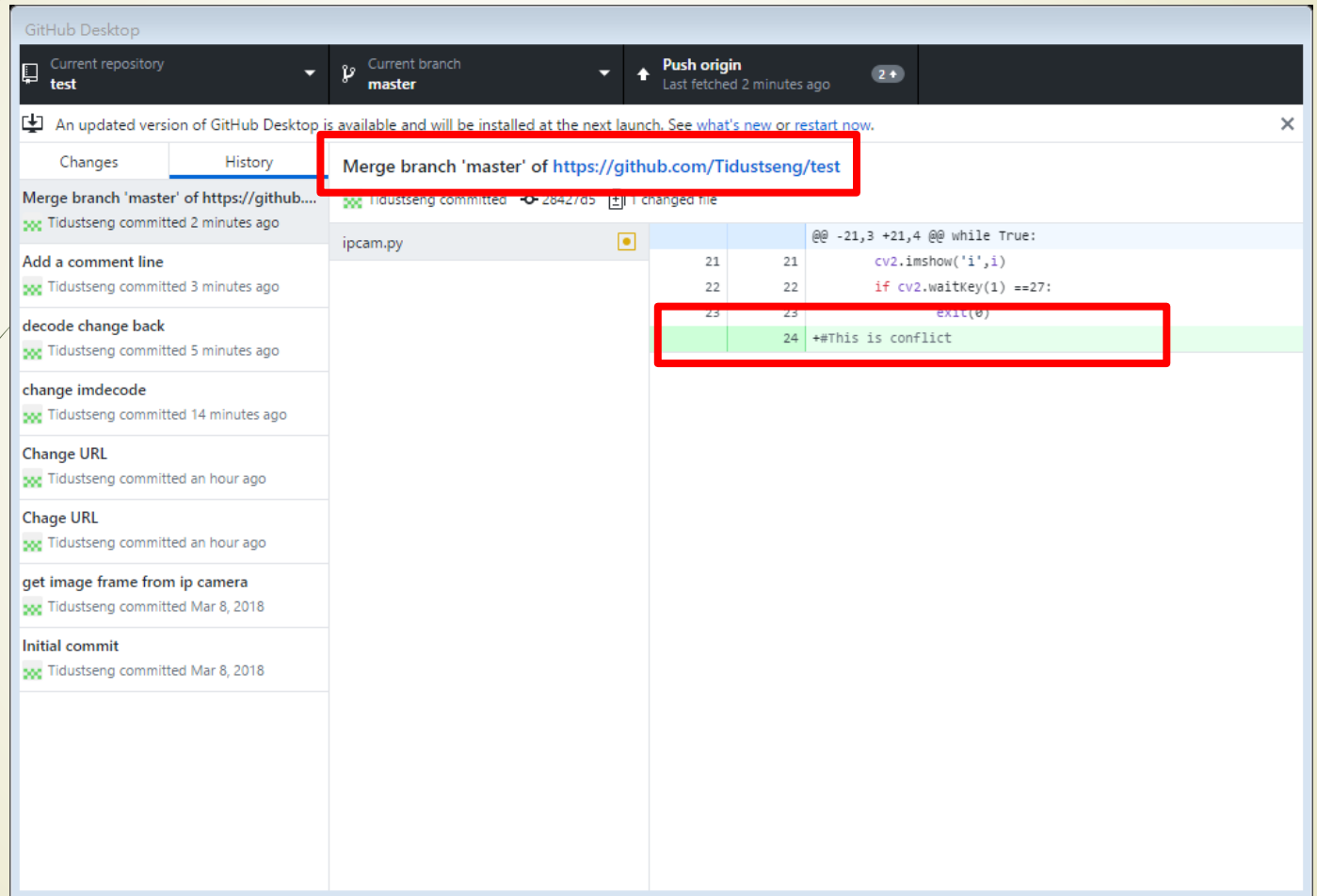
Conflict



Conflict

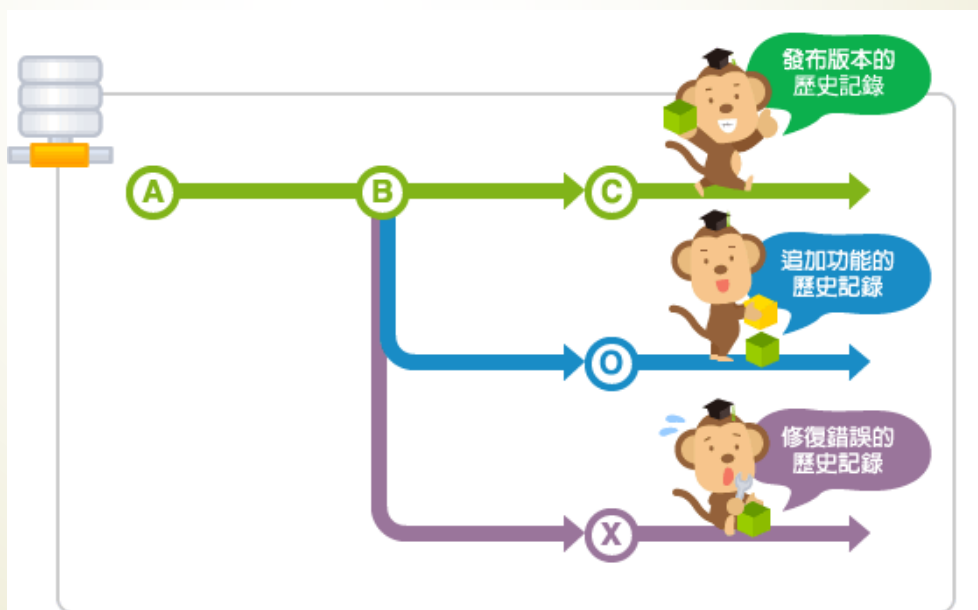


Conflict



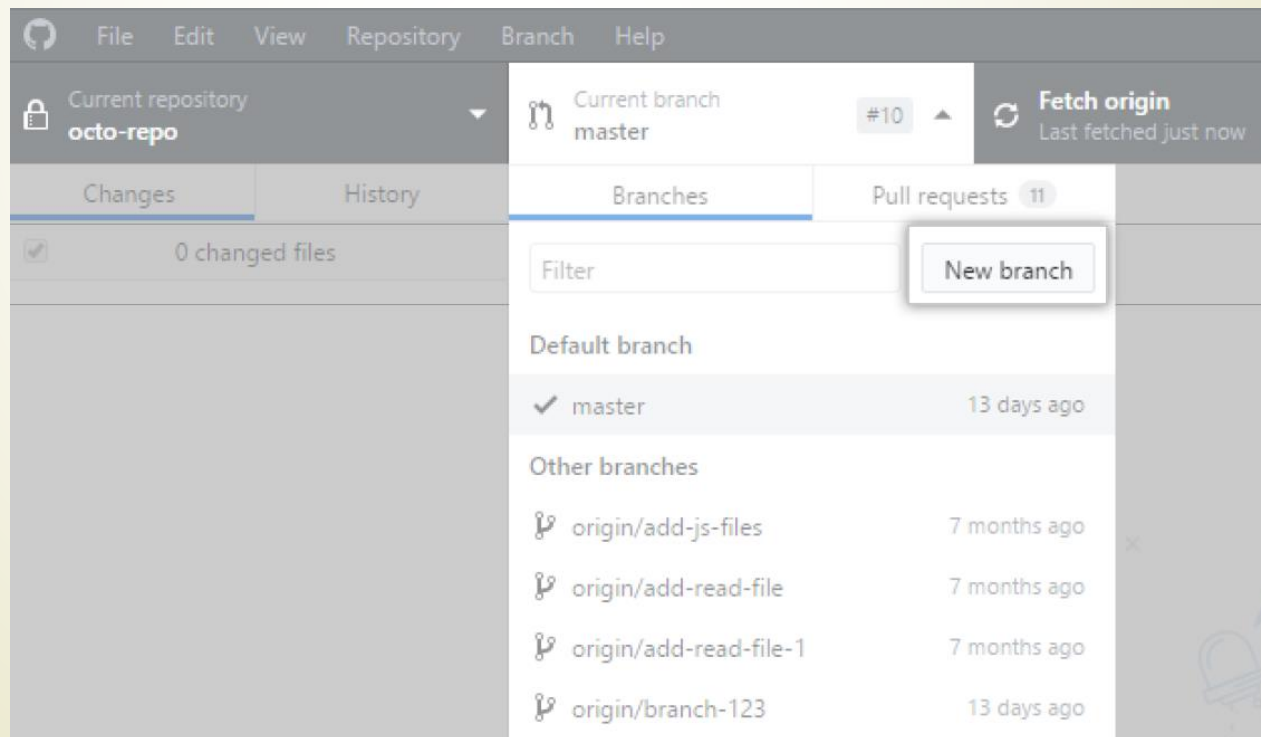
什麼是分支？

- 為了將修改記錄的整體流程分開儲存，讓分開的分支不受其他分支的影響
- 同一個數據庫裡可以同時進行多個不同的修改。




Creating a branch


- Click **New Branch** -> type Name -> Click **Create Branch**



Committing and Reviewing Changes in Branch

➤ Making changes

The red  icon indicates removed files.

The yellow  icon indicates modified files.

The green  icon indicates added files.

➤ Write a commit message and push changes

- Summary field: typing a short, meaningful commit message.
- Description field: adding more information about the change

➤ Commit and Push

Syncing Branch

- Click **Fetch origin** to update your branch.
- If there are commits on the remote branch, you can pull these by clicking **Pull origin**.


Creating a Pull Request

- From **Branch** menu on GitHub desktop, clicking **Create pull request**
- On GitHub

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](#).


  ✓ Able to merge. These branches can be automatically merged.



Write Preview AA ▾ B i “ < > ↺ ⋮ ≡ ≡ ↶ @ 📌

Let's add a contributing file, so we can work better, together!

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

 Styling with Markdown is supported

[Create pull request](#)