Curso de Introducción a Git y GitHub

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Programa

DÍA 1

- Importancia del versionado y documentación de software [teoría]
- Qué es Git y la plataforma GitHub [teoría]
- Primeros pasos en Git y GitHub, [práctica]
  - Instalación de Git
  - Configuración de Git, archivos básicos

DÍA 2

- Iniciación a Git [práctica]
  - Crear repositorios
  - Control de cambios y versionado
  - Restaurar versiones previas ("checkout" y "restore")
  - Ramificaciones ("branches") del código
  - Actualizar el repositorio local y remoto

DIA 3

- Fusionado y resolución de conflictos [práctica]
  - Fusionado de ramificaciones
  - Resolución de conflictos
- Código colaborativo en GitHub [práctica]
  - Creación de copias ("forks")
  - Sugerencias de cambios ("Pull requests")

Qué es Git?

GIT - the stupid **content tracker**

- "git" can mean anything, depending on your mood.
  - random three-letter combination that is pronounceable, and not actually used by any common UNIX command. The fact that it is a mispronounciation of "get" may or may not be relevant.
  - stupid. contemptible and despicable. simple. Take your pick from the dictionary of slang.
  - “Global Information Tracker": you're in a good mood, and it actually works for you. Angels sing, and a light suddenly fills the room.
  - "Goddamn Idiotic Truckload of sh*t": when it breaks

https://github.com/git/git/blob/master/README.md

Qué es Git

- 'git' is British slang for "pig headed, think they are always correct, argumentative".
- Linus Torvalds: "I'm an egotistical bastard, and I name all my projects after myself. First 'Linux', now 'Git'".

https://git.wiki.kernel.org/index.php/GitFaq#Why_the_.27Git.27_name.3F

Por qué Git

- Sistema de versionado y control de contenidos
  - Código
  - Datos
  - Texto
- Características
  - Rápido
  - **Diseño sencillo**
  - Desarrollo no lineal - en ramas paralelas
  - **Totalmente distribuido**
  - Capaz de manejar grandes proyectos eficientemente (núcleo “kernel” de Linux)

Por qué Git

- Sistema de versionado y control de contenidos
  - Código
  - Datos

FUNDAMENTAL DOCUMENTAR CÓDIGO Y SUS CAMBIOS

  - **Diseño sencillo**
  - Desarrollo no lineal - en ramas paralelas
  - **Totalmente distribuido**
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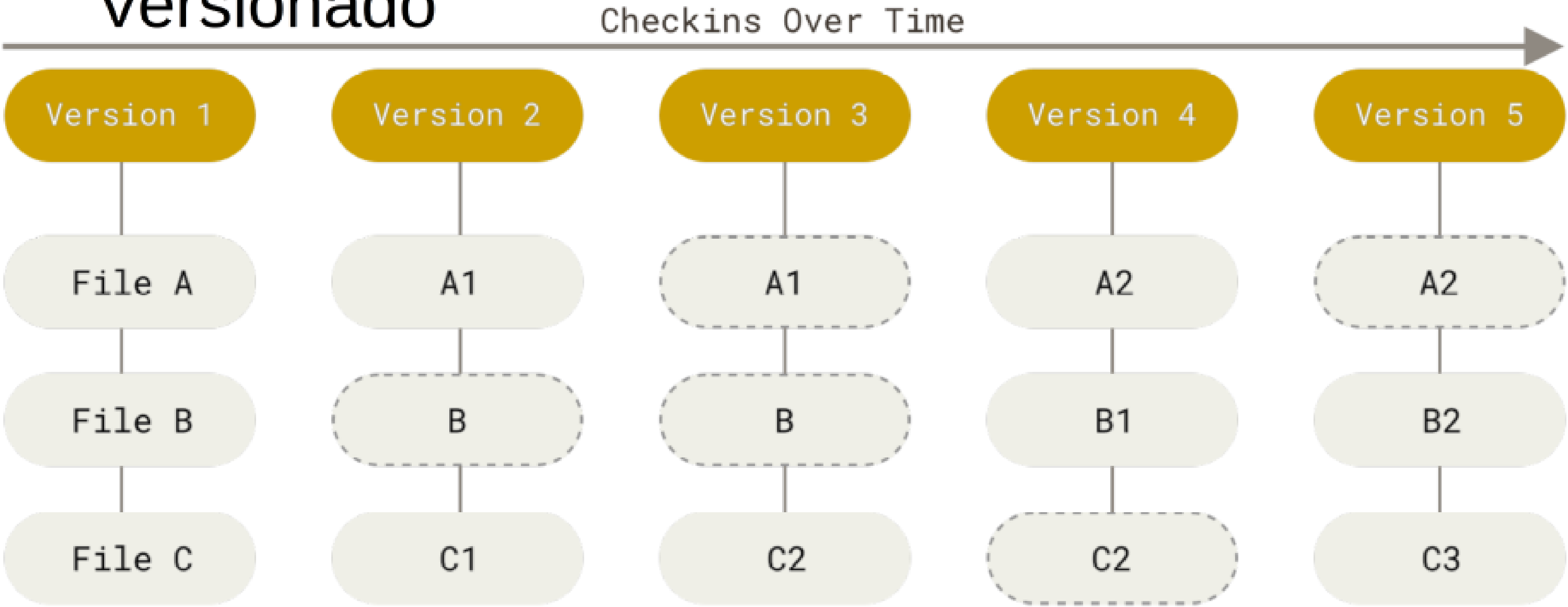
Cómo funciona Git

Versionado



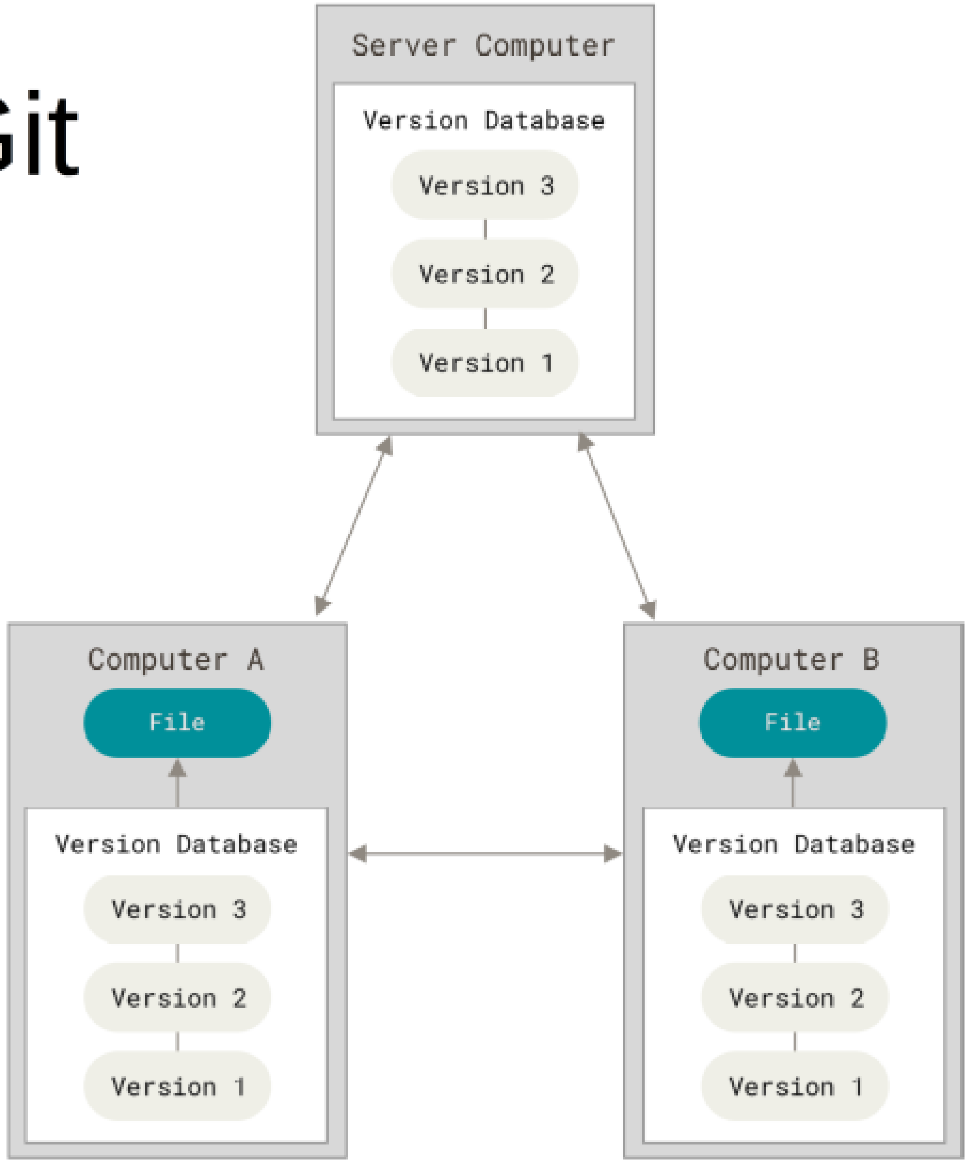
Chacon & Straub (2021) Pro Git

Cómo funciona Git

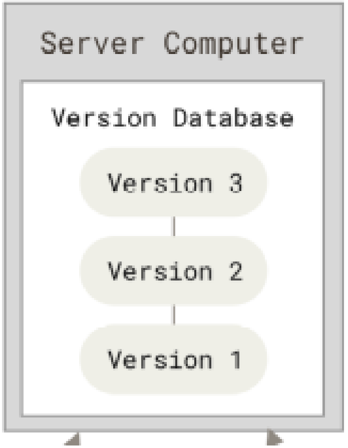
Distribución descentralizada

- Cada repositorio local es una réplica / copia de seguridad
- Si el servidor falla cualquier otra copia local puede usarse como reemplazo

Chacon & Straub (2021) Pro Git



Qué es GitHub



Chacon & Straub (2021) Pro Git

- Plataforma online de repositorios Git
  - Hace la función de servidor remoto del código
- Propiedad de Microsoft
  - Con ánimo de lucro
- Ayuda:
  - Trabajo colaborativo
  - Diseminación de código abierto
  - Herramientas para la difusión

¡NI CASO!

MOST POPULAR

Free	Team	Enterprise
The basics for individuals and organizations	Advanced collaboration for individuals and organizations	Security, compliance, and flexible deployment
Unlimited public/private repositories	Everything included in Free, plus...	Everything included in Team, plus...
2,000 automation minutes/month Free for public repositories	Protected branches	Automatic security and version updates
500MB of Packages storage Free for public repositories	Multiple reviewers in pull requests	SAML single sign-on
Community support	Draft pull requests	Advanced auditing
	Code owners	GitHub Connect
	Required reviewers	50,000 automation minutes/month Free for public repositories
	Pages and Wikis	50GB of Packages storage Free for public repositories
	3,000 automation minutes/month Free for public repositories	EXCLUSIVE ADD-ONS
	2GB of Packages storage Free for public repositories	Token, secret, and code scanning
	Web-based support	Premium support
$0 per month	$4 per user/month	$21 per user/month
Join for free	Continue with Team	Contact Sales / Start a free trial

Git y GitHub

- Puedes usar sin problema Git sin necesidad de GitHub
- Si usas GitHub es recomendable conocer Git
- Alternativas a GitHub
  - GitLab, Bitbucket
  - … servidor propio

Add-ons de GitHub

- Generación de DOIs
  - https://zenodo.org/
  - https://guides.github.com/activities/citable-code/
- Documentación de software online
  - https://readthedocs.org/
  - https://github.com/readthedocs/readthedocs.org
- Servicio de páginas web
  - https://pages.github.com/

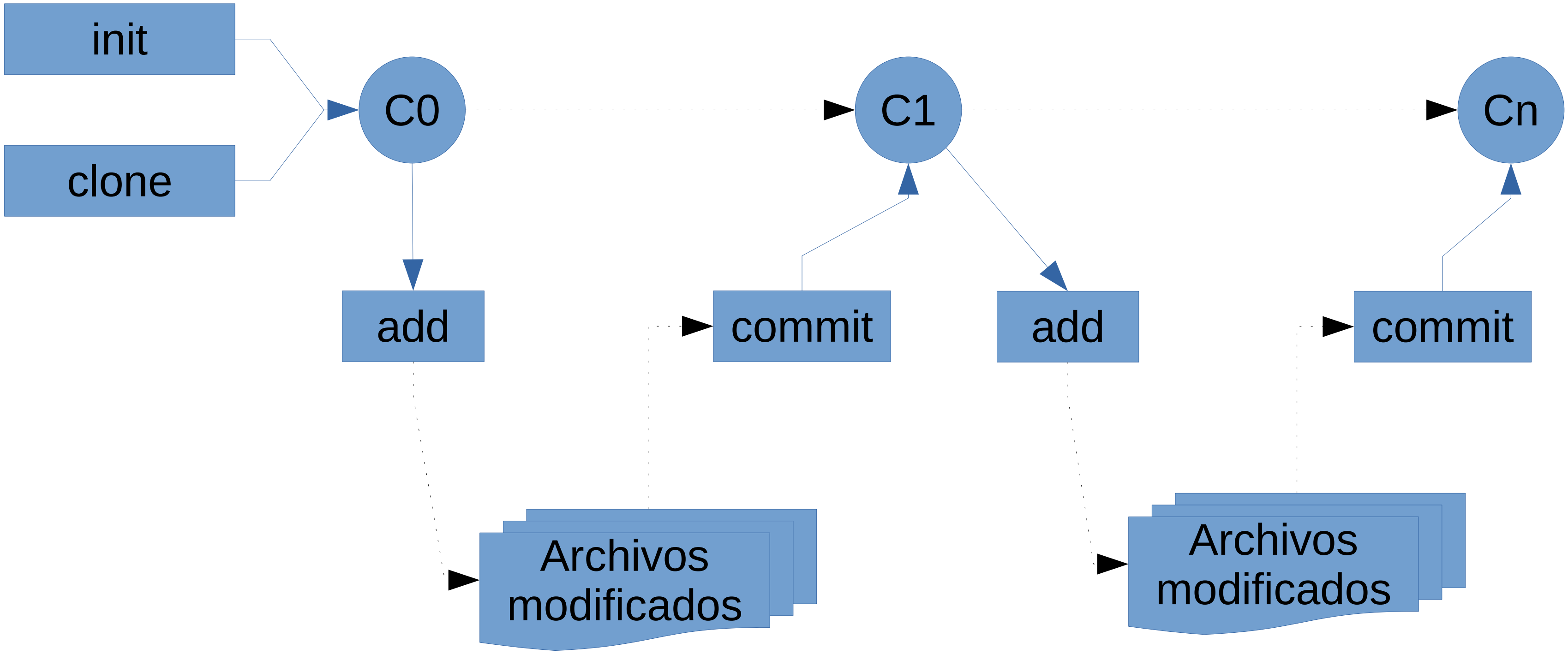
Mis “Mandamientos” de Git

- Adaptado de PEP 20 -- The Zen of Python
  - Beautiful is better than ugly.
  - Explicit is better than implicit.
  - Simple is better than complex.
  - Complex is better than complicated.
  - Flat is better than nested.
  - Readability counts.
  - Special cases aren't special enough to break the rules.
  - Errors should never pass silently.
  - Now is better than never.
  - Although never is often better than *right* now.

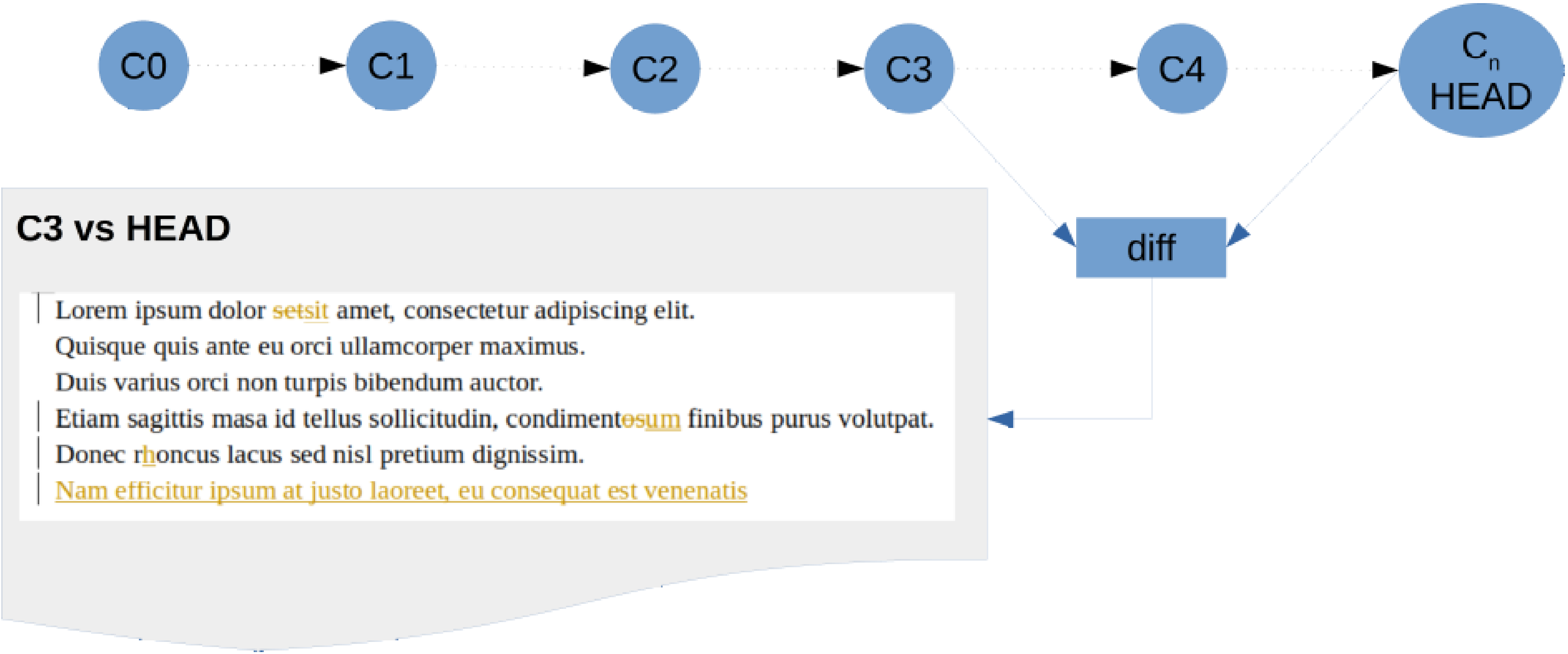
https://www.python.org/dev/peps/pep-0020/

https://vimeo.com/329001211

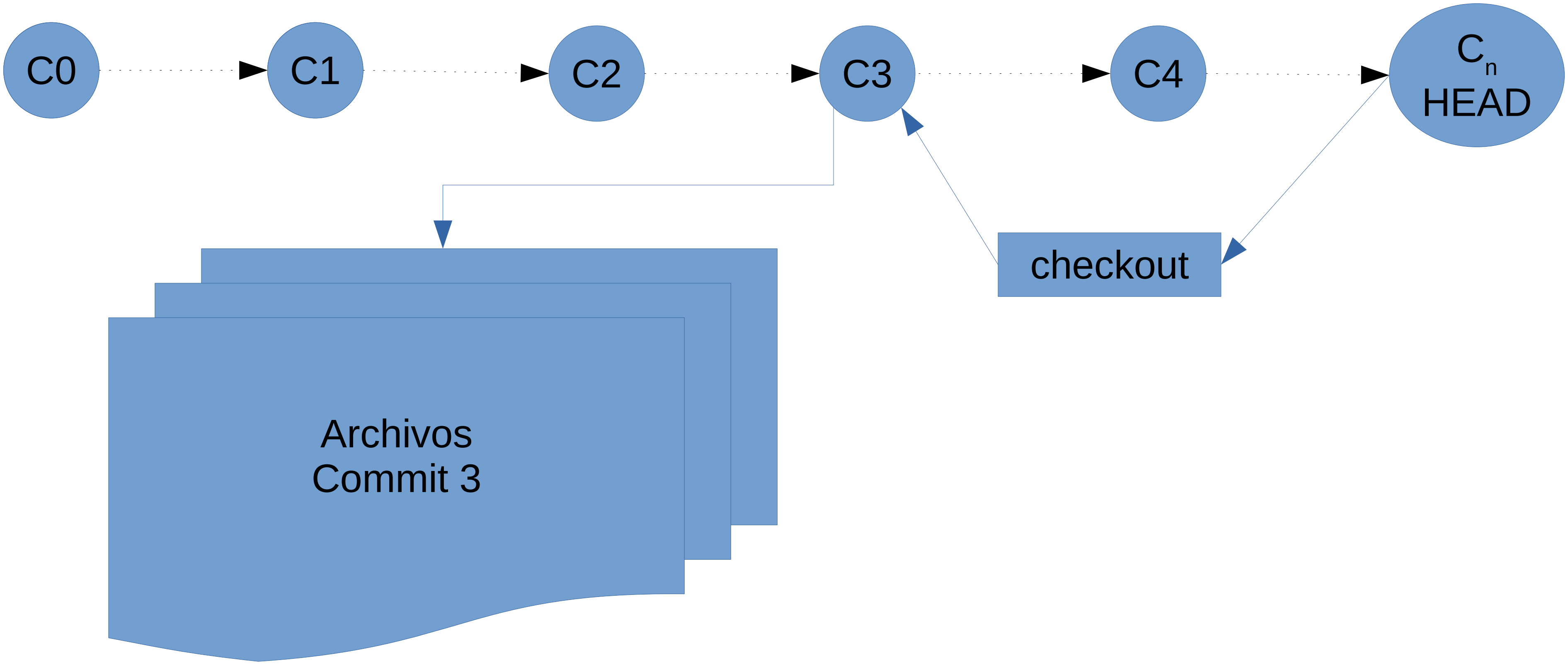
Primeros Pasos: versionado



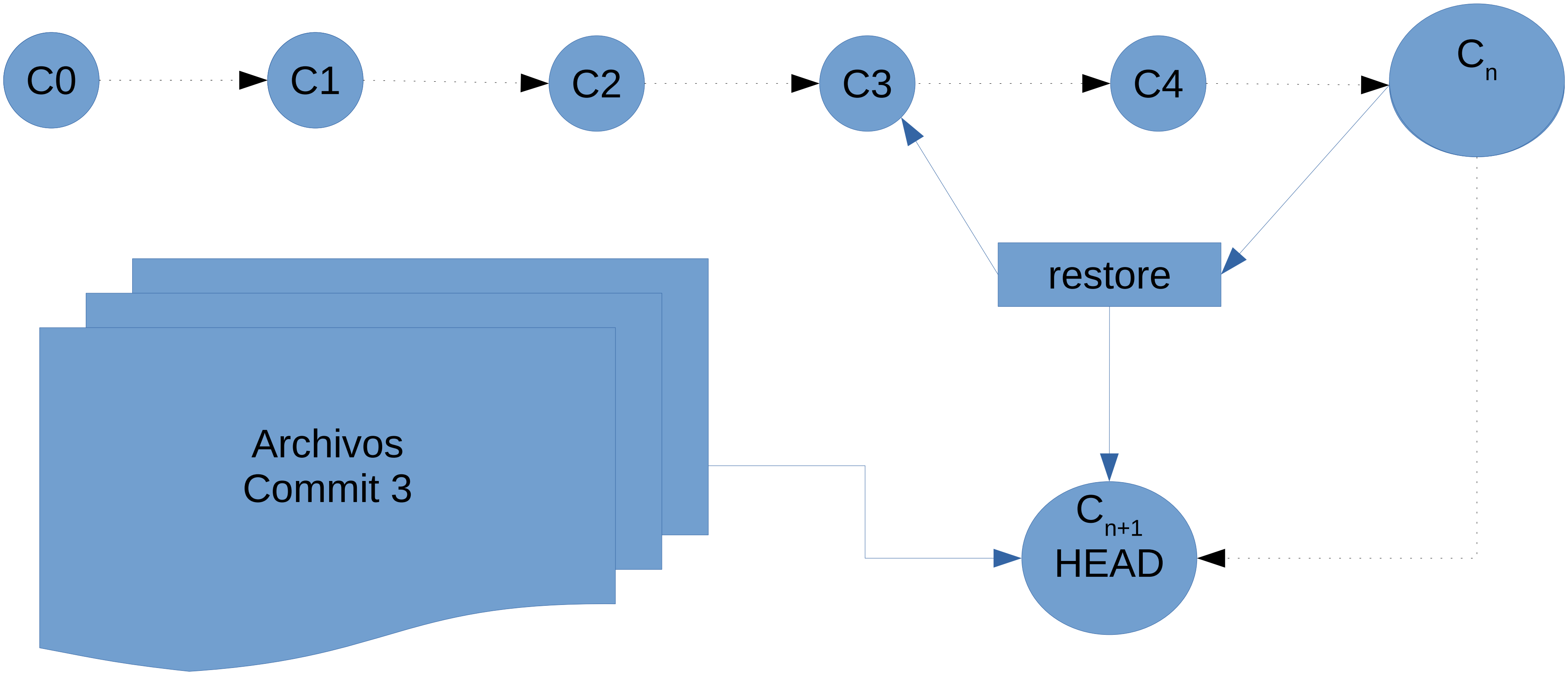
Primeros Pasos: control de cambios



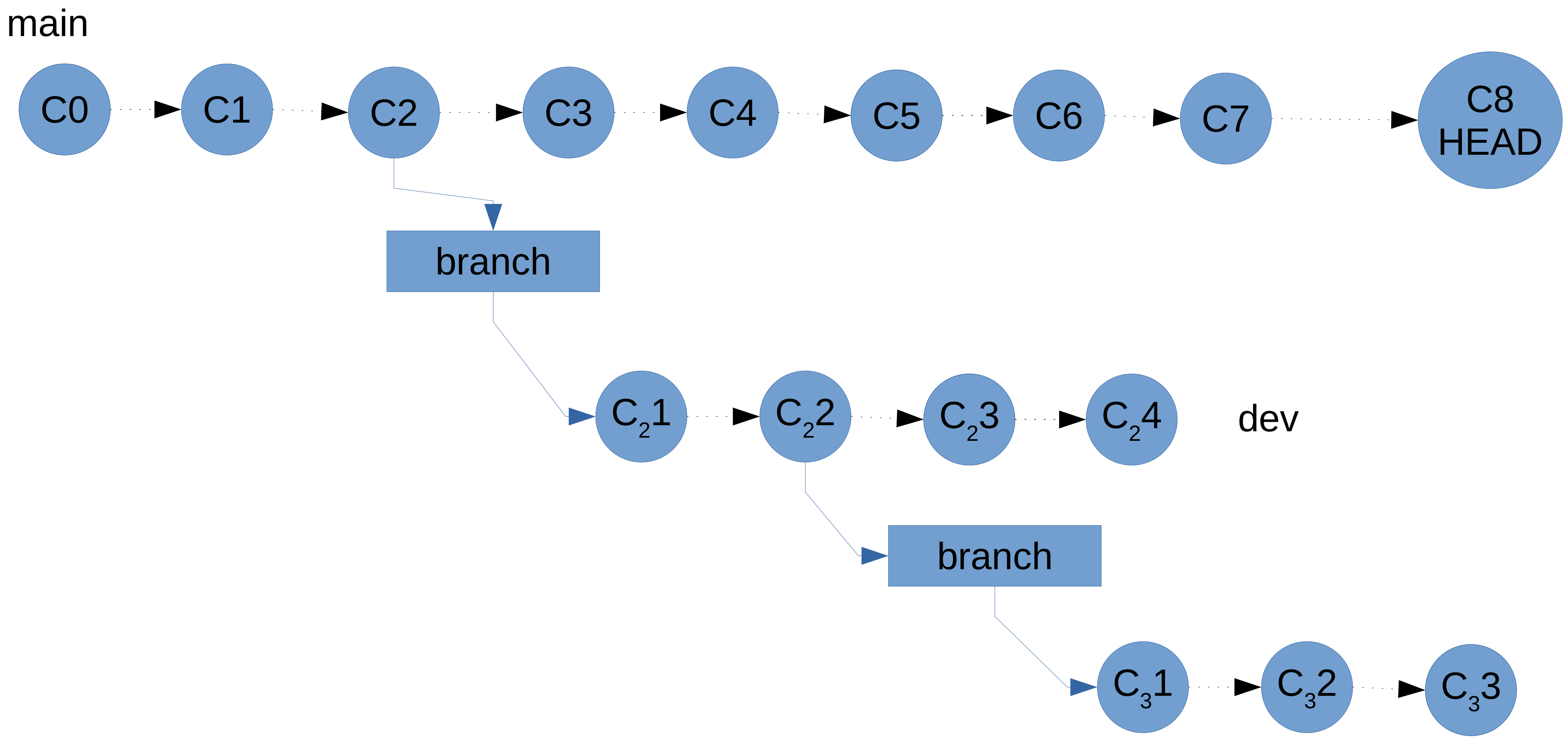
Primeros Pasos: restaurado



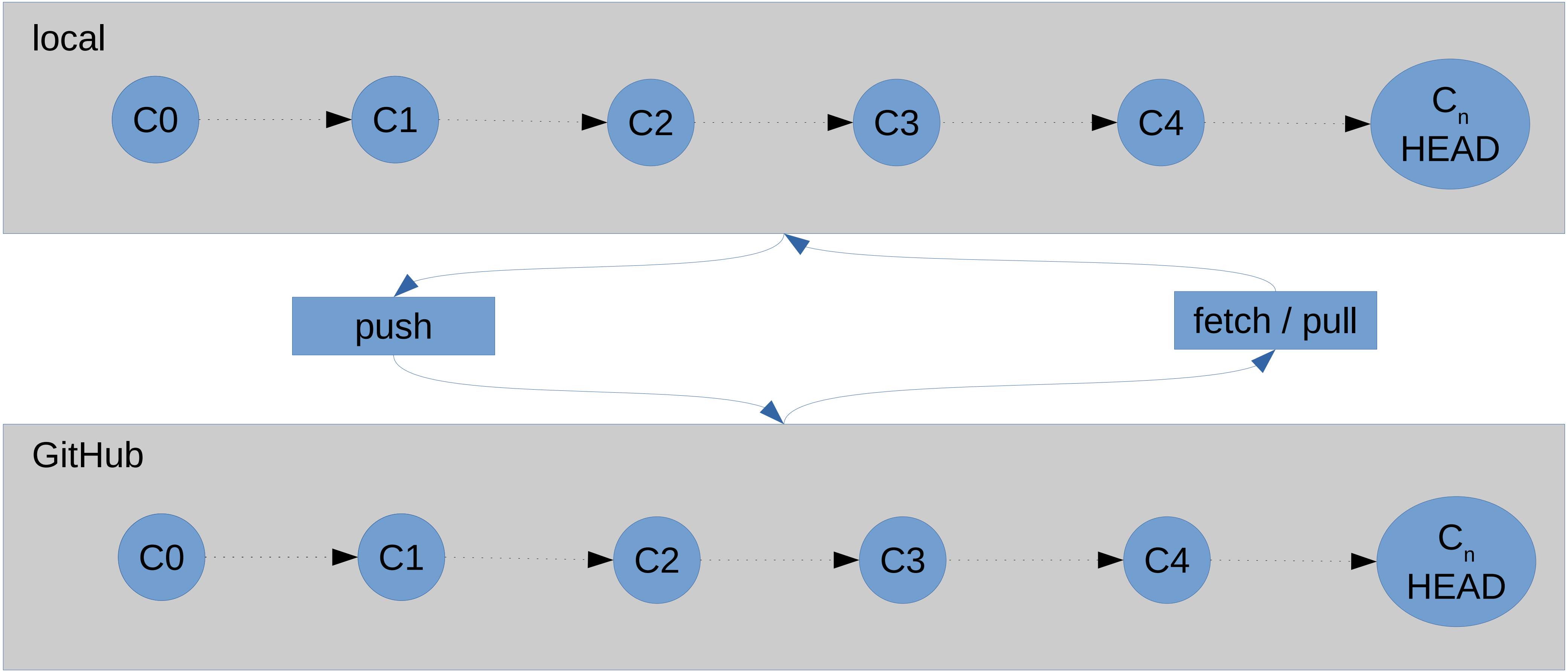
Primeros Pasos: restaurado



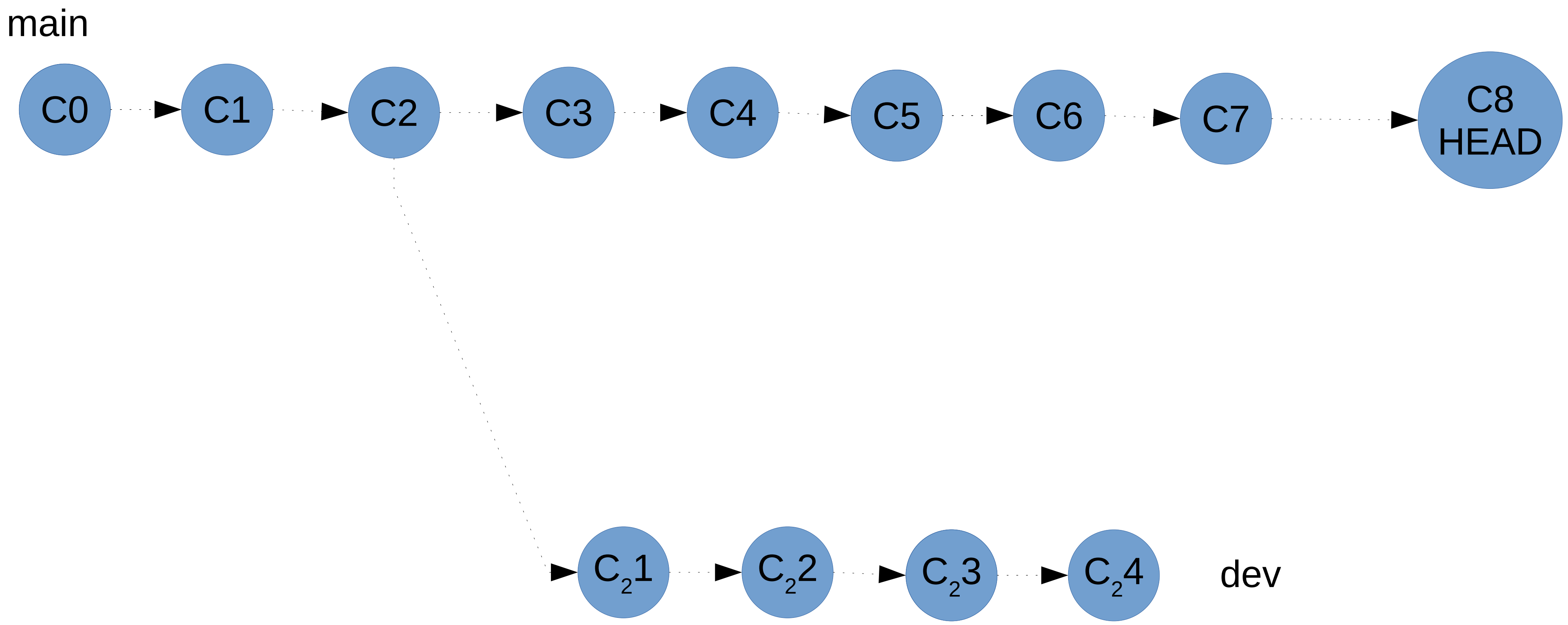
Primeros Pasos: ramas



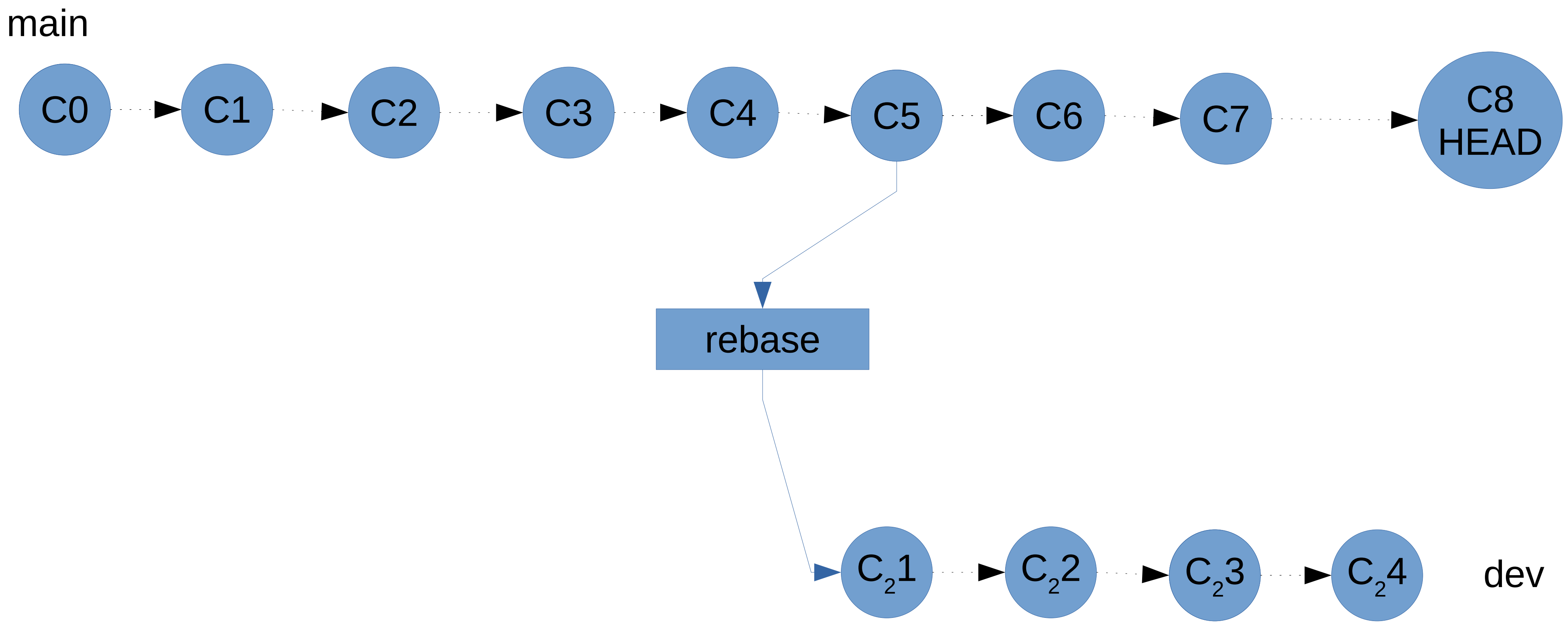
Primeros Pasos: repositorio local y remoto



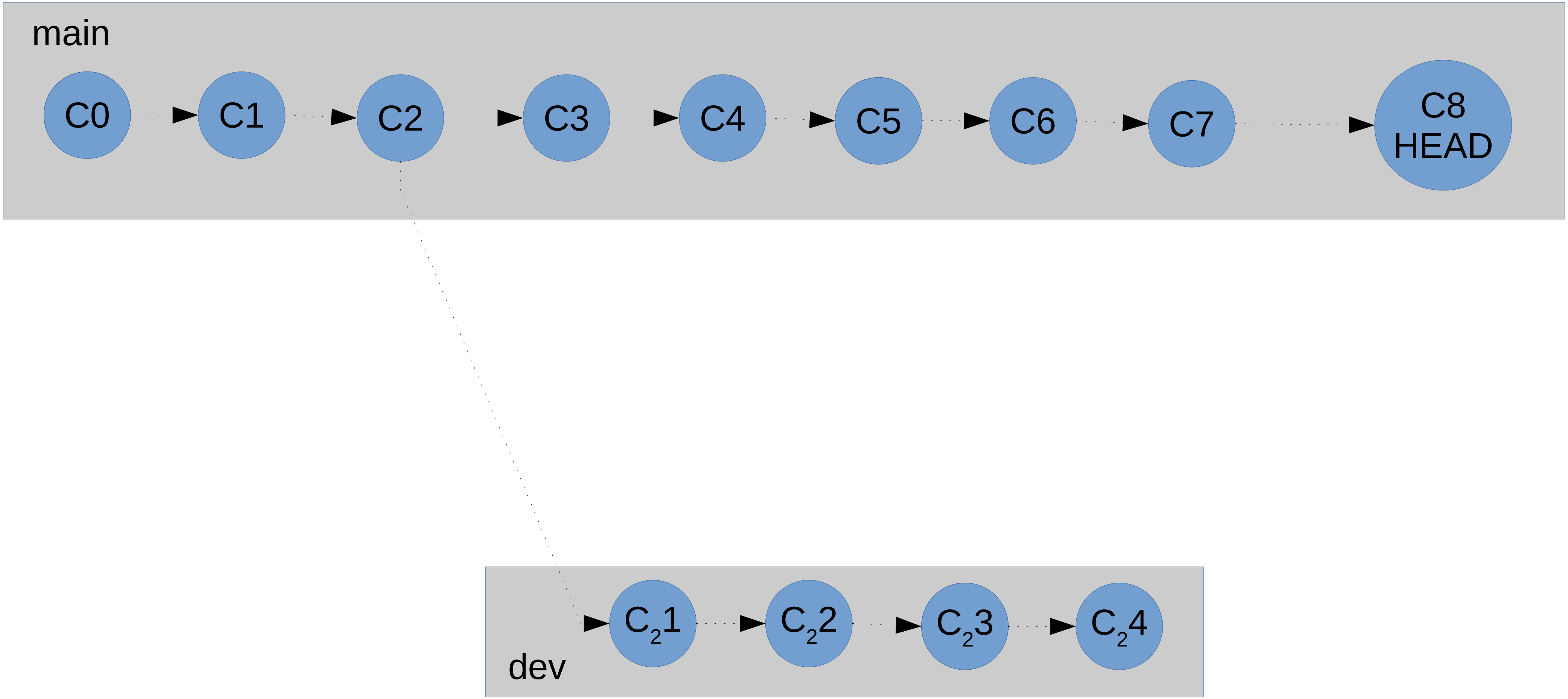
Fusionado: rebase



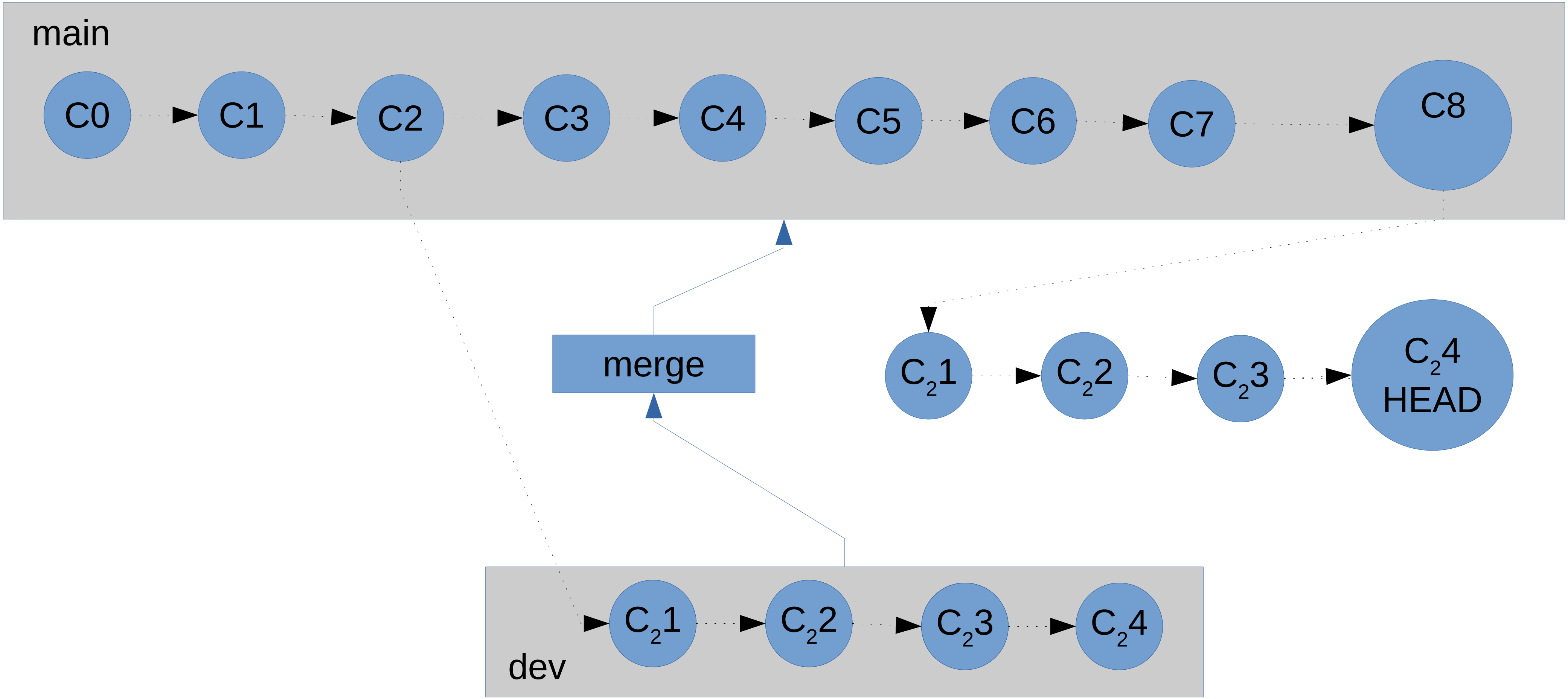
Fusionado: rebase



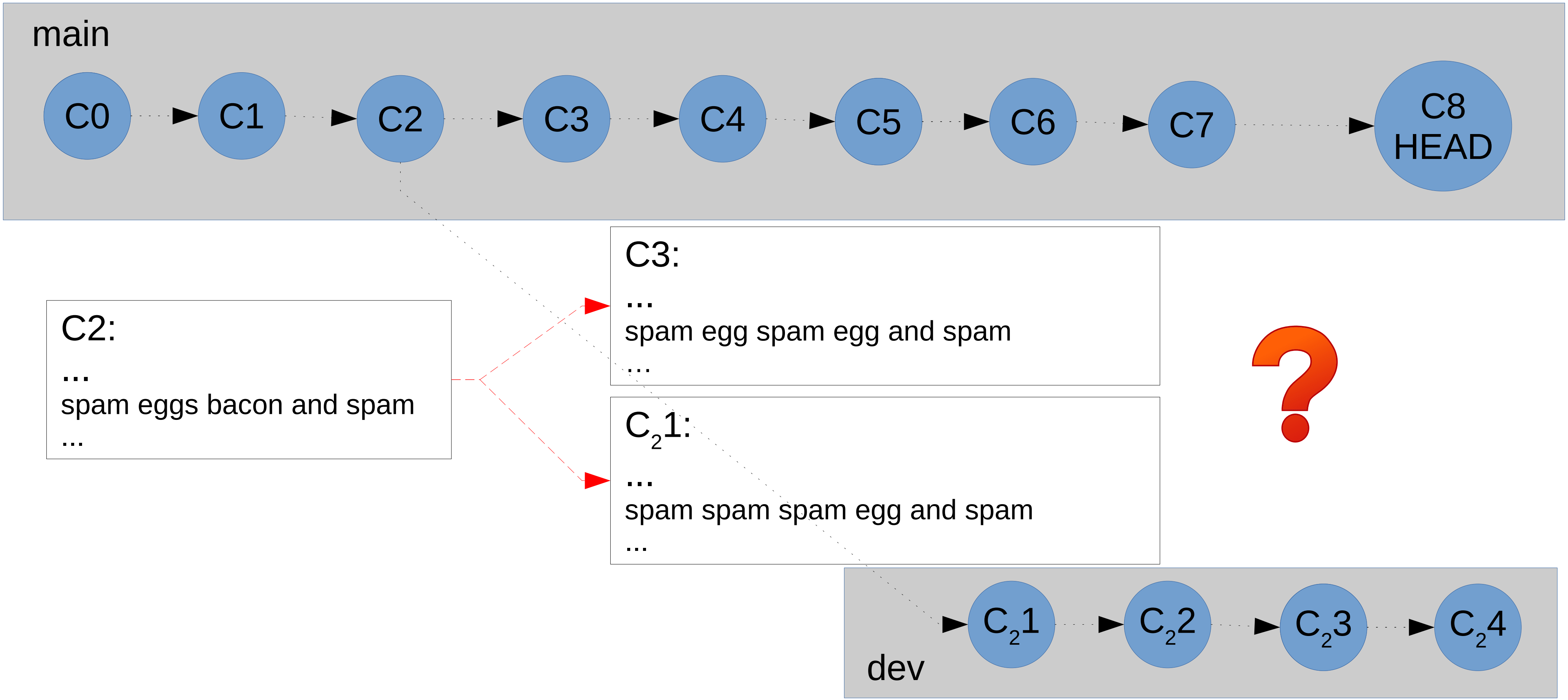
Fusionado: merge



Fusionado: merge



Fusionado: resolución de conflictos



Fusionado: resolución de conflictos

egg and bacon

egg sausage and bacon

egg and spam

egg bacon and spam

egg bacon sausage and spam

spam bacon sausage and spam

spam egg spam spam spam bacon and spam

>>>>>>>>HEAD

spam egg spam egg and spam

========

spam spam spam egg and spam

<<<<<<<<$C_2$1

spam spam spam spam spam spam baked beans spam spam spam spam and spam

lobster termidor aux crevettes with a mornay sauce garnished with truffle pate, brandy and a fried egg on top and spam

Fusionado: resolución de conflictos

egg and bacon
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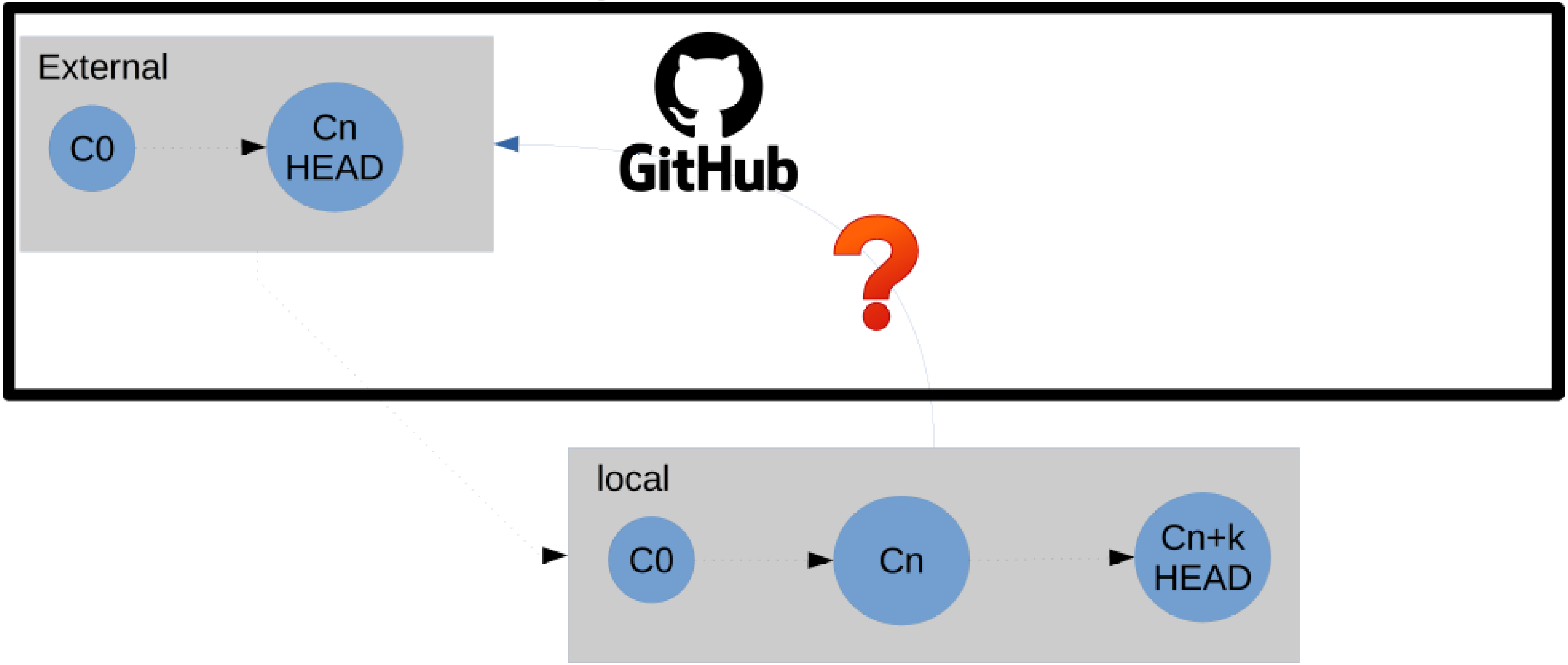
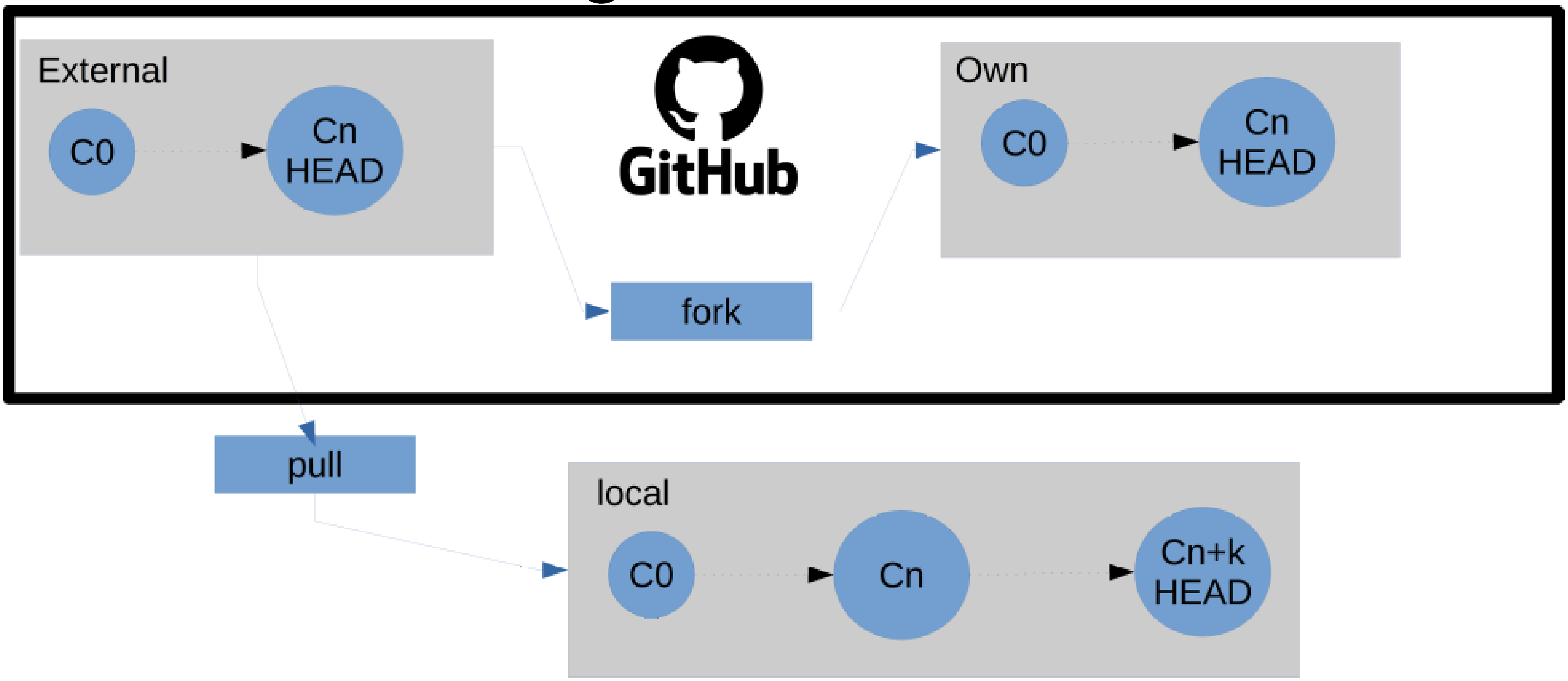
Código colaborativo



Código colaborativo



Código colaborativo