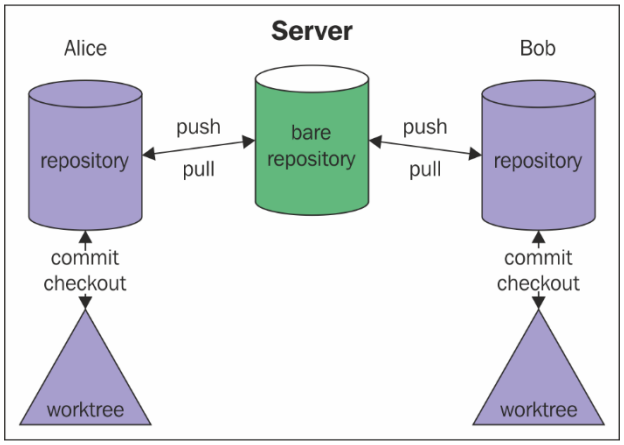
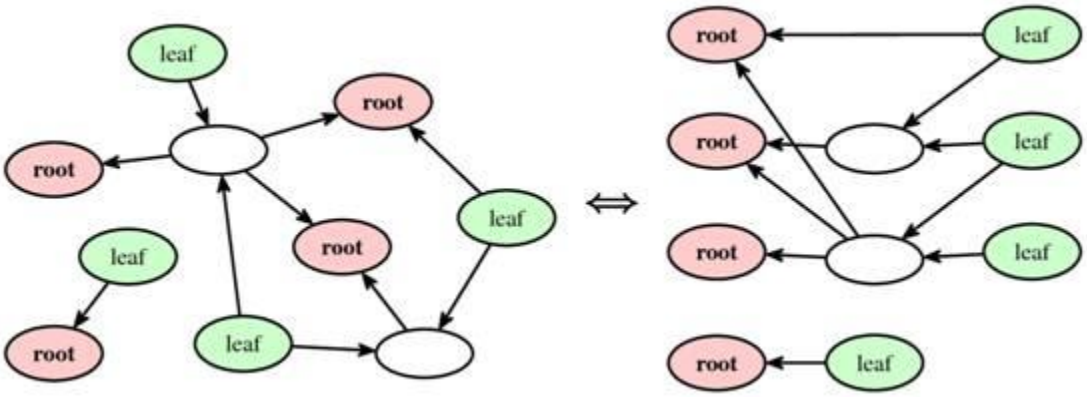
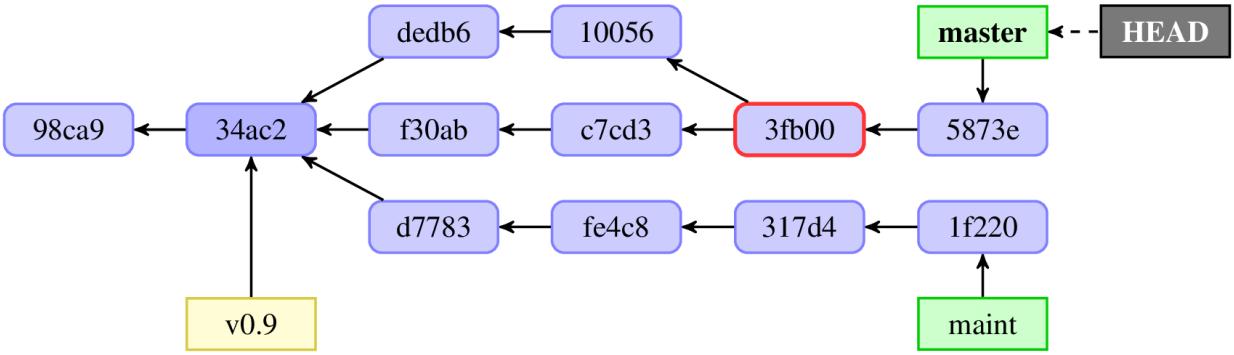
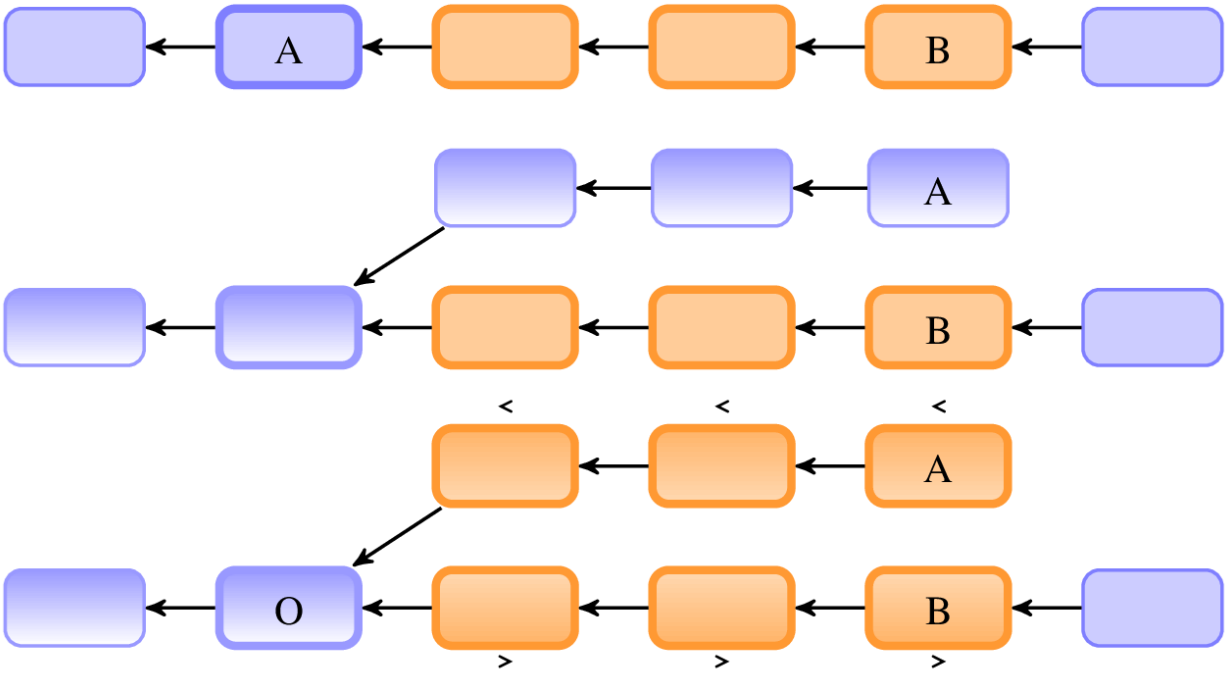
Chapter 1: Git Basics in Practice

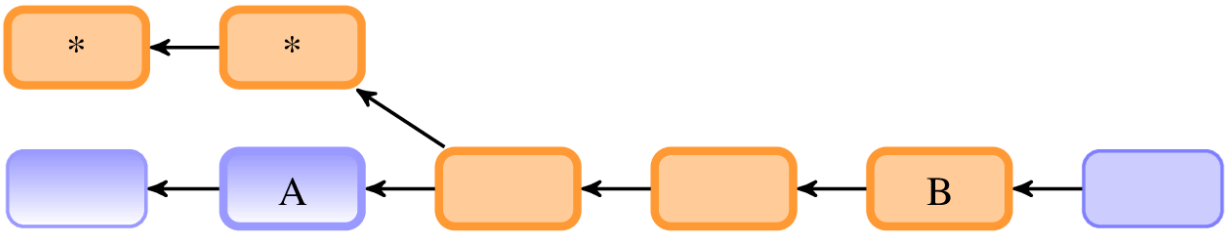


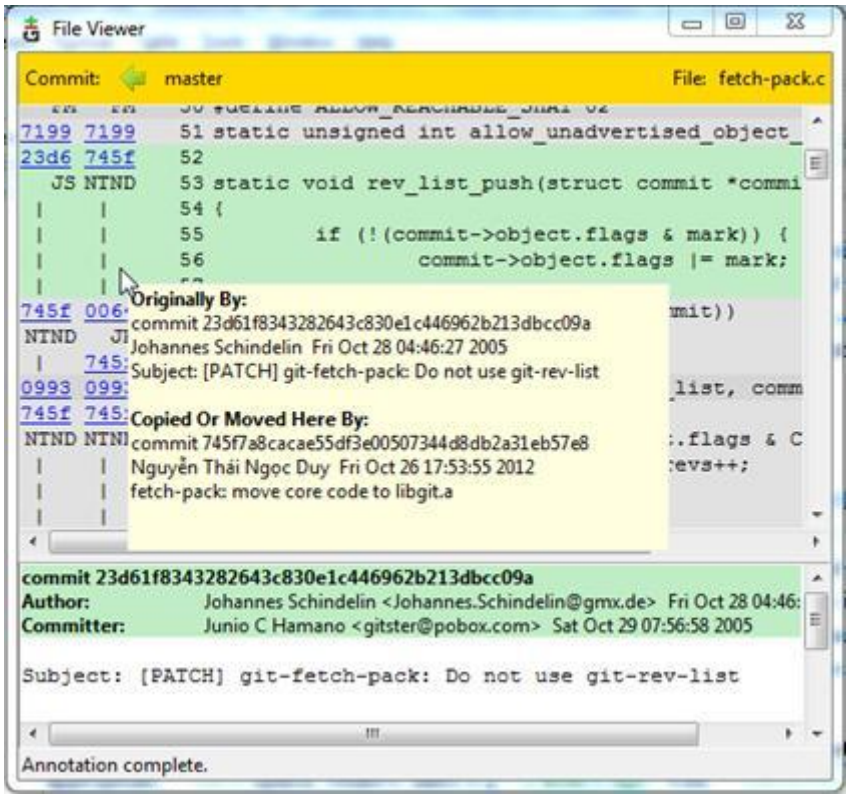
Chapter 2: Exploring Project History



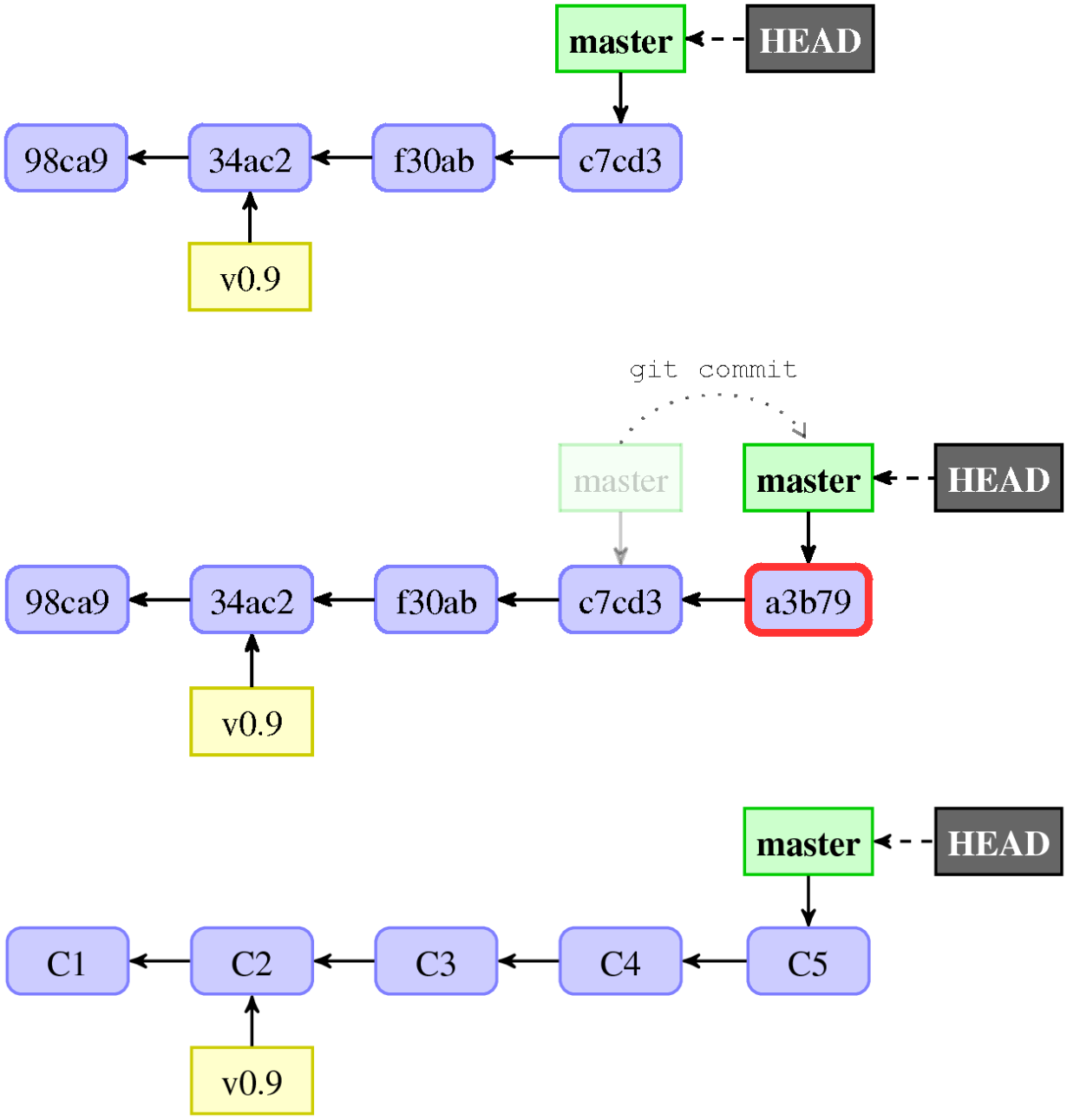


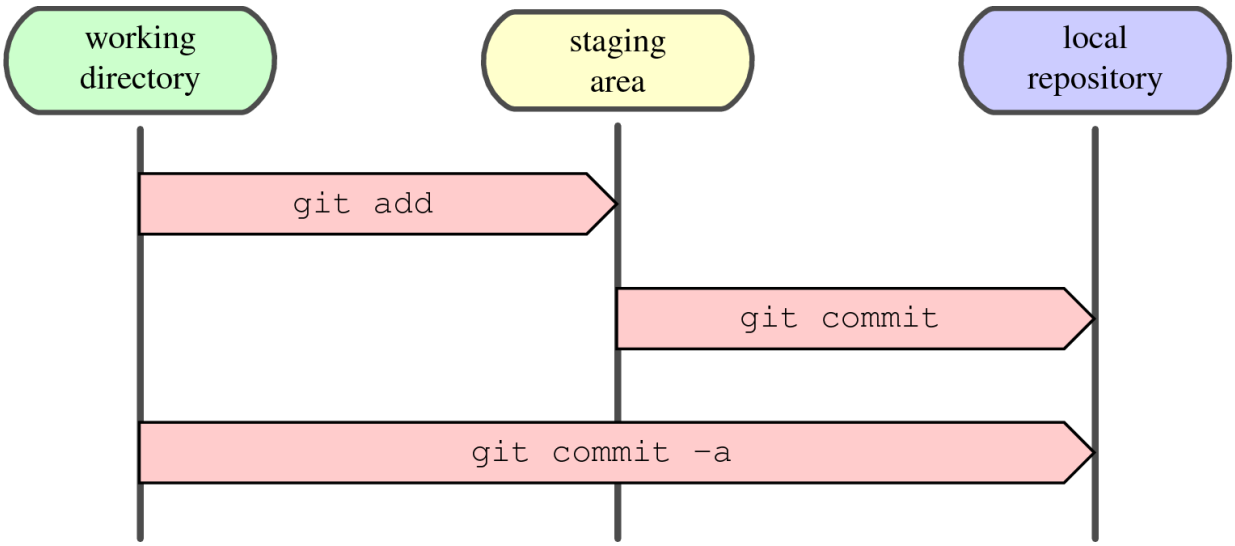


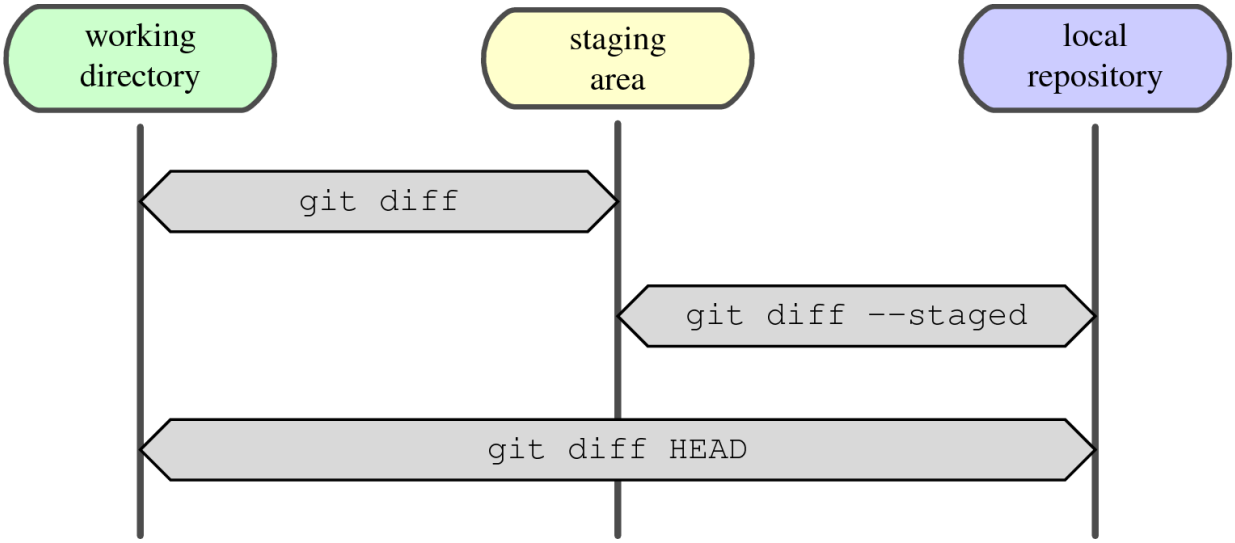

*
*
A
B

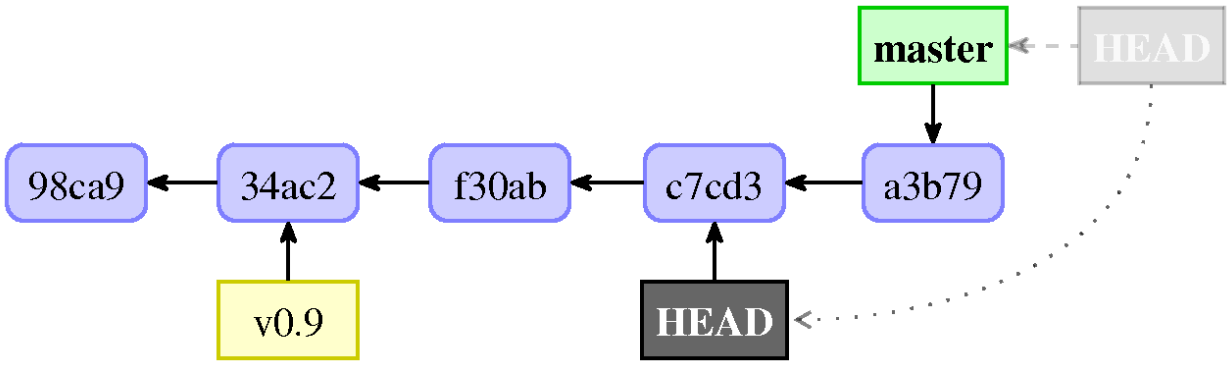

File Viewer
Commit: master
File: fetch-pack.c
7199 7199 51 static unsigned int allow_unadvertised_object_
23d6 745f 52
JS NTND 53 static void rev_list_push(struct commit *commi
54 {
55 if (!(commit->object.flags & mark)) {
56 commit->object.flags |= mark;
Originally By:
commit 23d61f8343282643c830e1c446962b213dbcc09a
Johannes Schindelin Fri Oct 28 04:46:27 2005
Subject: [PATCH] git-fetch-pack: Do not use git-rev-list
Copied Or Moved Here By:
commit 745f7a8cacae55df3e00507344d8db2a31eb57e8
Nguyễn Thái Ngọc Duy Fri Oct 26 17:53:55 2012
fetch-pack: move core code to libgit.a
commit 23d61f8343282643c830e1c446962b213dbcc09a
Author: Johannes Schindelin <Johannes.Schindelin@gmx.de> Fri Oct 28 04:46:
Committer: Junio C Hamano <gitster@pobox.com> Sat Oct 29 07:56:58 2005
Subject: [PATCH] git-fetch-pack: Do not use git-rev-list
Annotation complete.

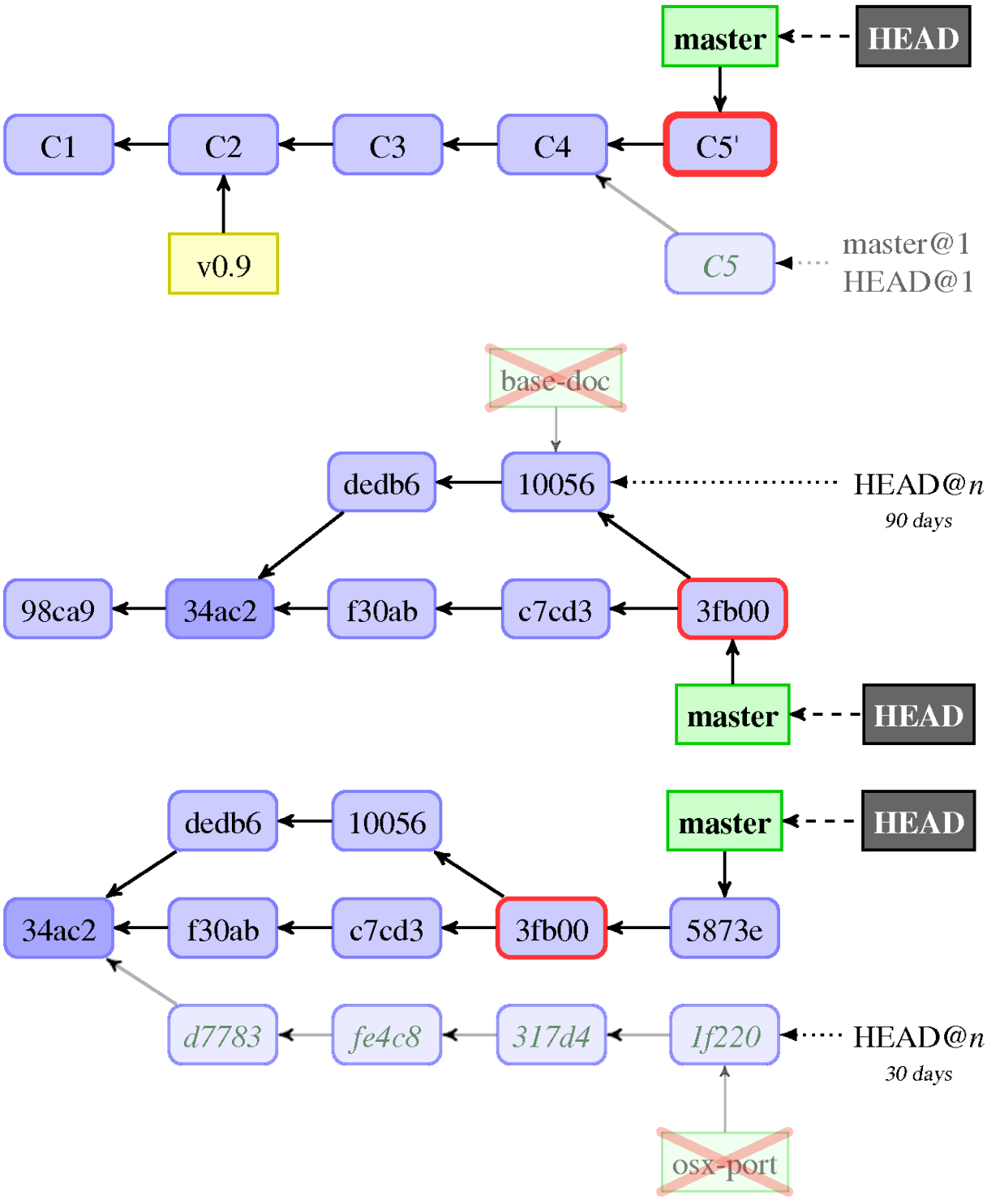
Chapter 3: Developing with Git

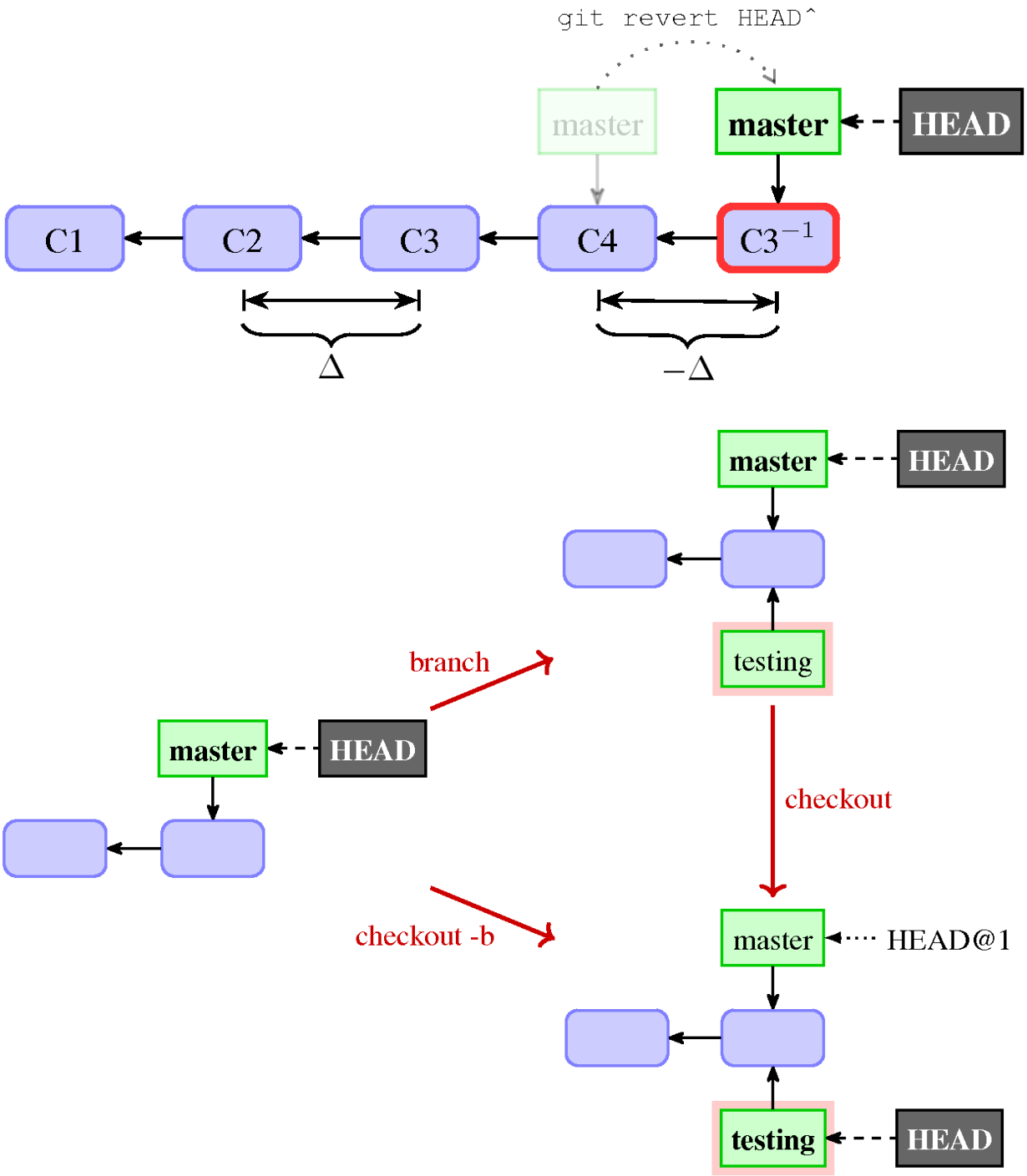


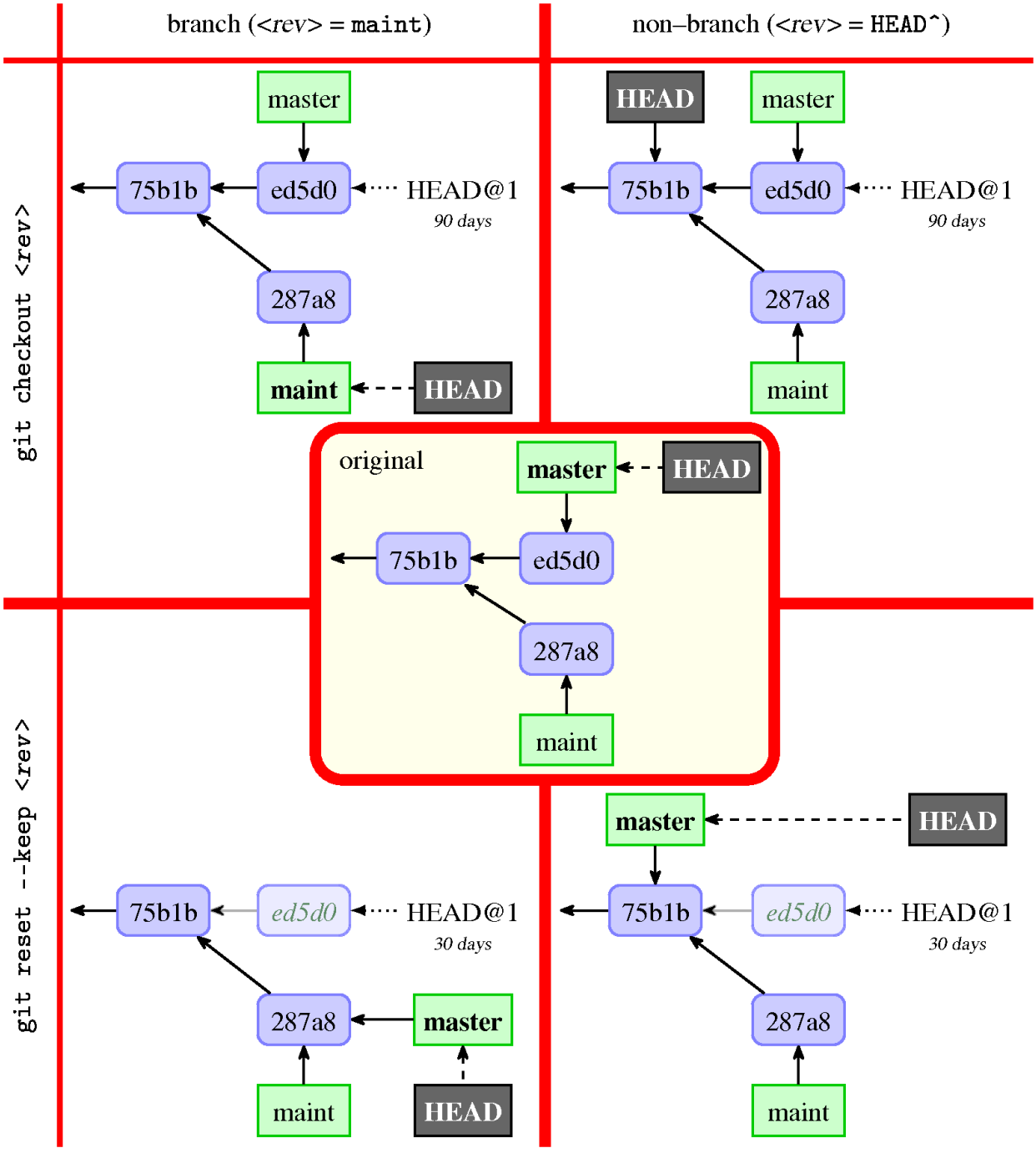

working directory
staging area
local repository
git add
git commit
git commit -a


working directory
staging area
local repository
git diff
git diff --staged
git diff HEAD

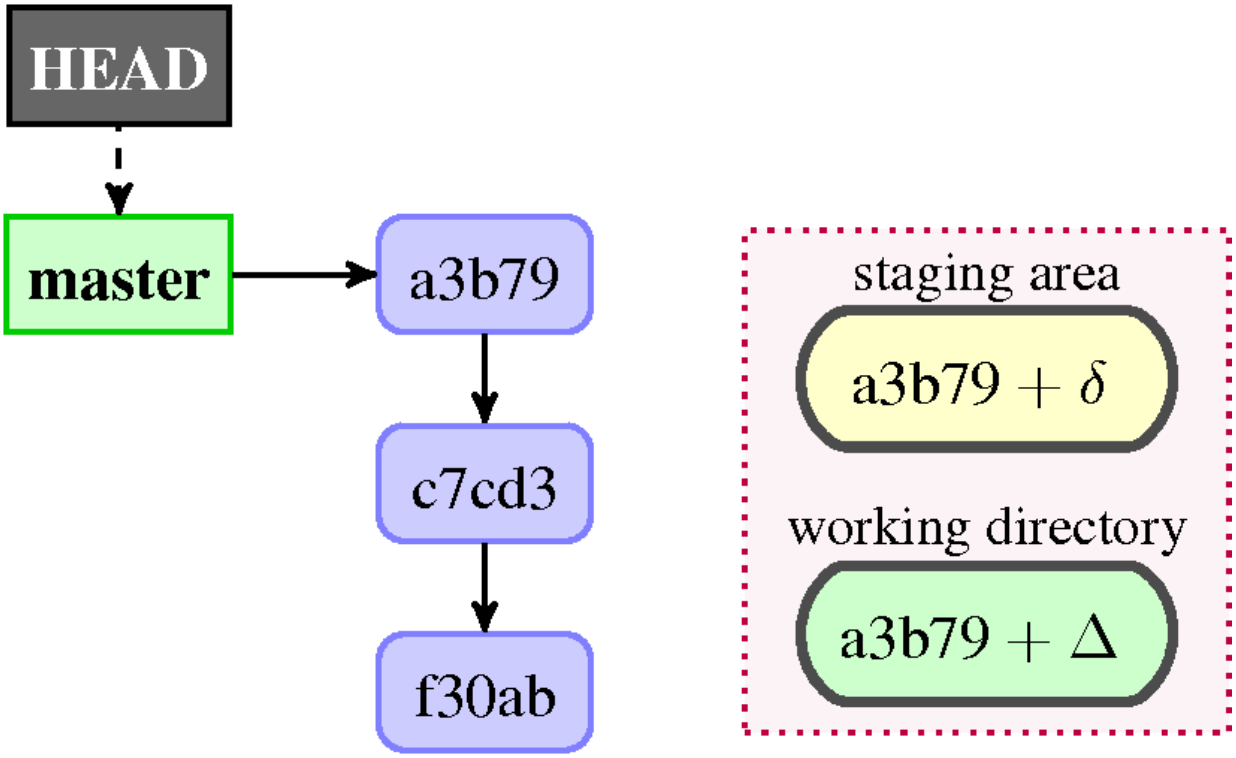

master
HEAD
98ca9
34ac2
f30ab
c7cd3
a3b79
v0.9
HEAD

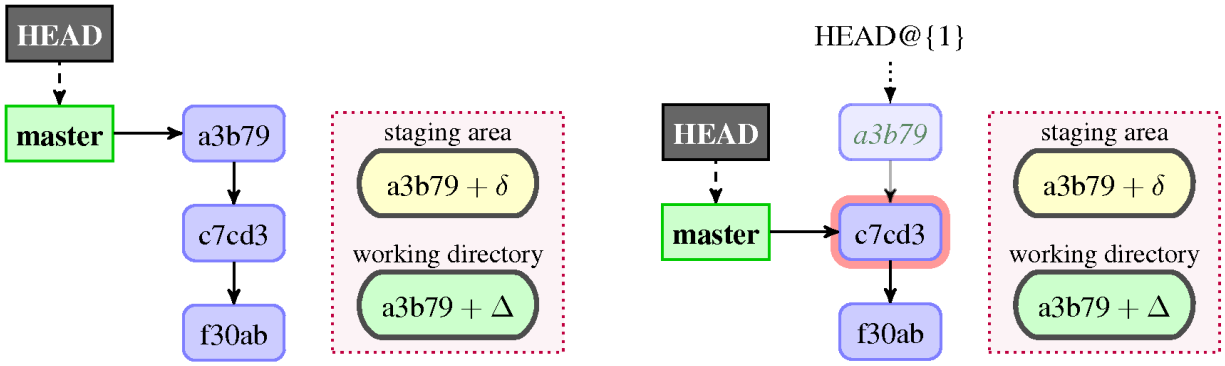

master
HEAD
C1
C2
C3
C4
C5'
v0.9
C5
master@1
HEAD@1
base-doc
dedb6
10056
HEAD@n
90 days
98ca9
34ac2
f30ab
c7cd3
3fb00
master
HEAD
dedb6
10056
master
HEAD
34ac2
f30ab
c7cd3
3fb00
5873e
d7783
fe4c8
317d4
1f220
HEAD@n
30 days
osx-port


git revert HEAD^
master
master
HEAD
C1
C2
C3
C4
C3^-1
Δ
−Δ
master
HEAD
testing
branch
master
HEAD
checkout
checkout -b
master
HEAD@1
testing
HEAD

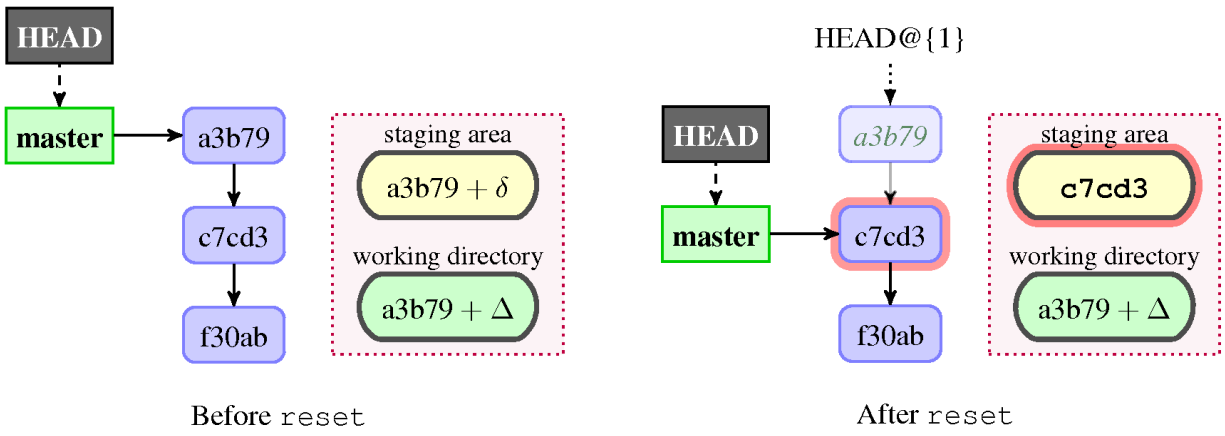

branch (<rev> = maint)
non–branch (<rev> = HEAD^)
git checkout <rev>
git reset --keep <rev>
master
HEAD
75b1b
ed5d0
HEAD@1
90 days
287a8
maint
original
ed5d0
30 days

Chapter 4: Managing Your Worktree

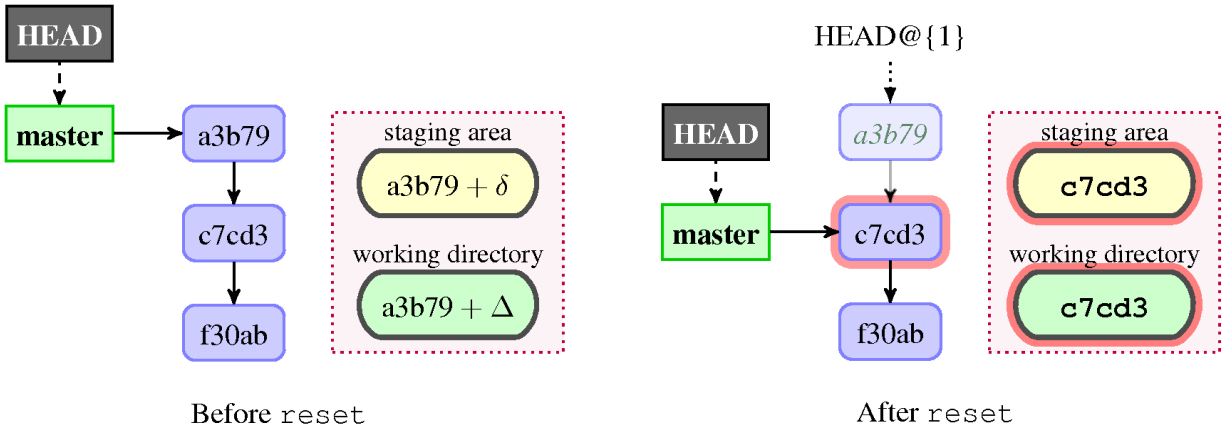




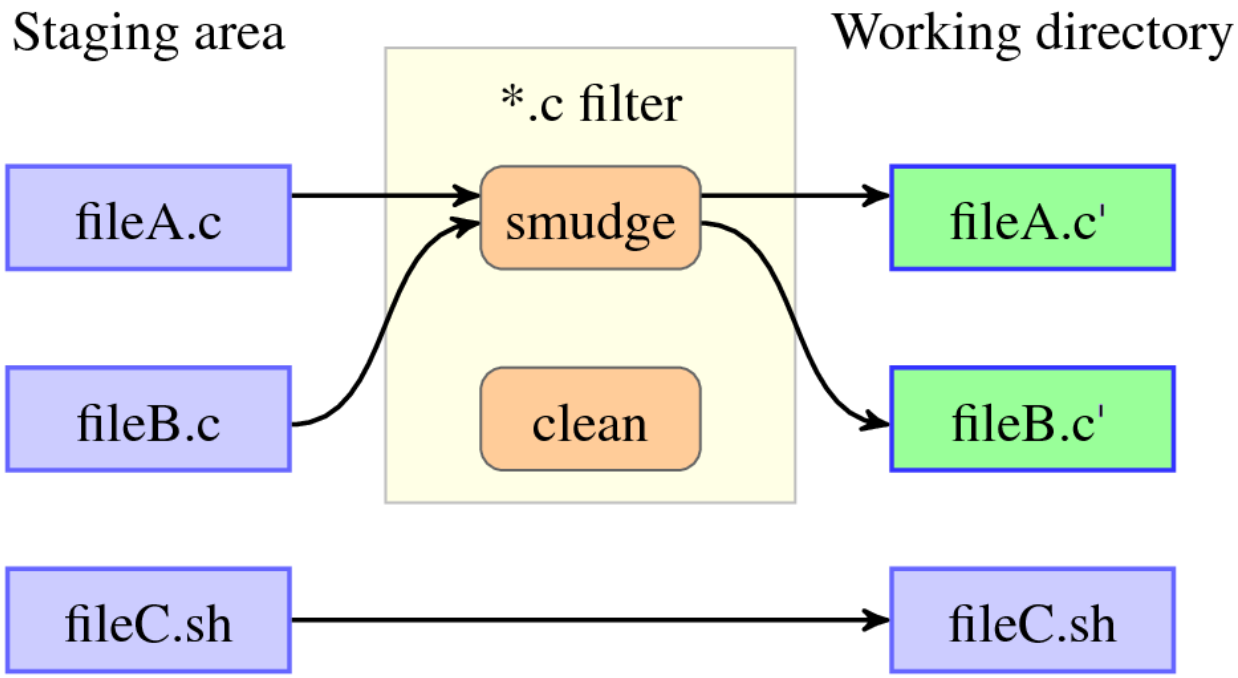
Before `reset` After `reset`

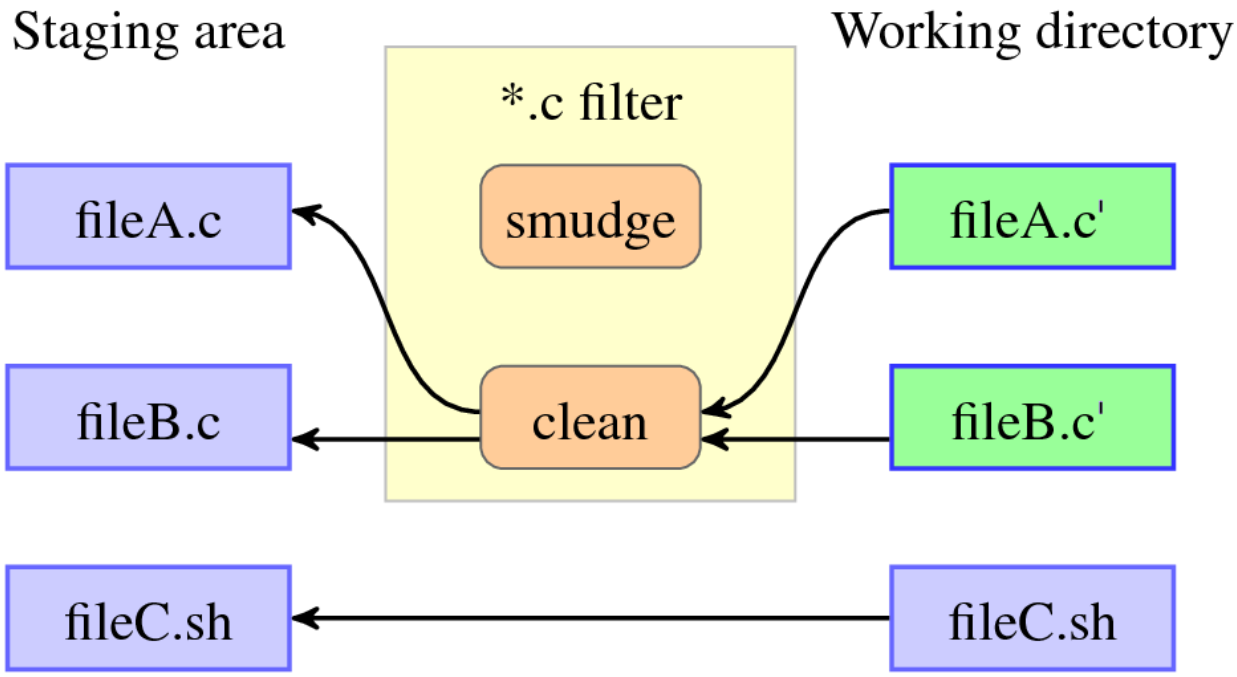


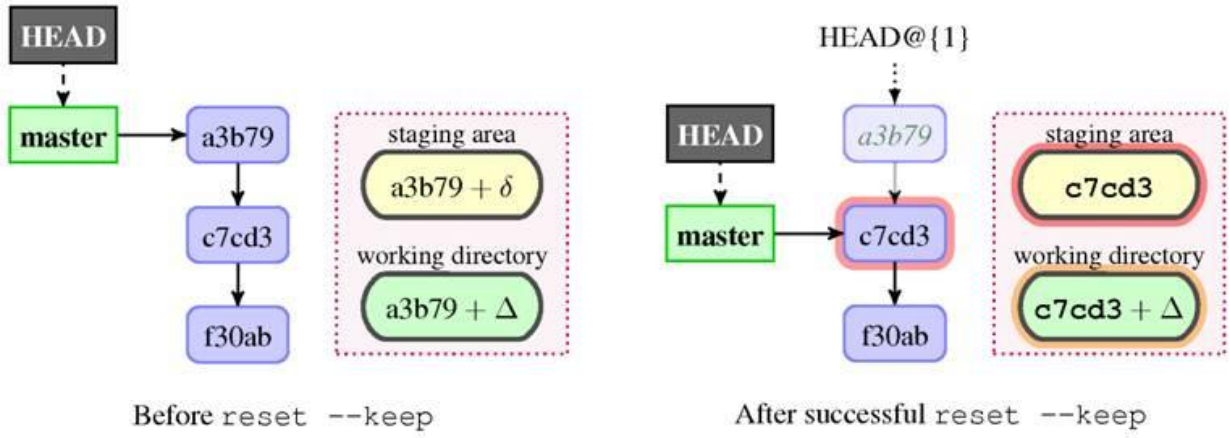
Before `reset` After `reset`



Before `reset` After `reset`



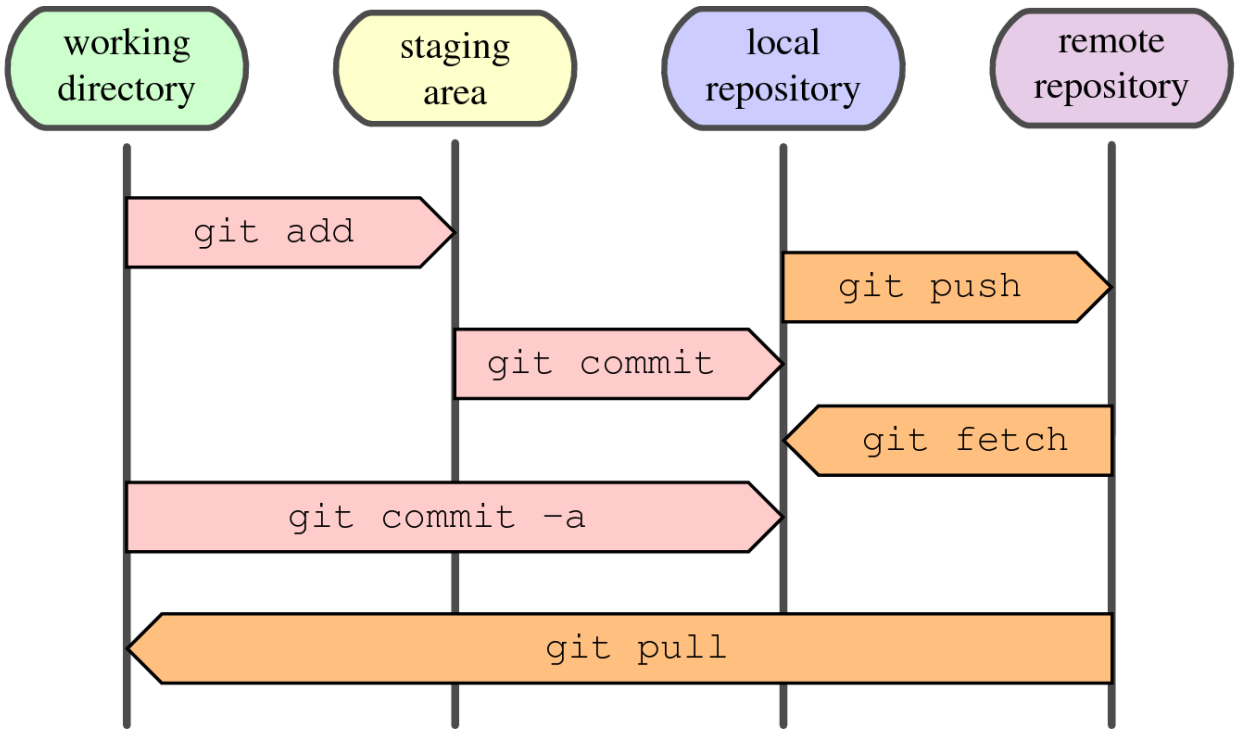


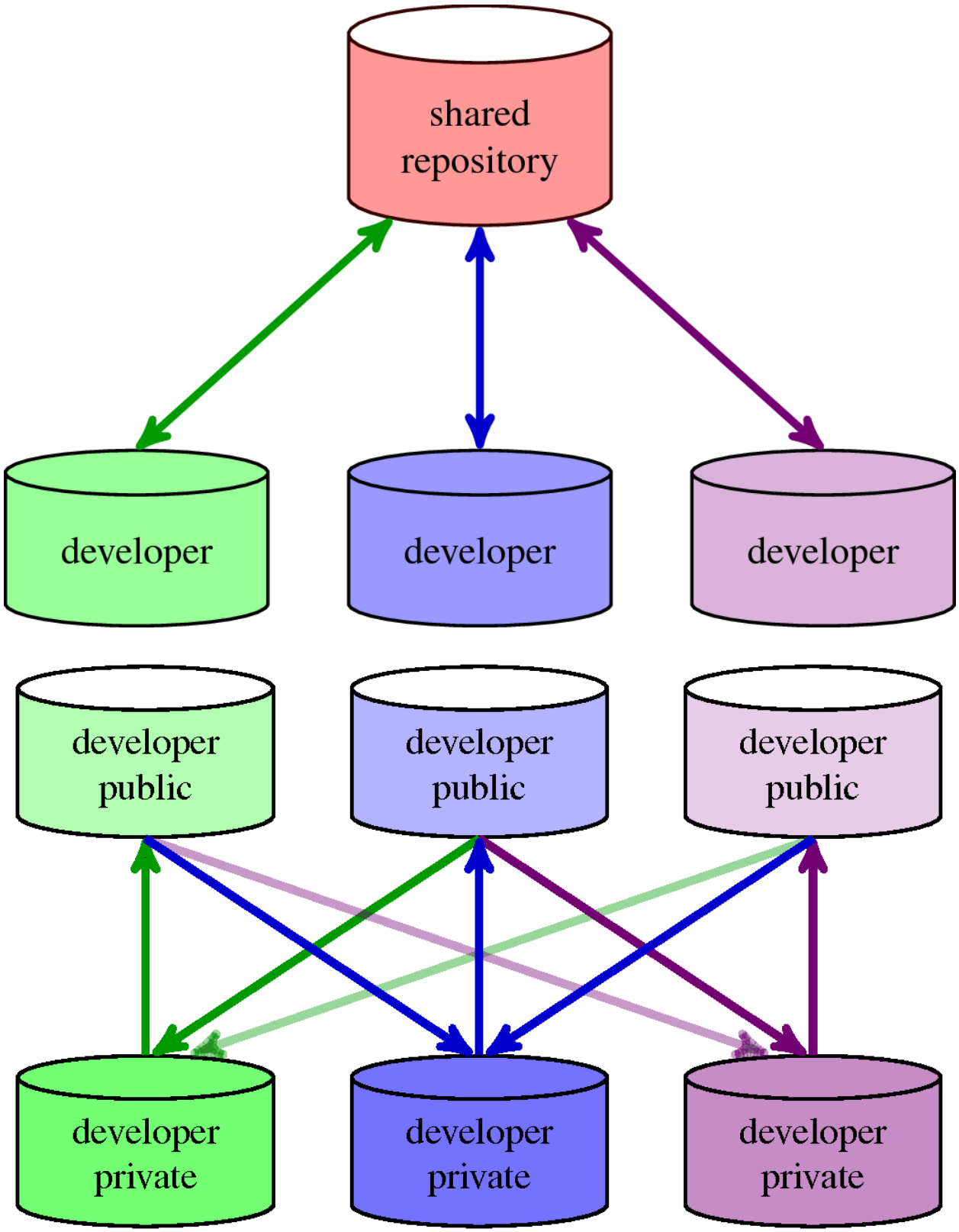


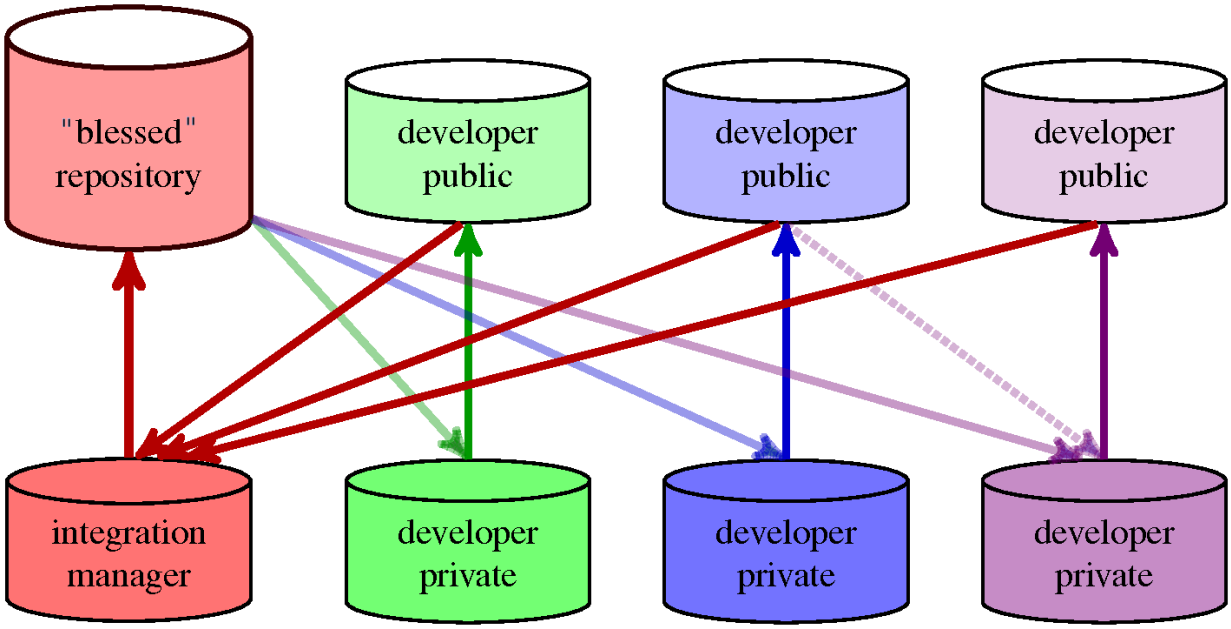
Before `reset --keep`

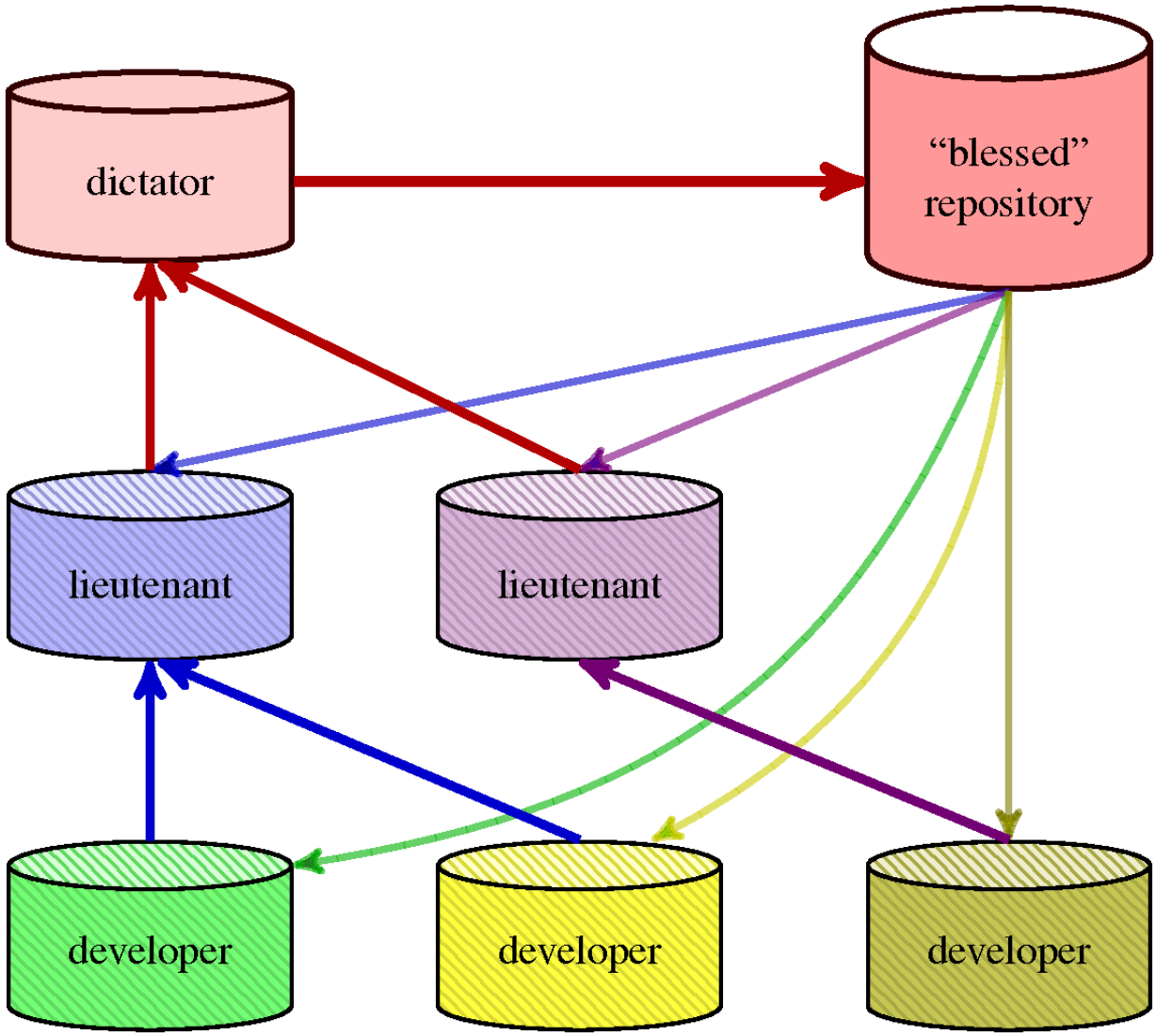
After successful `reset --keep`

Chapter 5: Collaborative Development with Git

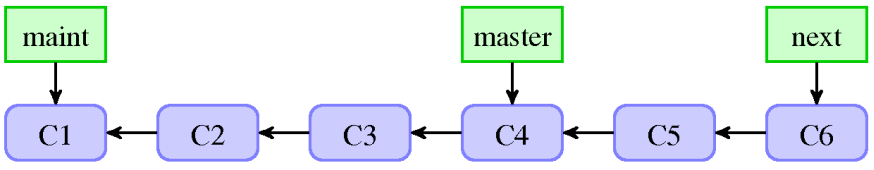


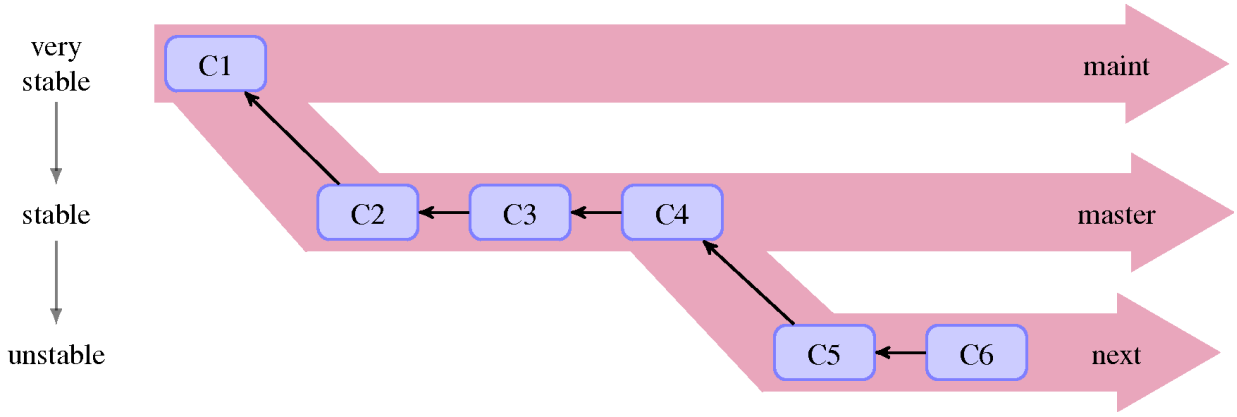

shared
repository
developer
developer
developer
developer
public
developer
public
developer
public
developer
private
developer
private
developer
private

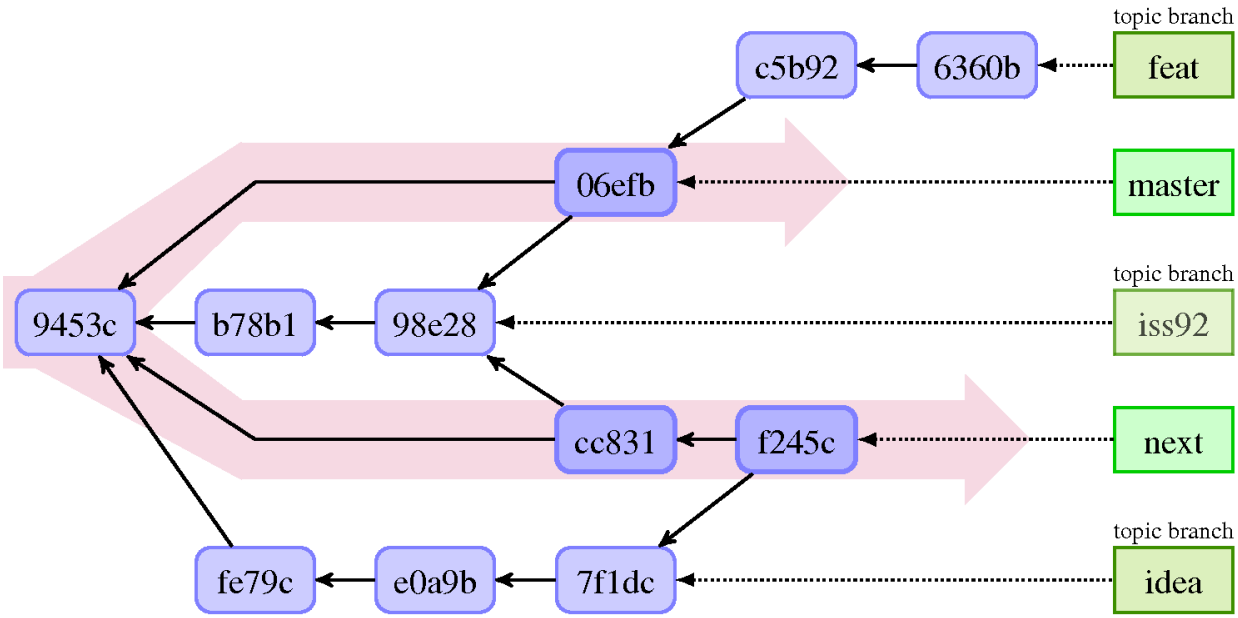

"blessed"
repository
developer
public
developer
public
developer
public
integration
manager
developer
private
developer
private
developer
private

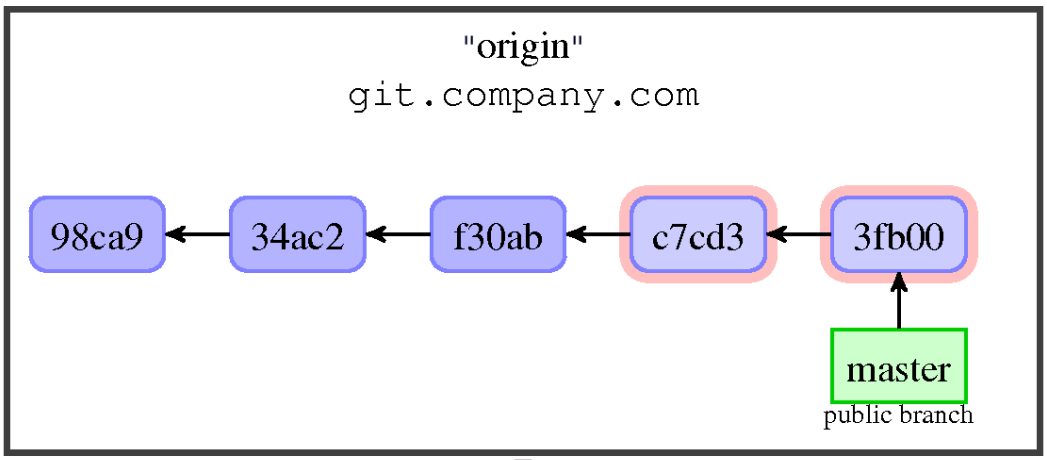

dictator
"blessed"
repository
lieutenant
lieutenant
developer
developer
developer

Chapter 6: Advanced Branching Techniques

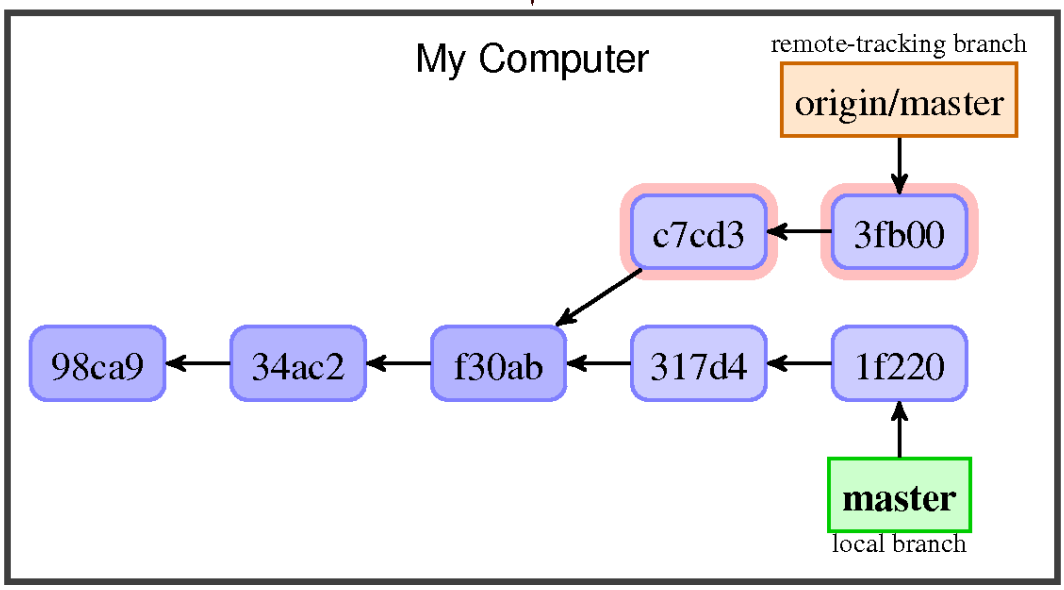


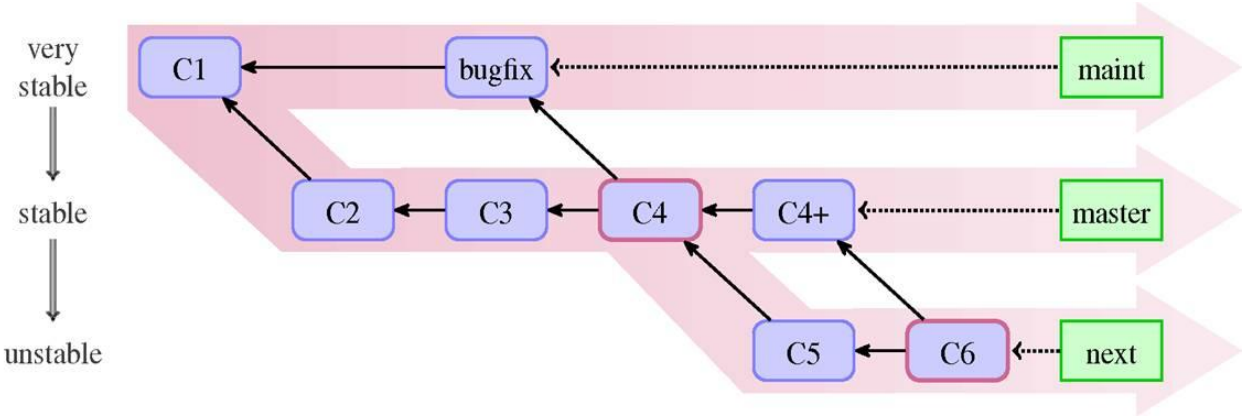


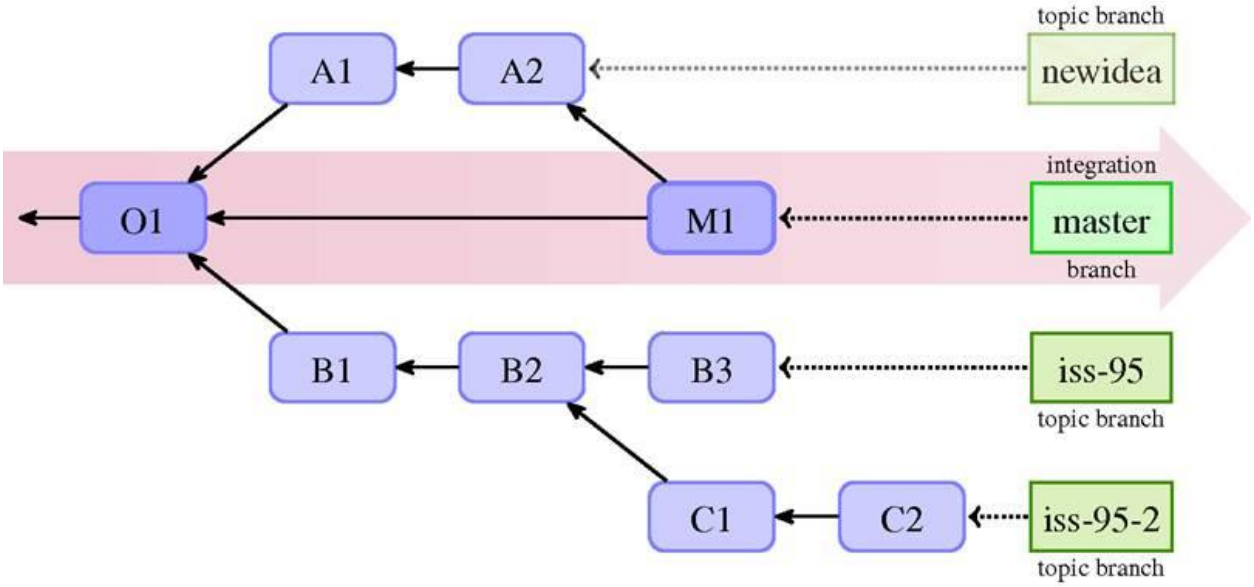




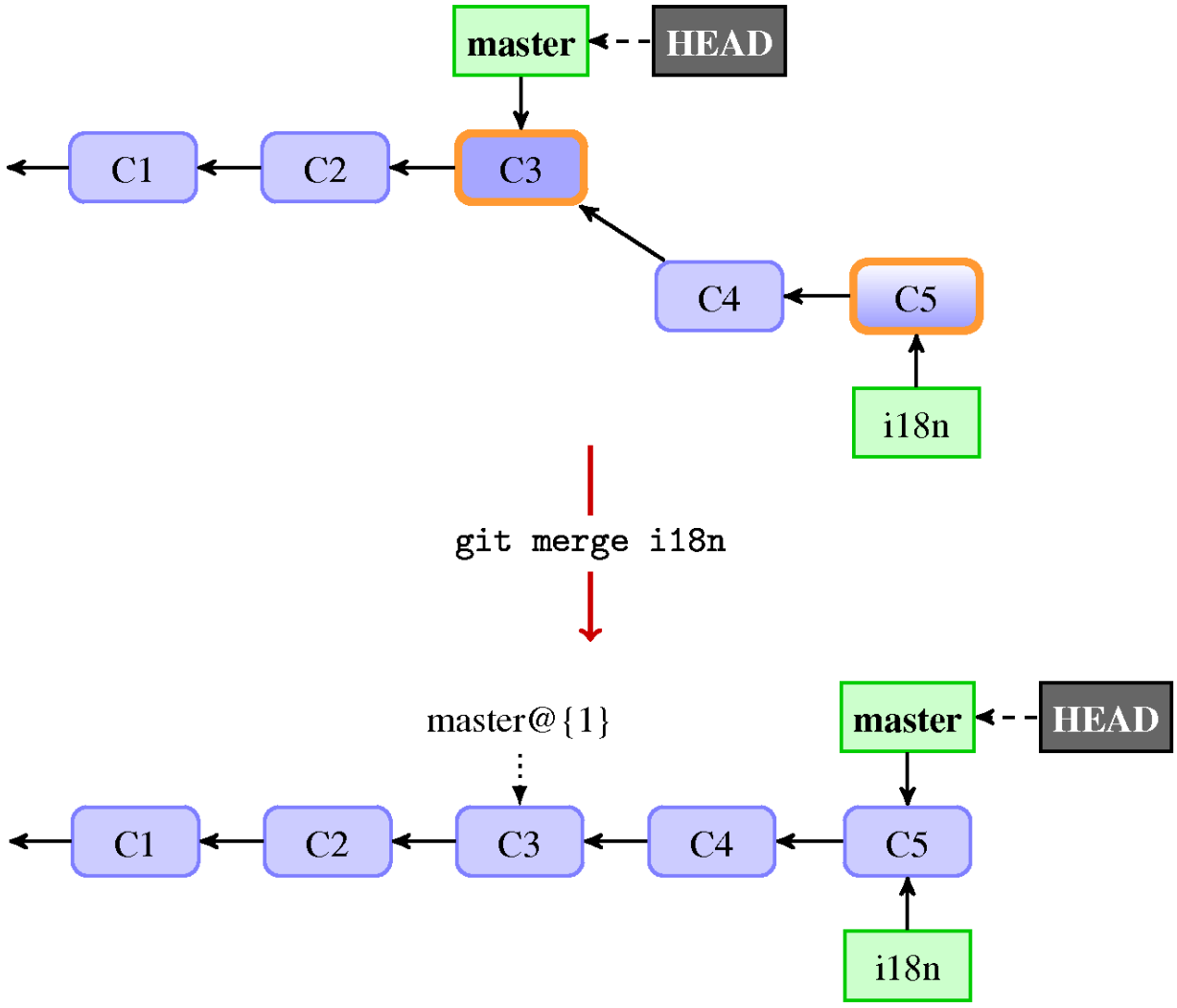
git fetch origin *+refs/heads/*:refs/remotes/origin/**

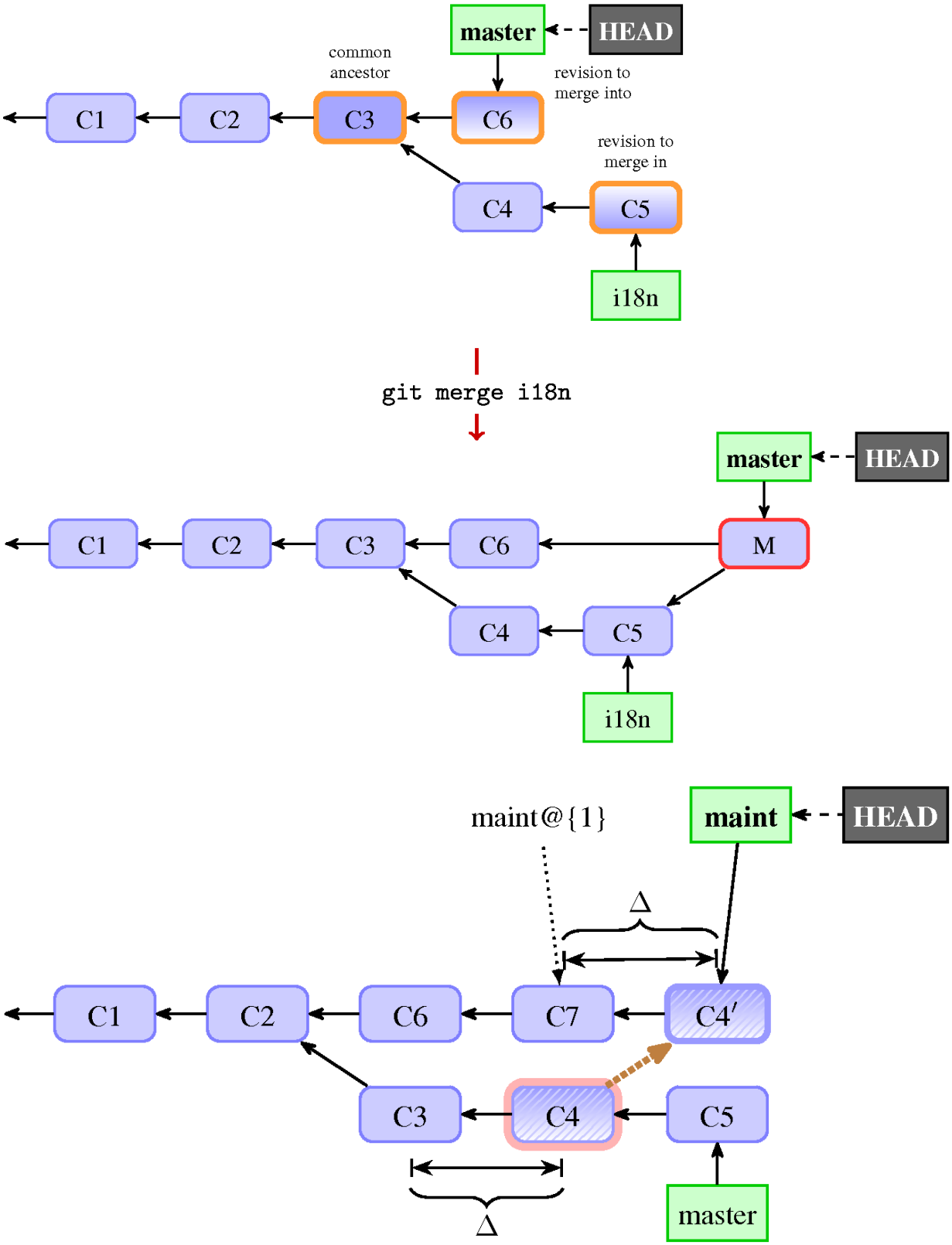


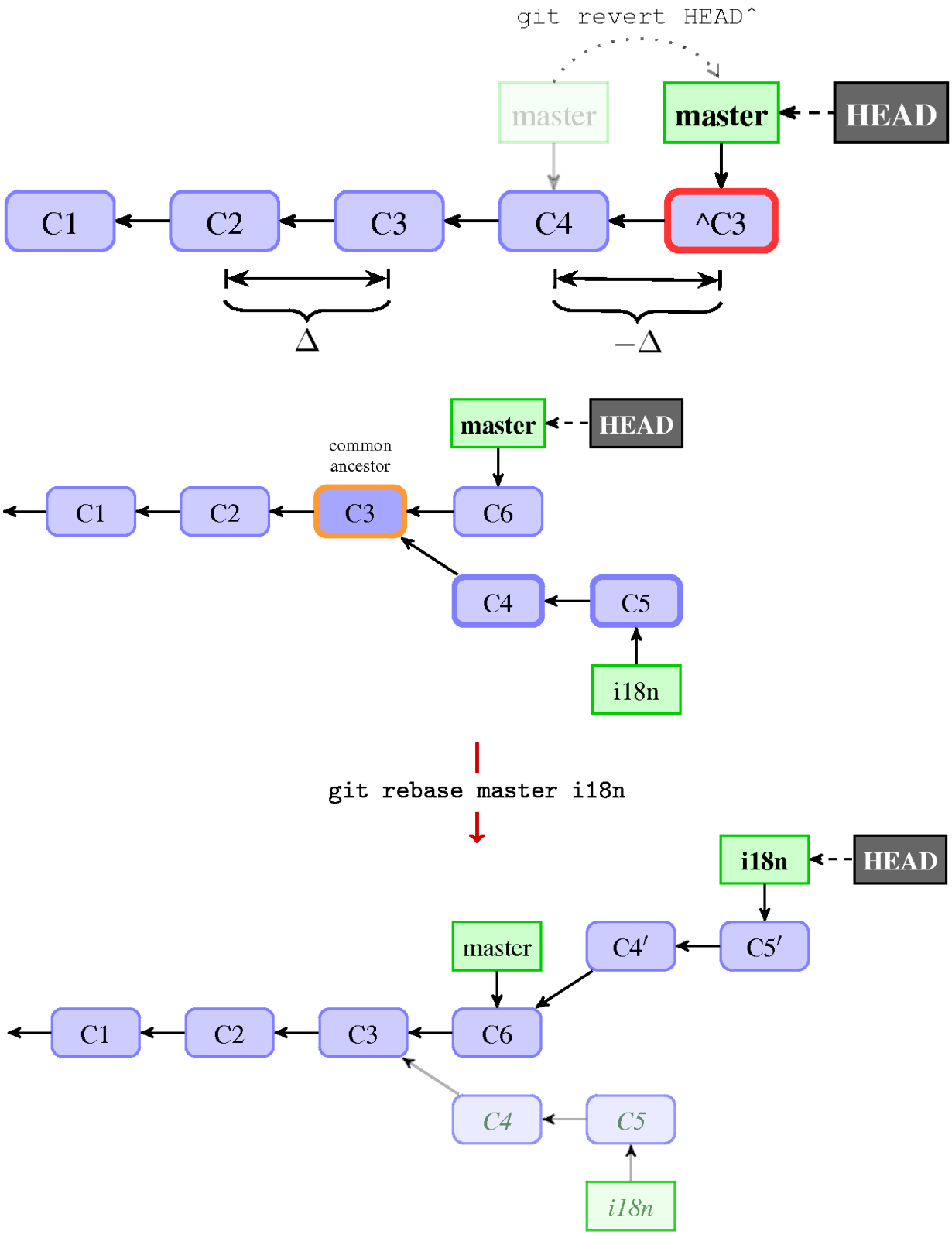


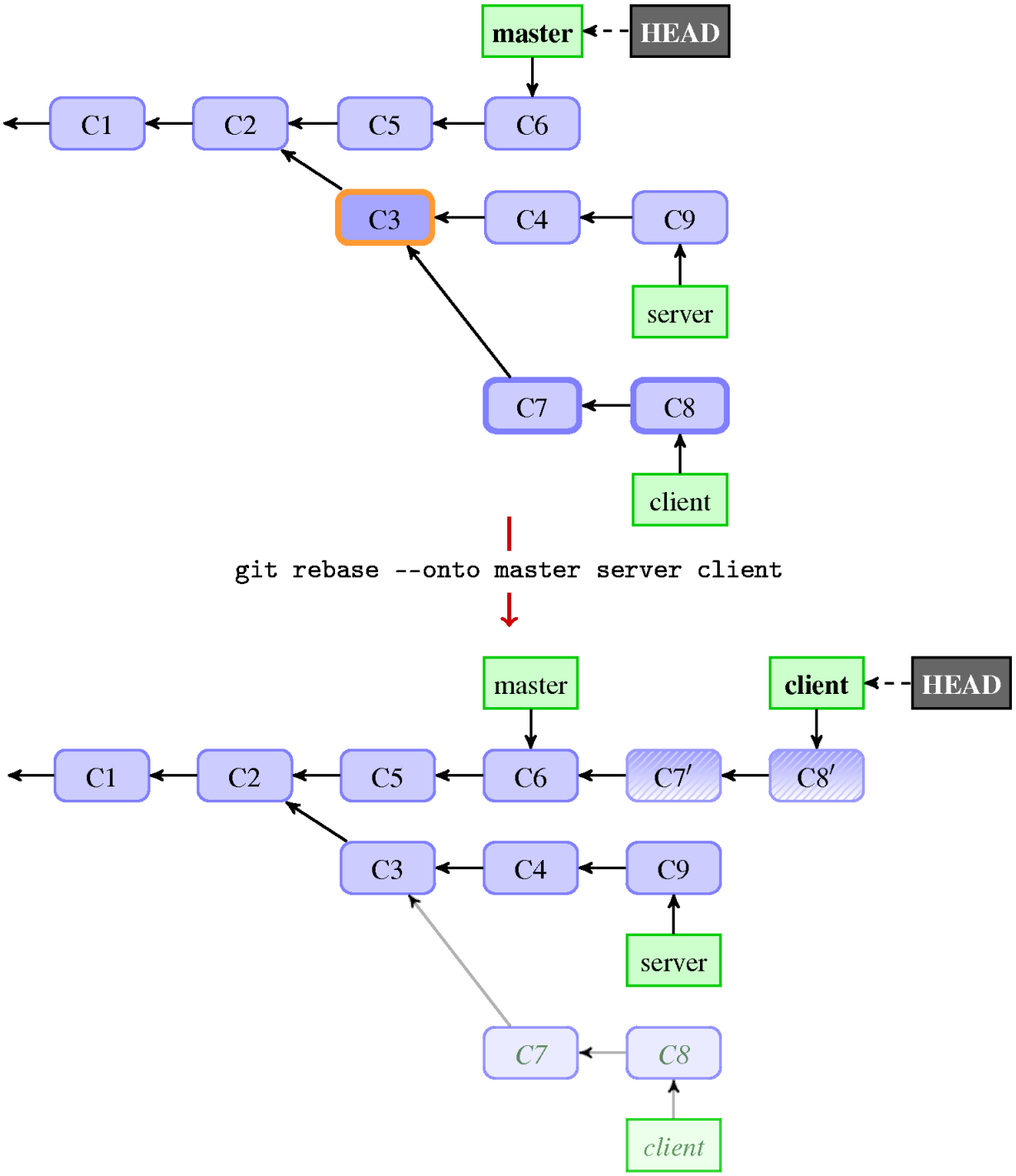

topic branch
A1
A2
newidea
integration
O1
M1
master
branch
B1
B2
B3
iss-95
topic branch
C1
C2
iss-95-2
topic branch

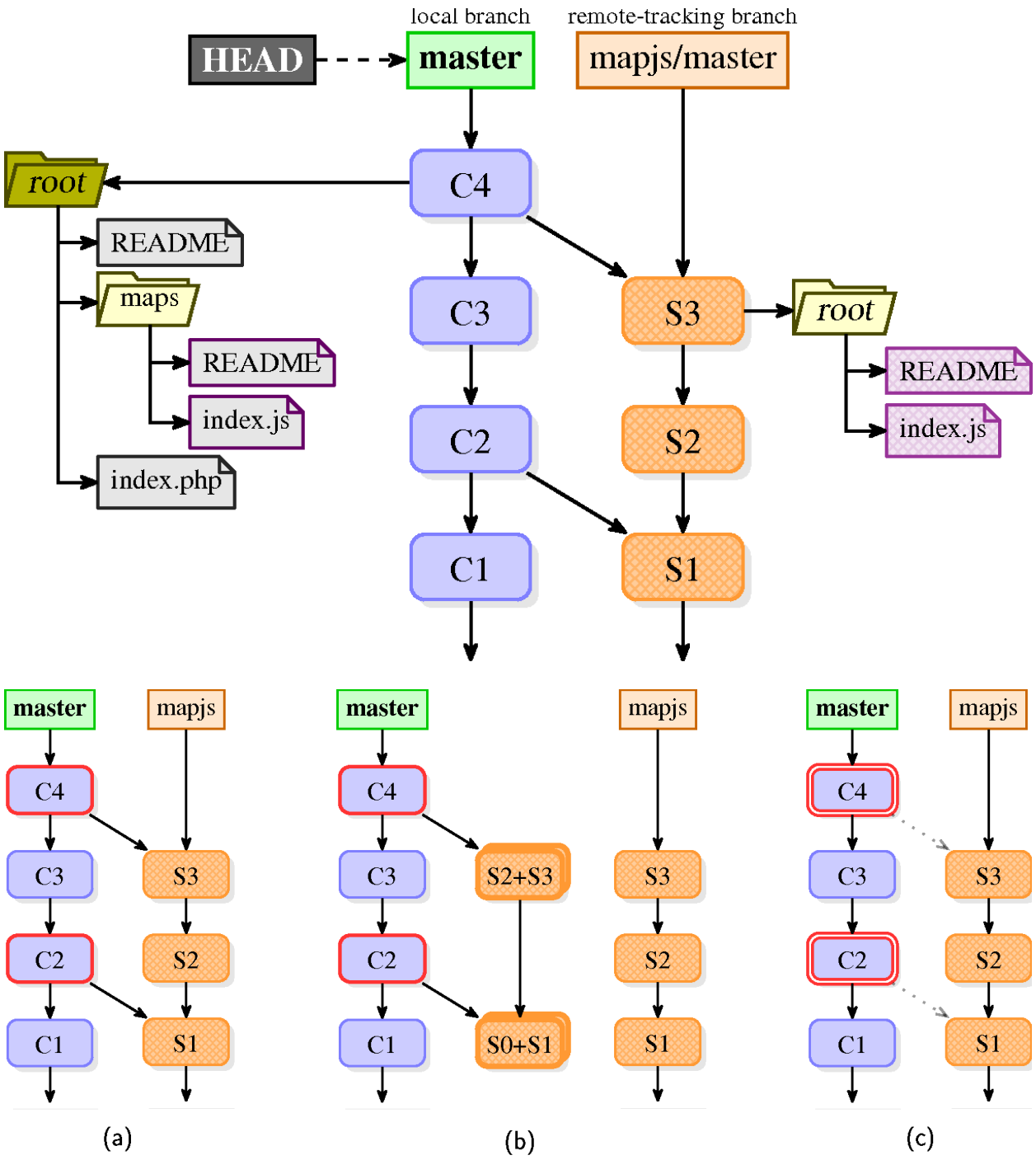
Chapter 7: Merging Changes Together



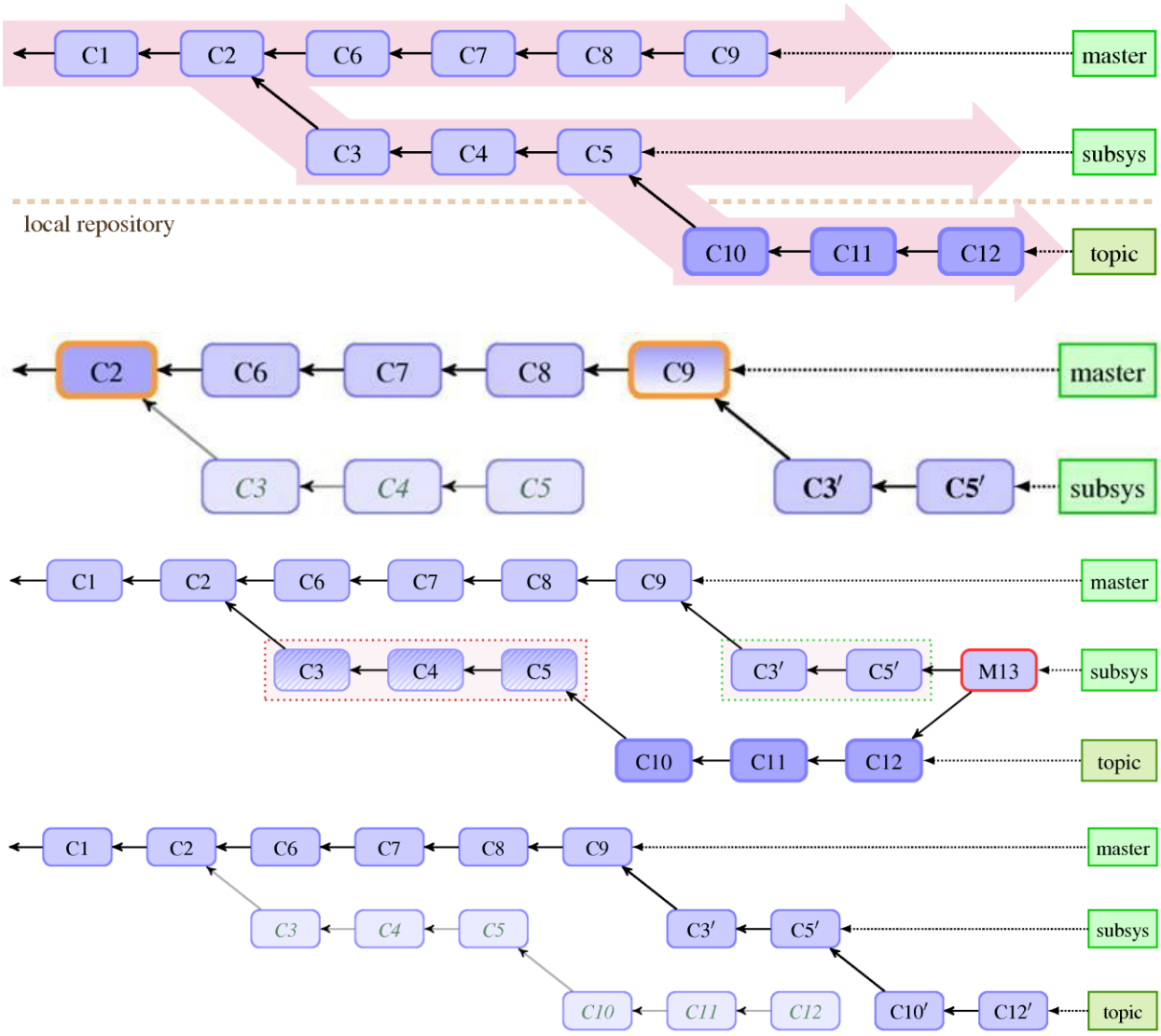

master
HEAD
common ancestor
revision to merge into
C1
C2
C3
C6
revision to merge in
C4
C5
i18n
git merge i18n
master
HEAD
C1
C2
C3
C6
M
C4
C5
i18n
maint@{1}
maint
HEAD
Δ
C1
C2
C6
C7
C4′
C3
C4
C5
master
Δ

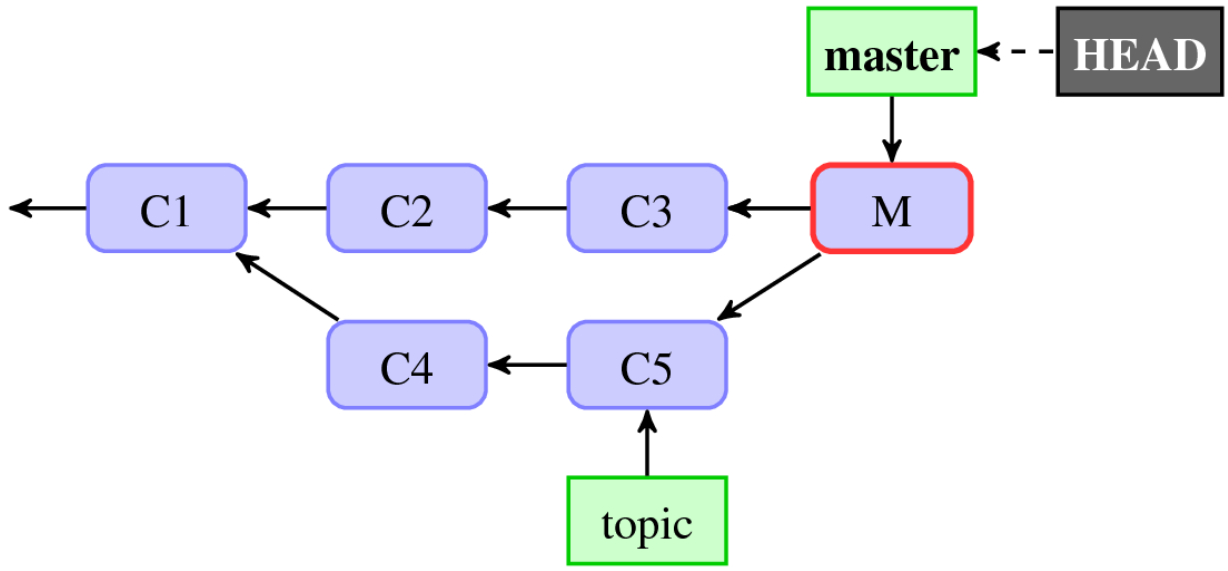

git revert HEAD^
master
master
HEAD
C1
C2
C3
C4
^C3
Δ
−Δ
master
HEAD
common
ancestor
C1
C2
C3
C6
C4
C5
i18n
git rebase master i18n
i18n
HEAD
master
C4′
C5′
C1
C2
C3
C6
C4
C5
i18n

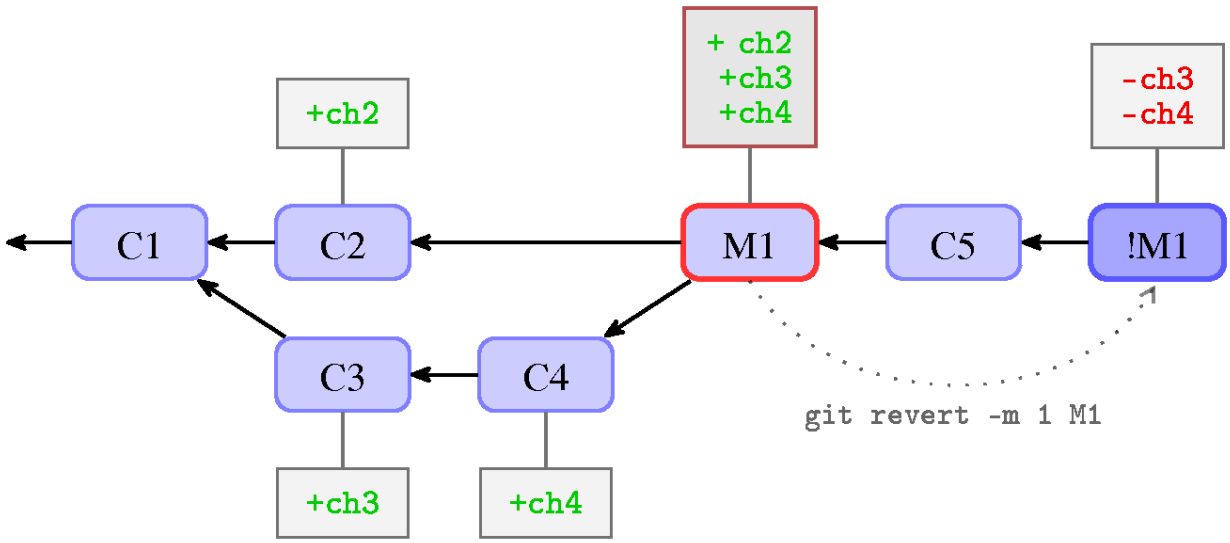

master
HEAD
C1
C2
C5
C6
C3
C4
C9
server
C7
C8
client
git rebase --onto master server client
master
client
HEAD
C1
C2
C5
C6
C7′
C8′
C3
C4
C9
server
C7
C8
client

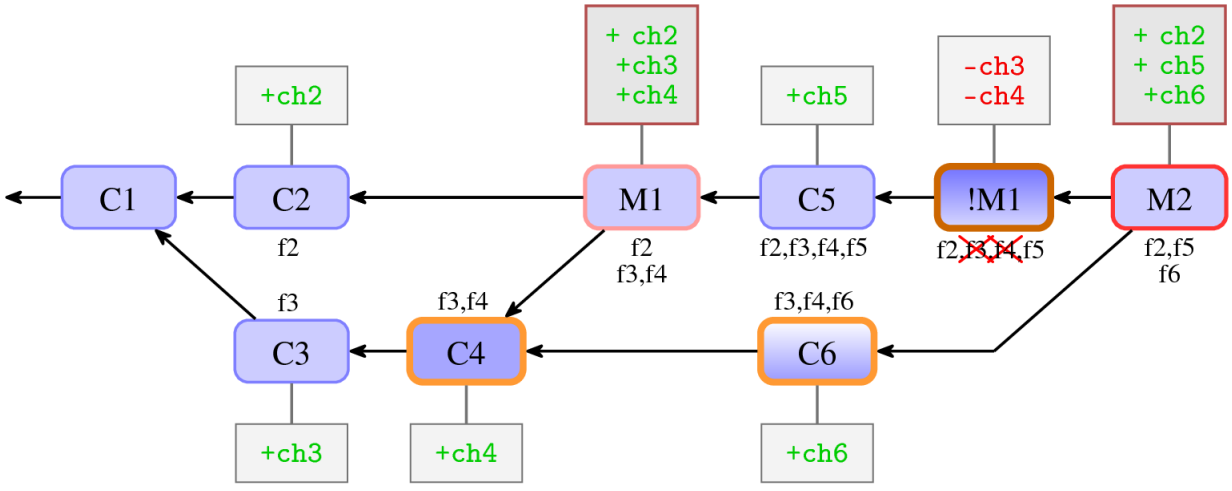

local branch
remote-tracking branch
HEAD
master
mapjs/master
root
C4
README
maps
C3
S3
root
README
index.js
README
index.js
C2
S2
index.php
C1
S1
master
mapjs
C4
C3
S3
C2
S2
C1
S1
(a)
master
mapjs
C4
C3
S2+S3
C2
S0+S1
C1
S3
S2
S1
(b)
master
mapjs
C4
C3
S3
C2
S2
C1
S1
(c)

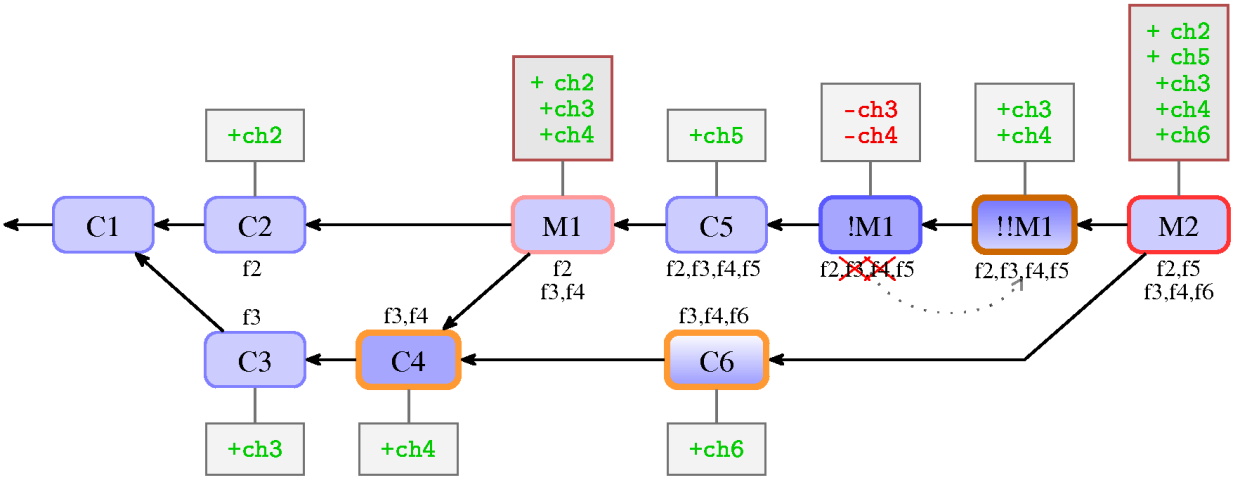
Chapter 8, Keeping History Clean

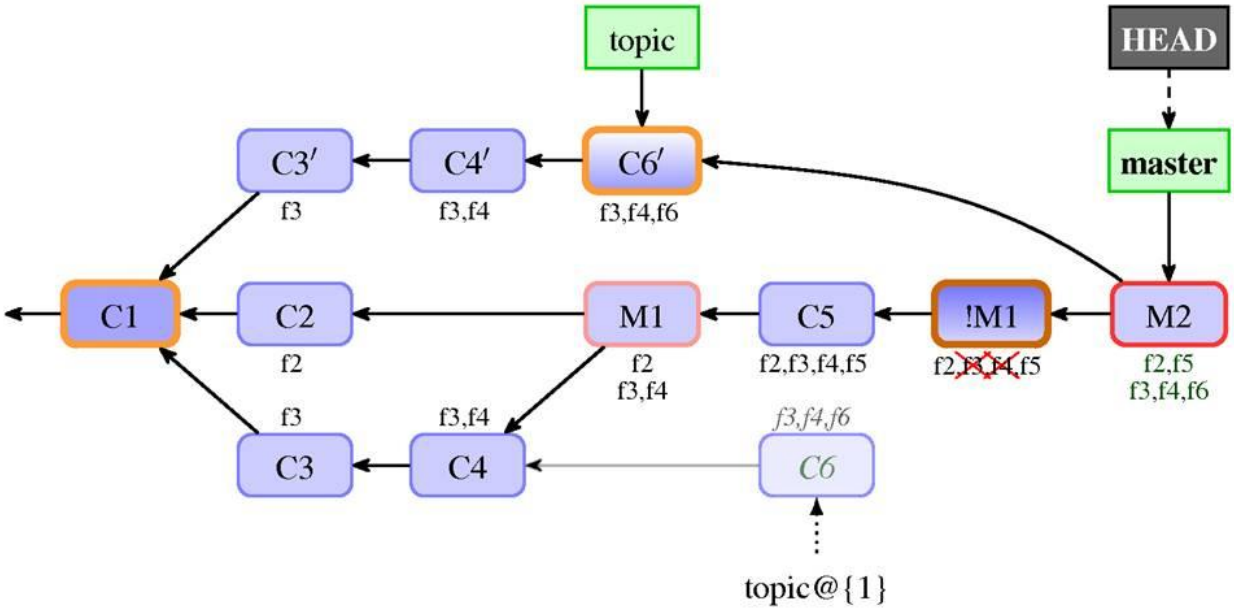


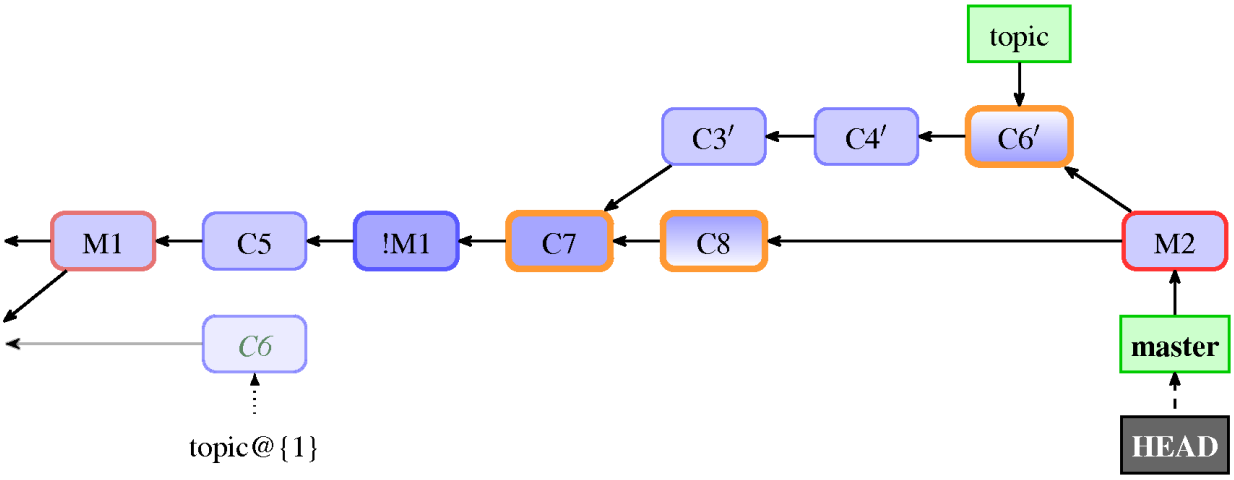

master
HEAD
C1
C2
C3
M
C4
C5
topic

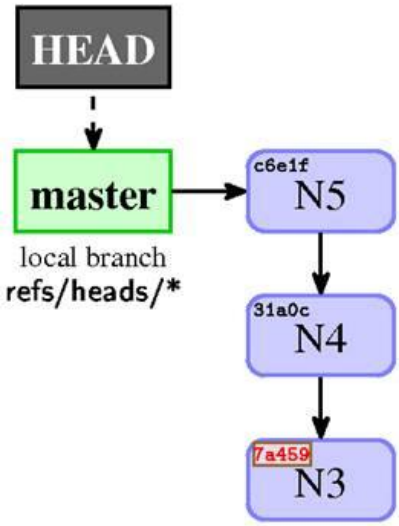

+ ch2
+ch3
+ch4
-ch3
-ch4
+ch2
C1
C2
M1
C5
!M1
C3
C4
git revert -m 1 M1
+ch3
+ch4

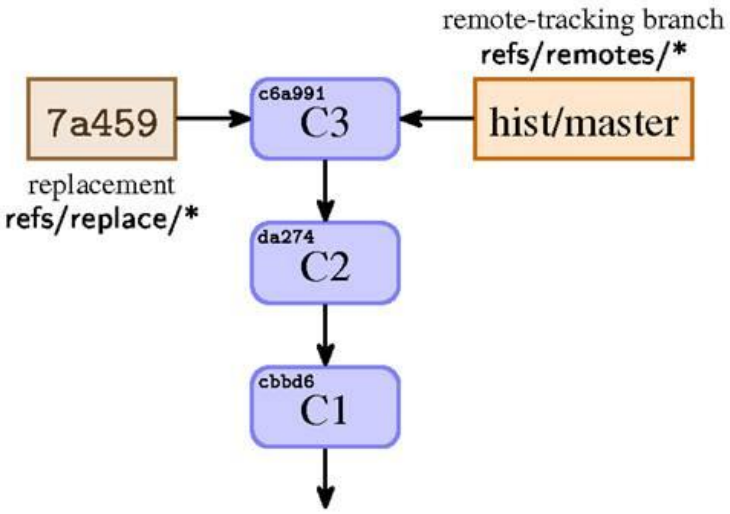

+ ch2
+ch3
+ch4
+ch5
-ch3
-ch4
+ ch2
+ ch5
+ch6
+ch2
C1
C2
M1
C5
!M1
M2
f2
f2
f3,f4
f2,f3,f4,f5
f2,f3,f4,f5
f2,f5
f6
f3
f3,f4
f3,f4,f6
C3
C4
C6
+ch3
+ch4
+ch6

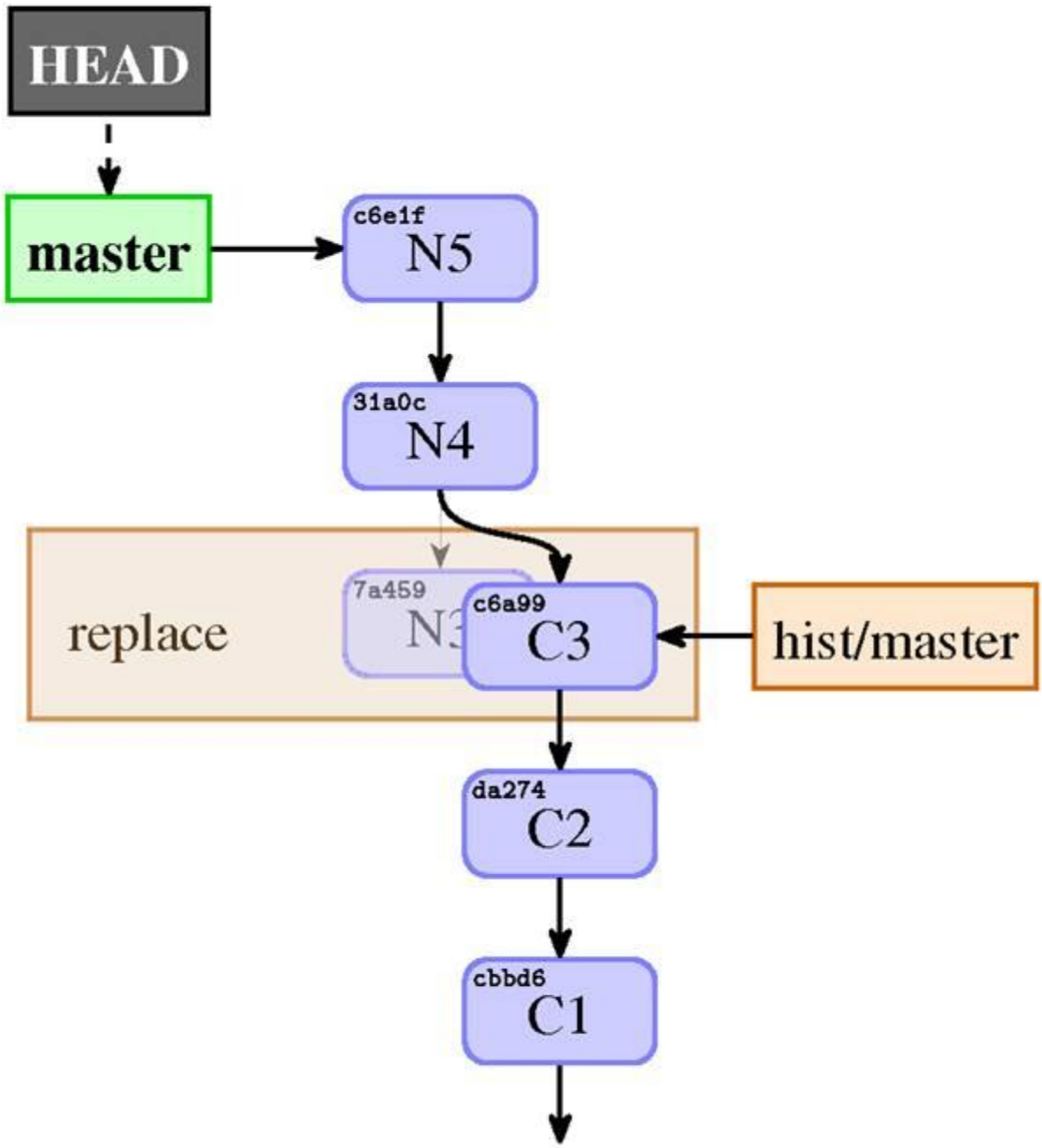

+ ch2
+ ch5
+ch3
+ch4
+ch6
+ch2
+ch3
+ch4
+ch5
-ch3
-ch4
+ch3
+ch4
C1
C2
M1
C5
!M1
!!M1
M2
f2
f2
f3,f4
f2,f3,f4,f5
f2,f3,f4,f5
f2,f5
f3,f4,f6
f3
f3,f4
f3,f4,f6
C3
C4
C6
+ch3
+ch4
+ch6


topic
HEAD
C3′
C4′
C6′
master
f3
f3,f4
f3,f4,f6
C1
C2
M1
C5
!M1
M2
f2
f2
f3,f4
f2,f3,f4,f5
f2,f3,f4,f5
f2,f5
f3,f4,f6
f3
f3,f4
f3,f4,f6
C3
C4
C6
topic@{1}

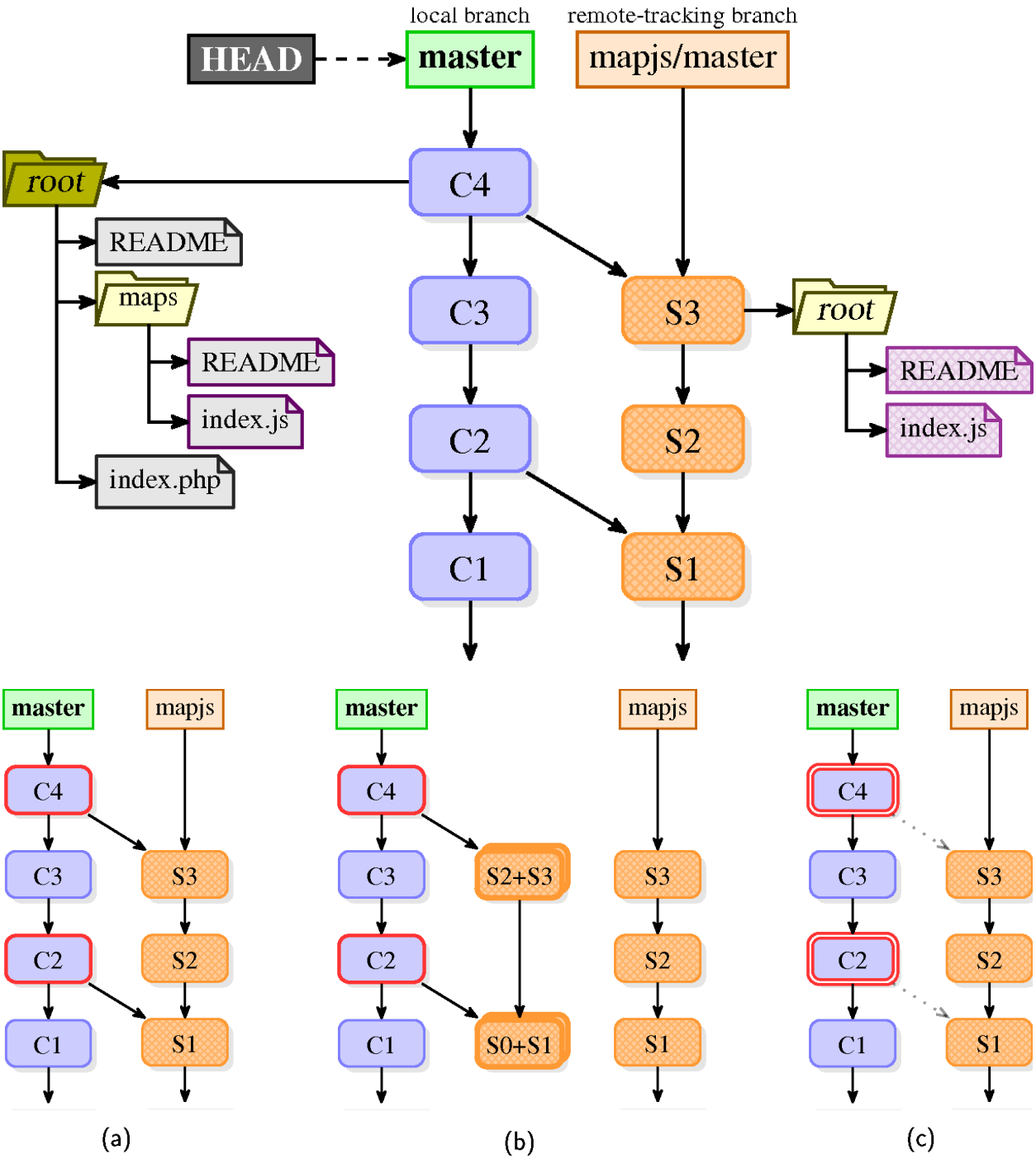

topic
C3′
C4′
C6′
M1
C5
!M1
C7
C8
M2
C6
master
topic@{1}
HEAD

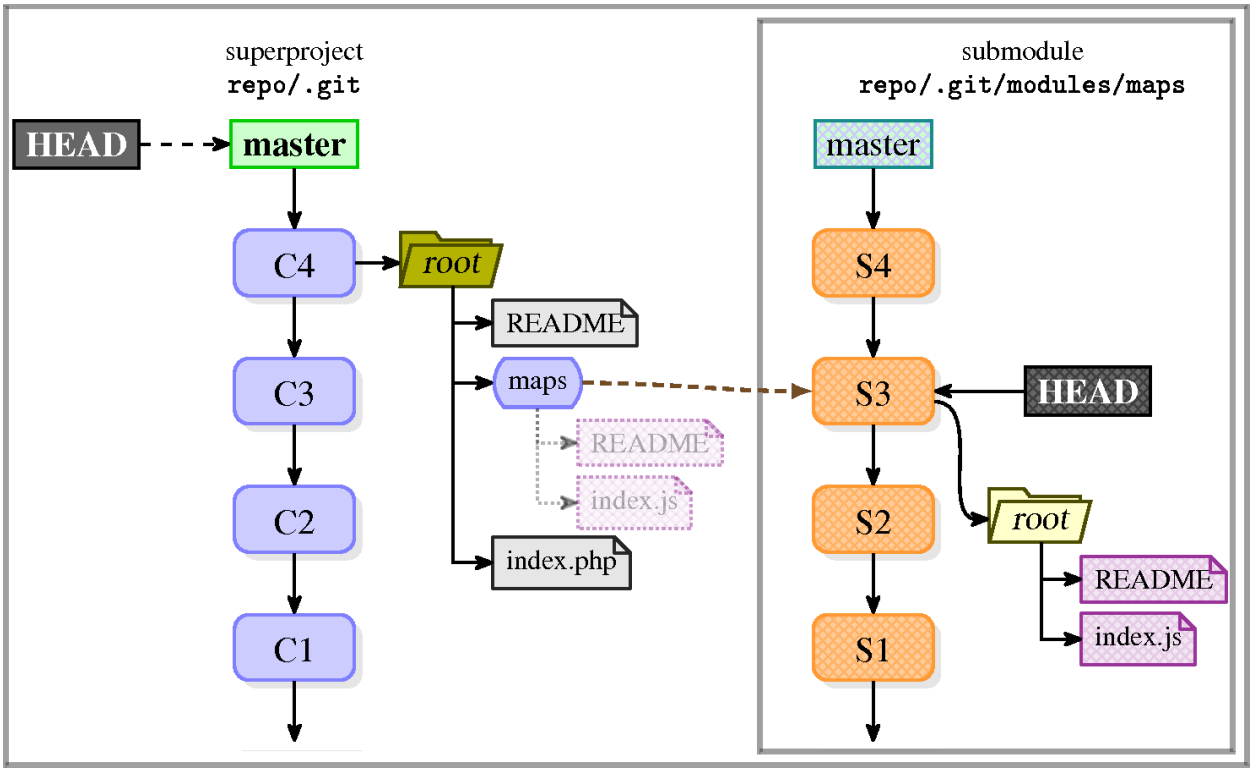

HEAD
master
local branch
refs/heads/*
c6e1f
N5
31a0c
N4
7a459
N3


remote-tracking branch
refs/remotes/*
7a459
c6a991
C3
hist/master
replacement
refs/replace/*
da274
C2
cbbd6
C1


HEAD
master
c6e1f
N5
31a0c
N4
replace
7a459
N3
c6a99
C3
hist/master
da274
C2
cbbd6
C1

Chapter 9: Managing Subprojects – Building a Living Framework




superproject
repo/.git
HEAD
master
C4
C3
C2
C1
root
README
maps
README
index.js
index.php
submodule
repo/.git/modules/maps
master
S4
S3
HEAD
S2
S1
root
README
index.js