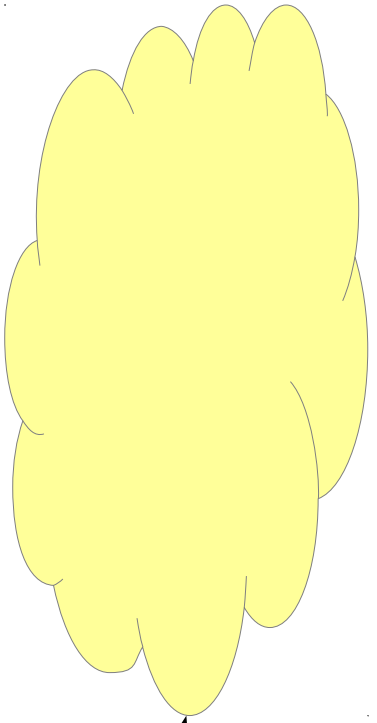
Some typical Git workflows

Programming in Java
Birkbeck, Univ. of London
(cc-by)

the programmer



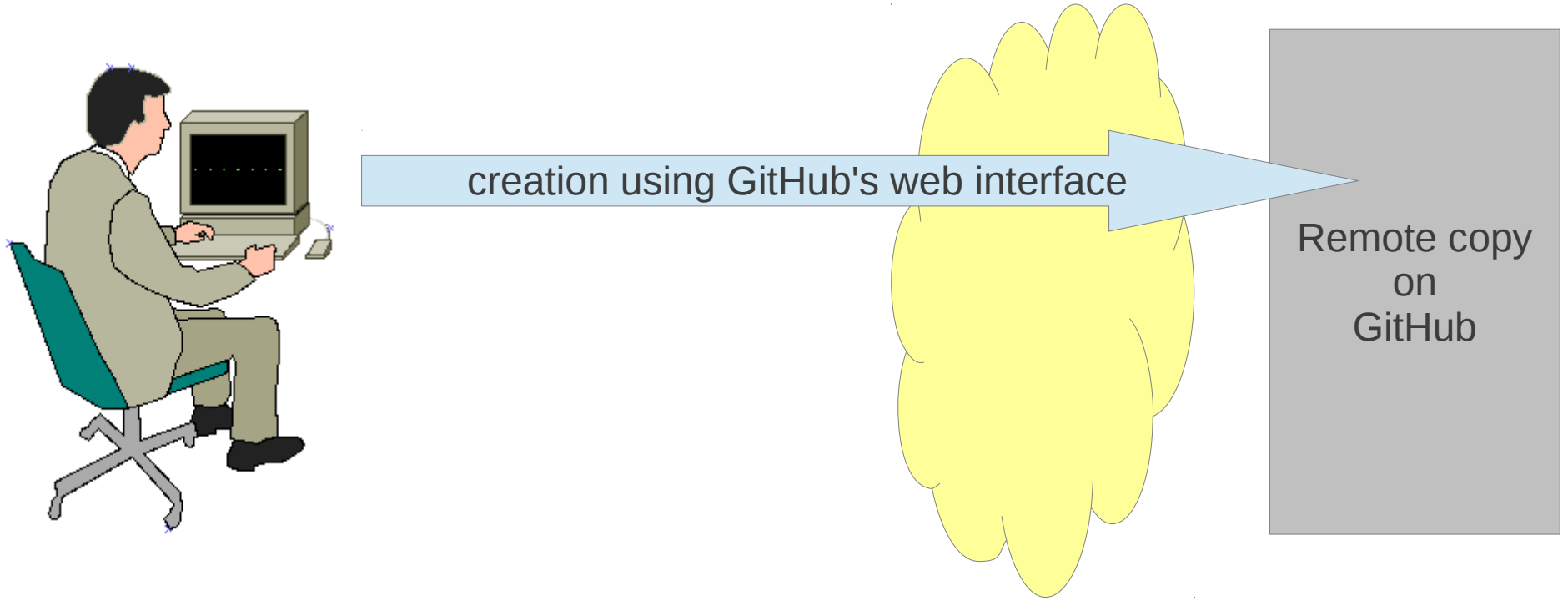
the Internet

Remote copy
on
GitHub

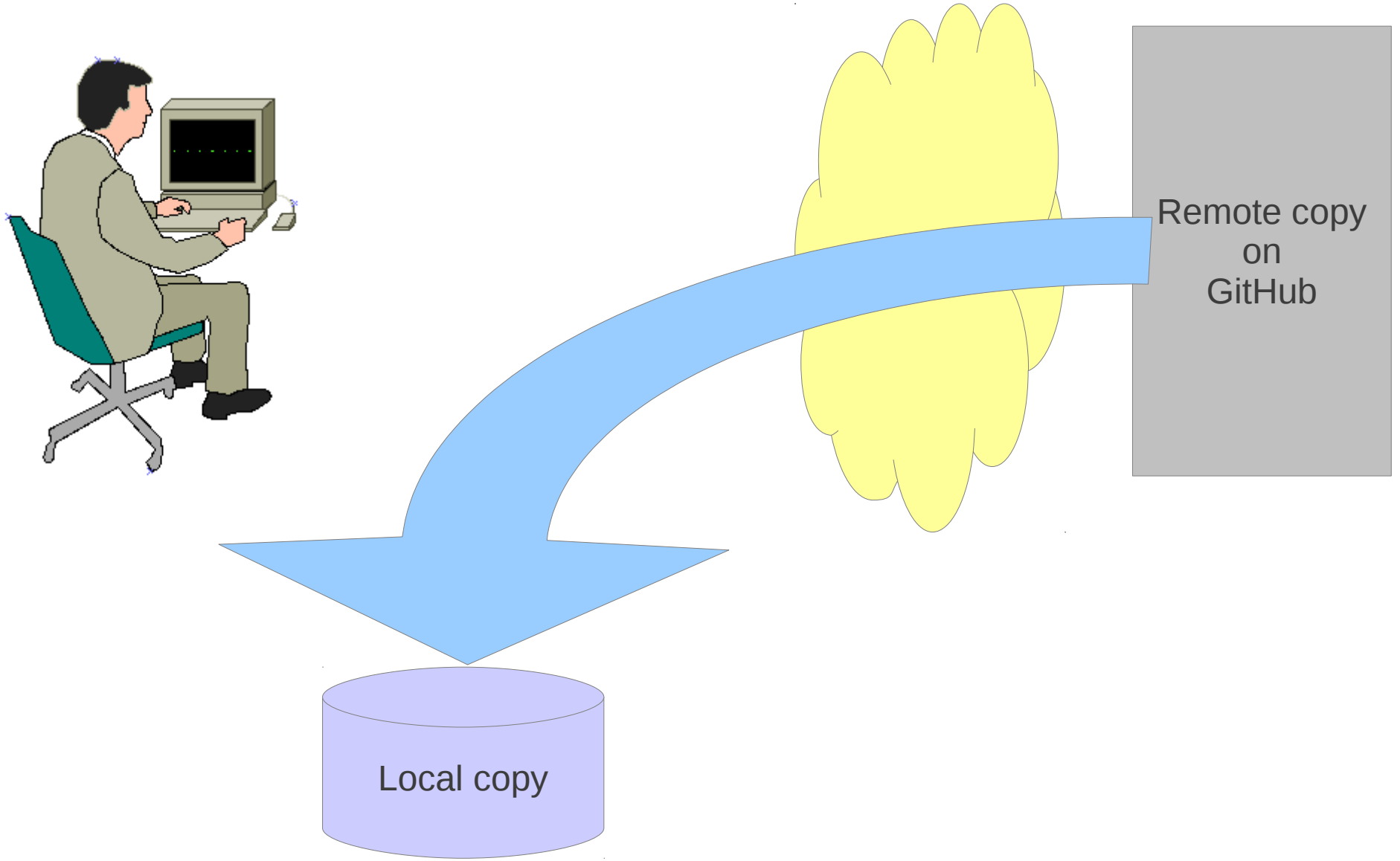
GitHub (or another
similar online service)

Case 1:
Starting a new project

Creation of a new repository



Cloning to a local copy



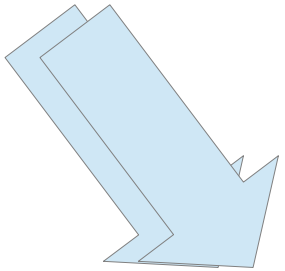
Commit changes to local copy

(happens almost immediately)

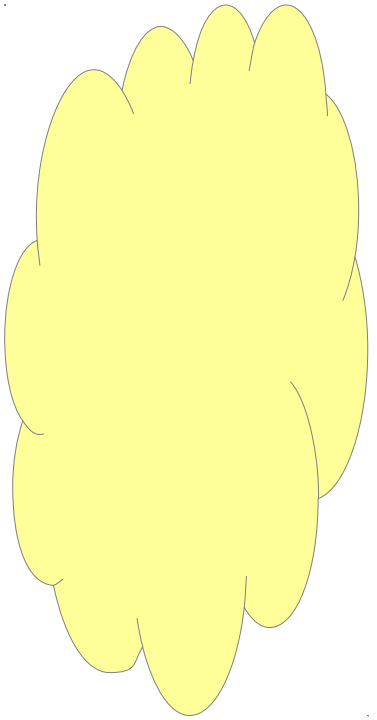
Local copy

Remote copy on GitHub

Commit changes to local copy

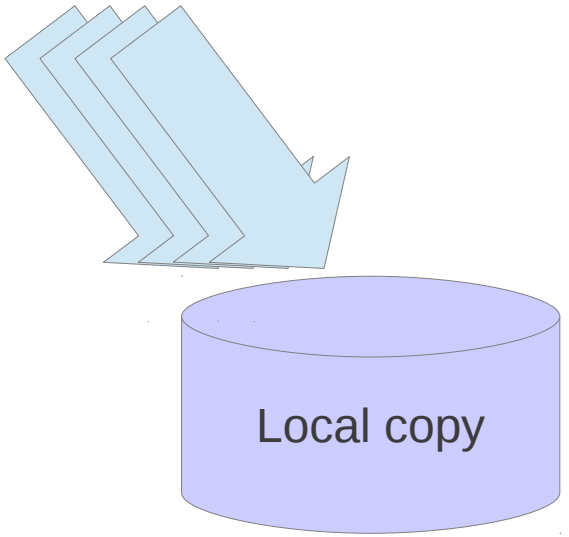


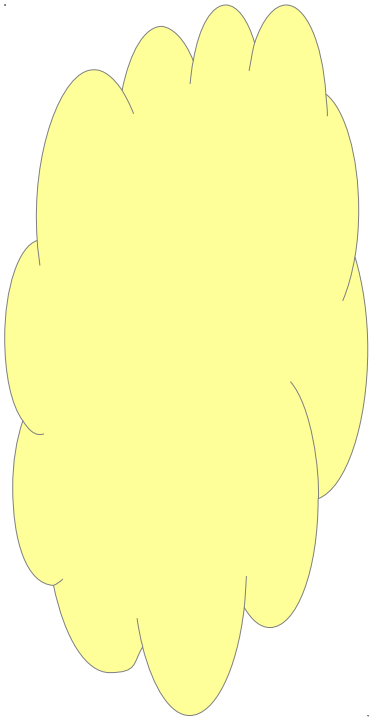
Local copy



Remote copy
on
GitHub

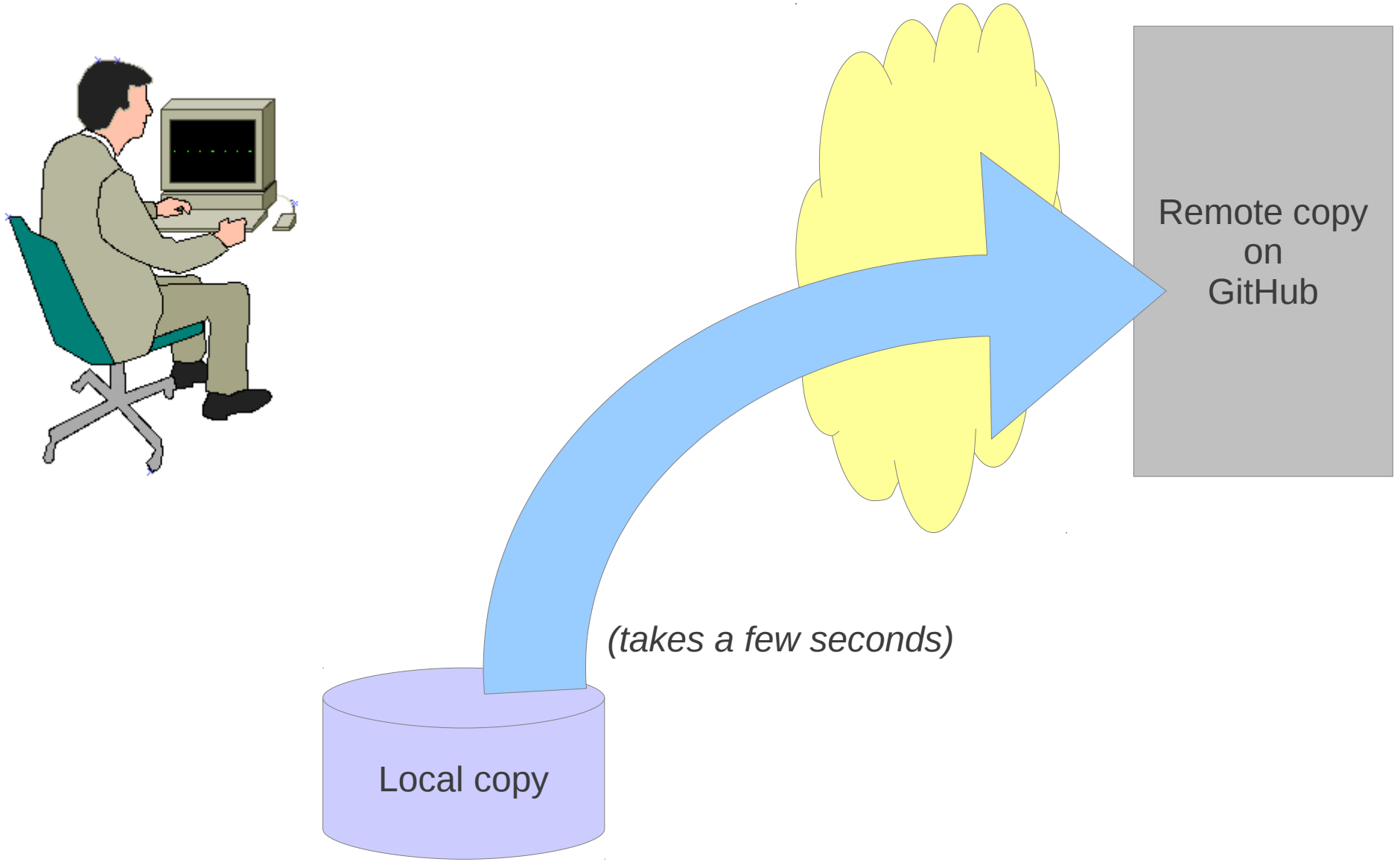
Commit changes to local copy



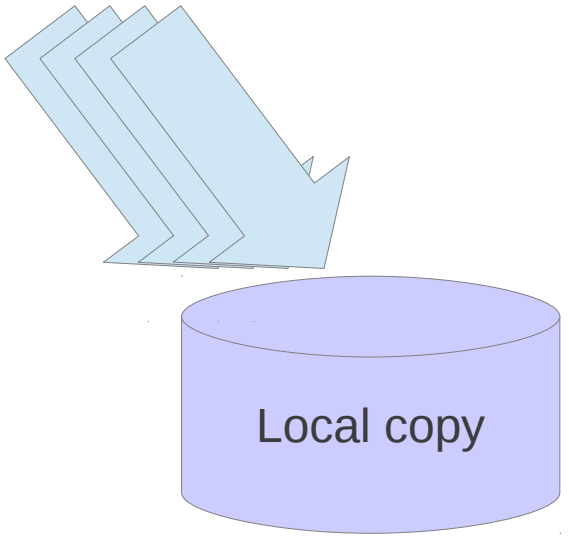


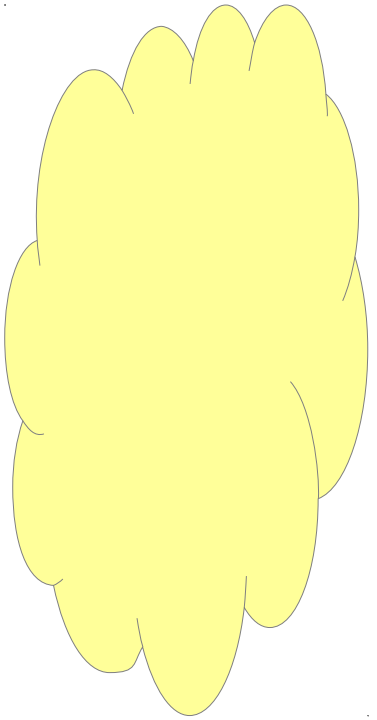
Remote copy
on
GitHub

Push changes to remote copy



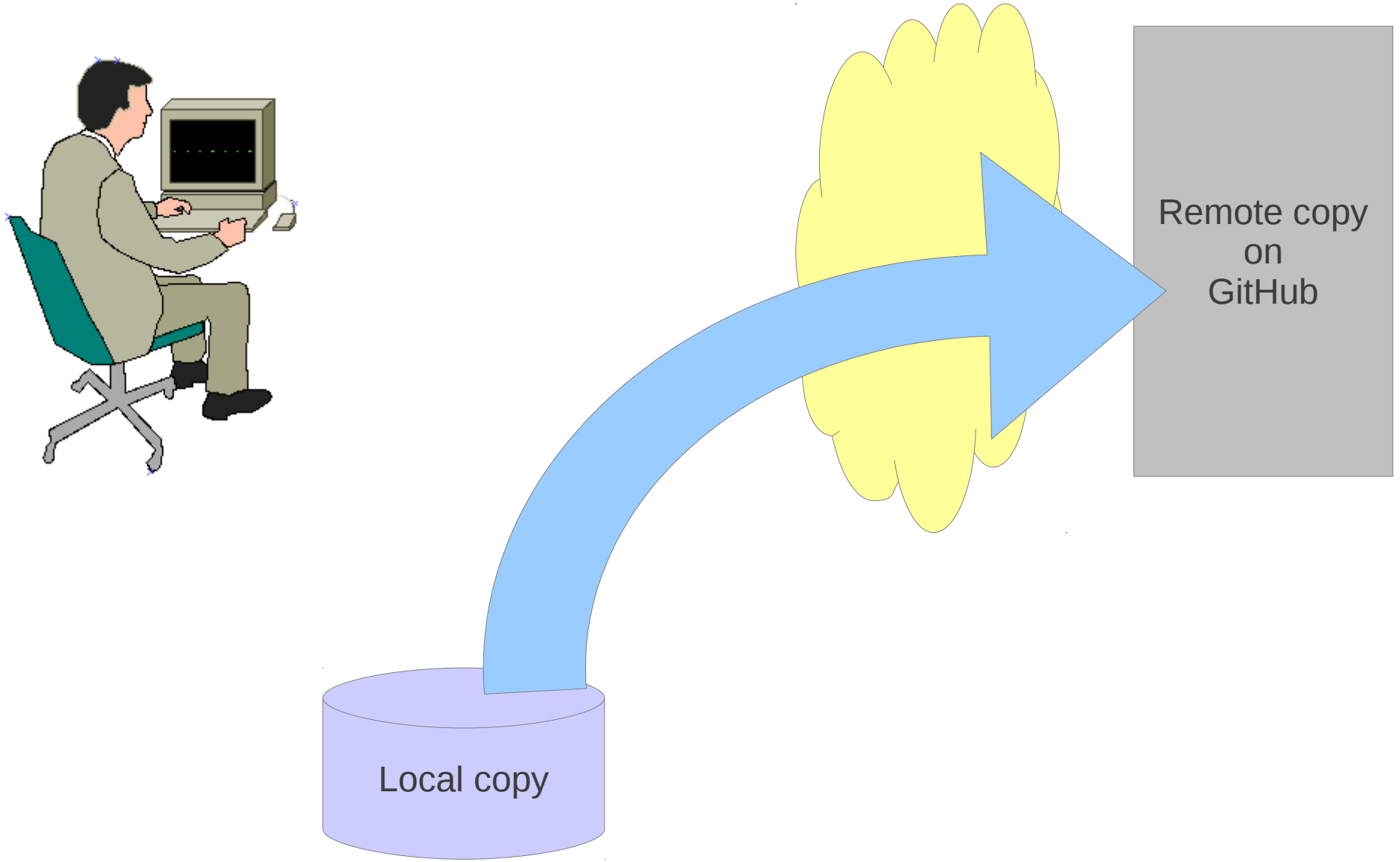
Commit more changes





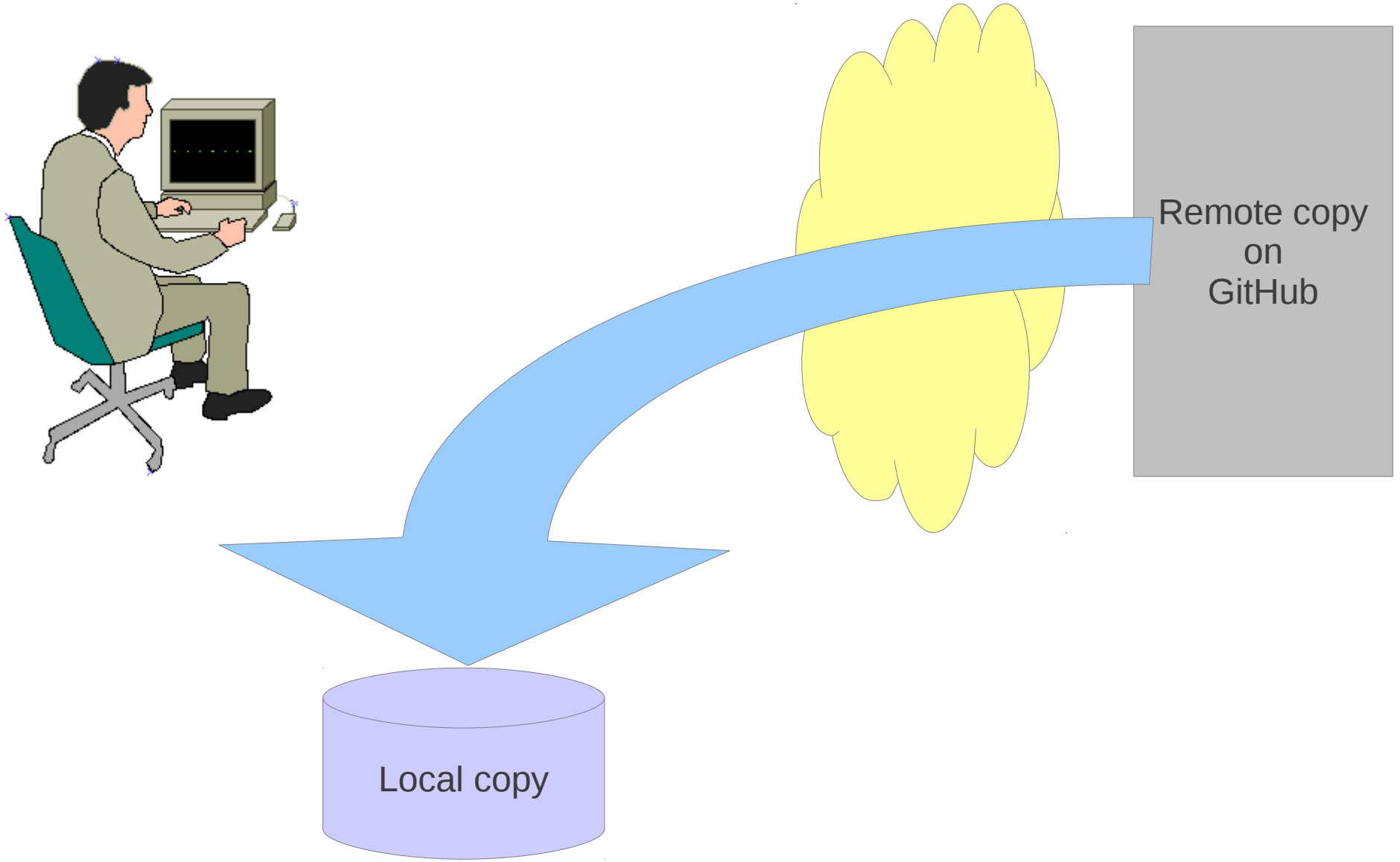
Remote copy
on
GitHub

Push new changes

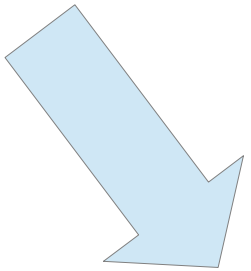


Case 2:
Contributing to an existing project where you can push changes (because it is yours)

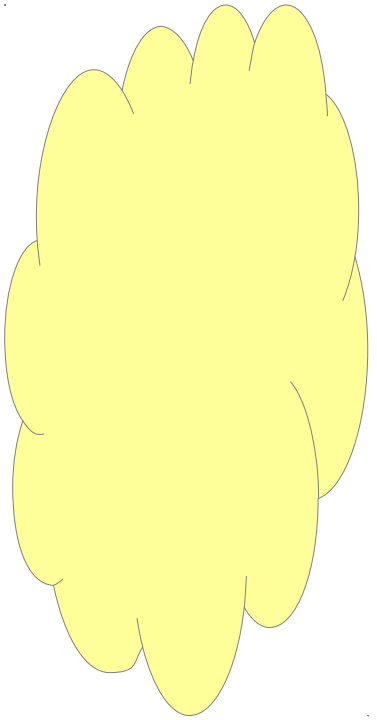
Cloning repository to a local copy



Commit changes to local copy

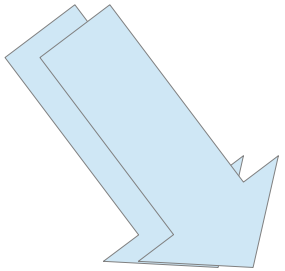


Local copy

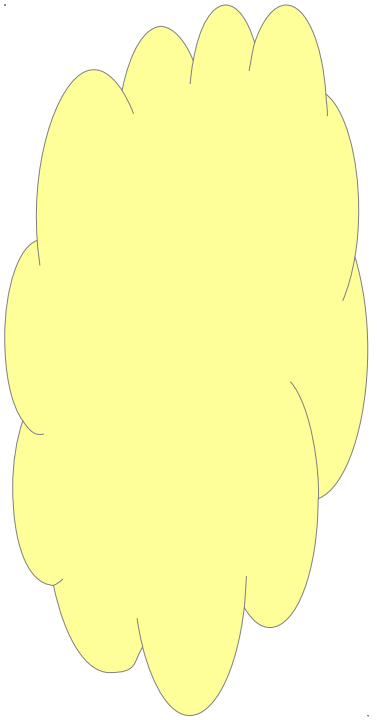


Remote copy
on
GitHub

Commit changes to local copy

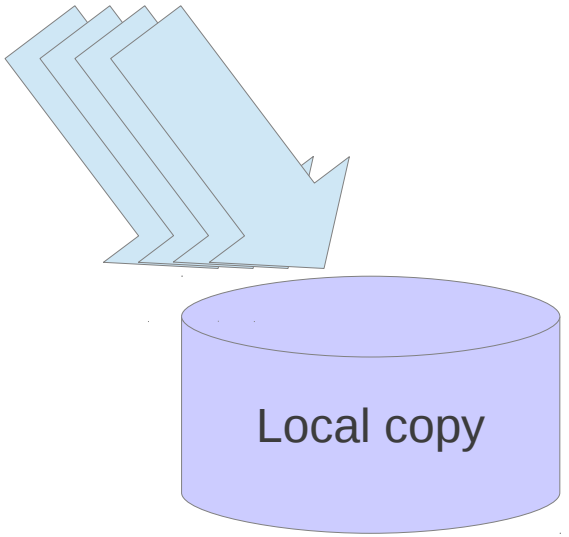


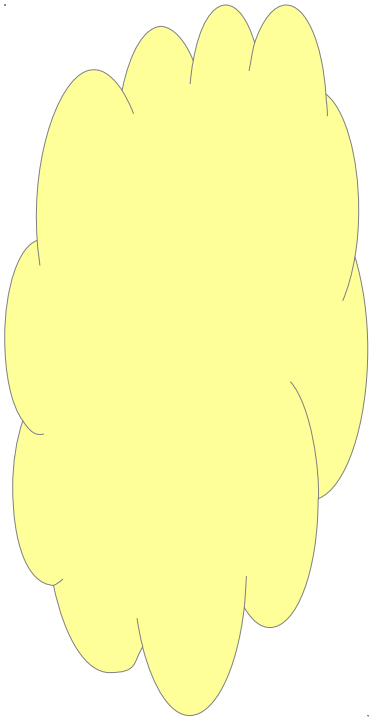
Local copy



Remote copy
on
GitHub

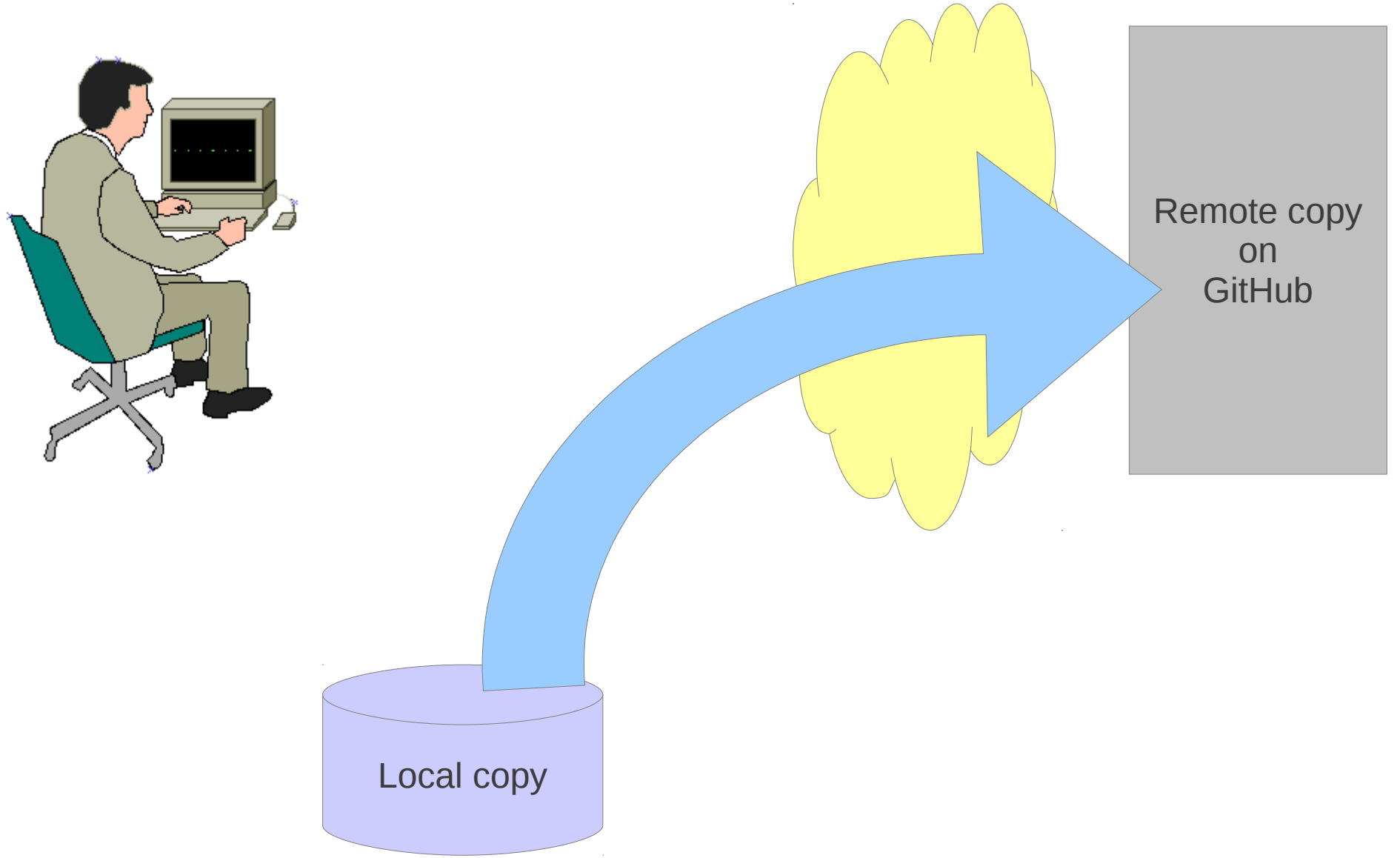
Commit changes to local copy





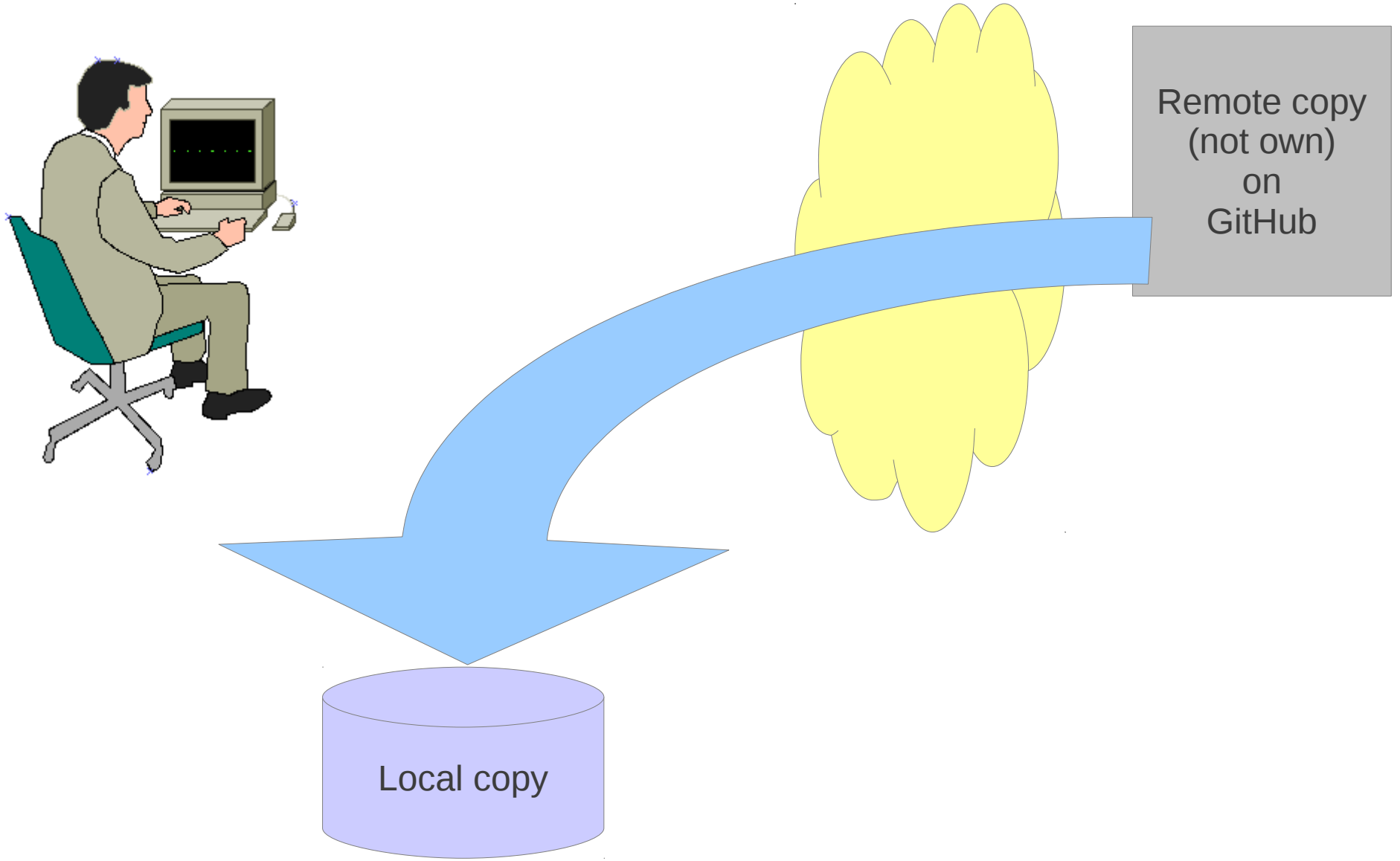
Remote copy
on
GitHub

Push changes to remote copy

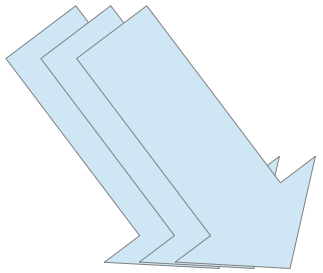


Case 3:
Contributing to an existing project where you **cannot** push changes

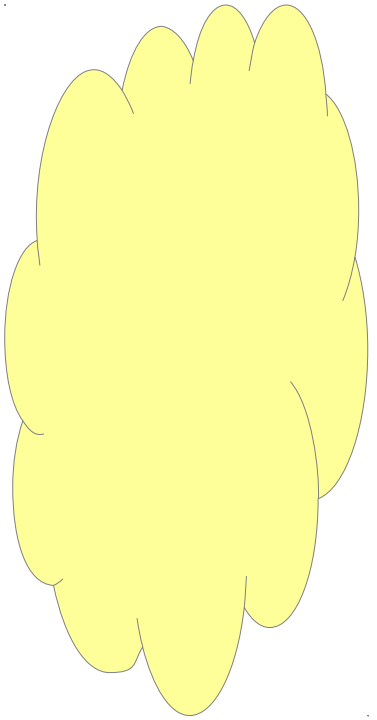
Cloning to a local copy



Commit changes

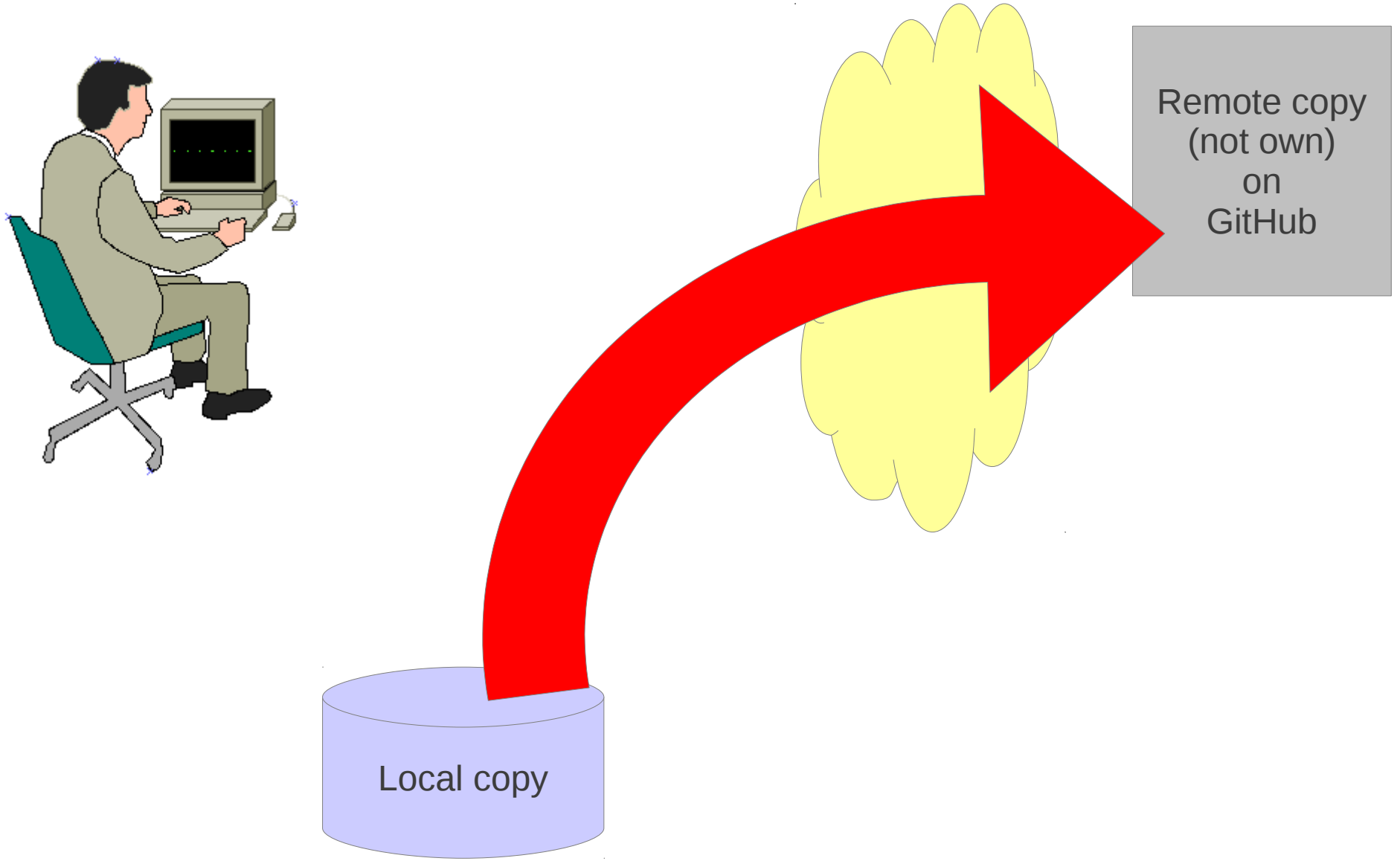


Local copy

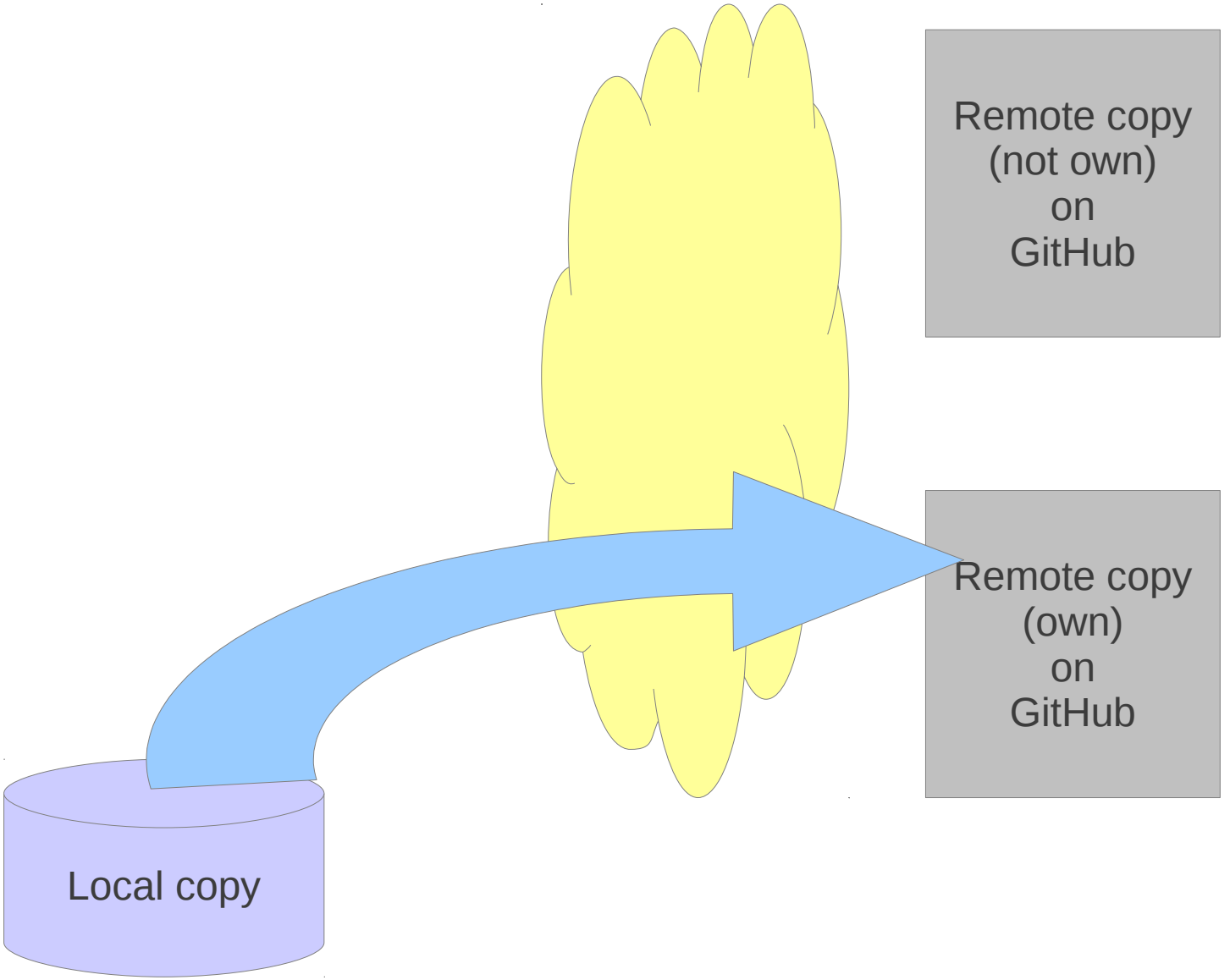


Remote copy
(not own)
on
GitHub

Cannot push without permission



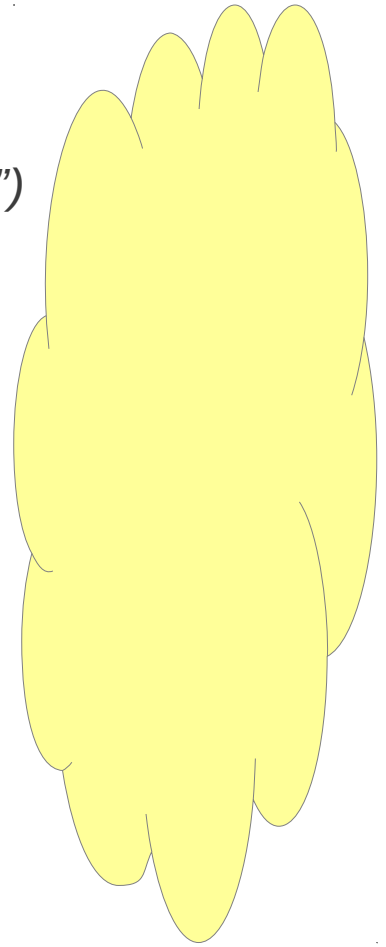
Push changes to own copy



Contact owner

"I have made this change... check it out!"

(by email, or through GitHub's "pull request")

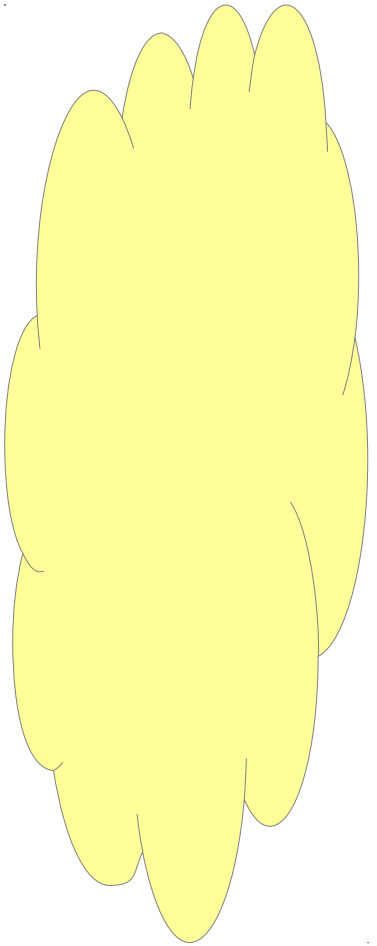


Remote copy (not own) on GitHub

Remote copy (own) on GitHub

Local copy

If interested, owner can pull changes



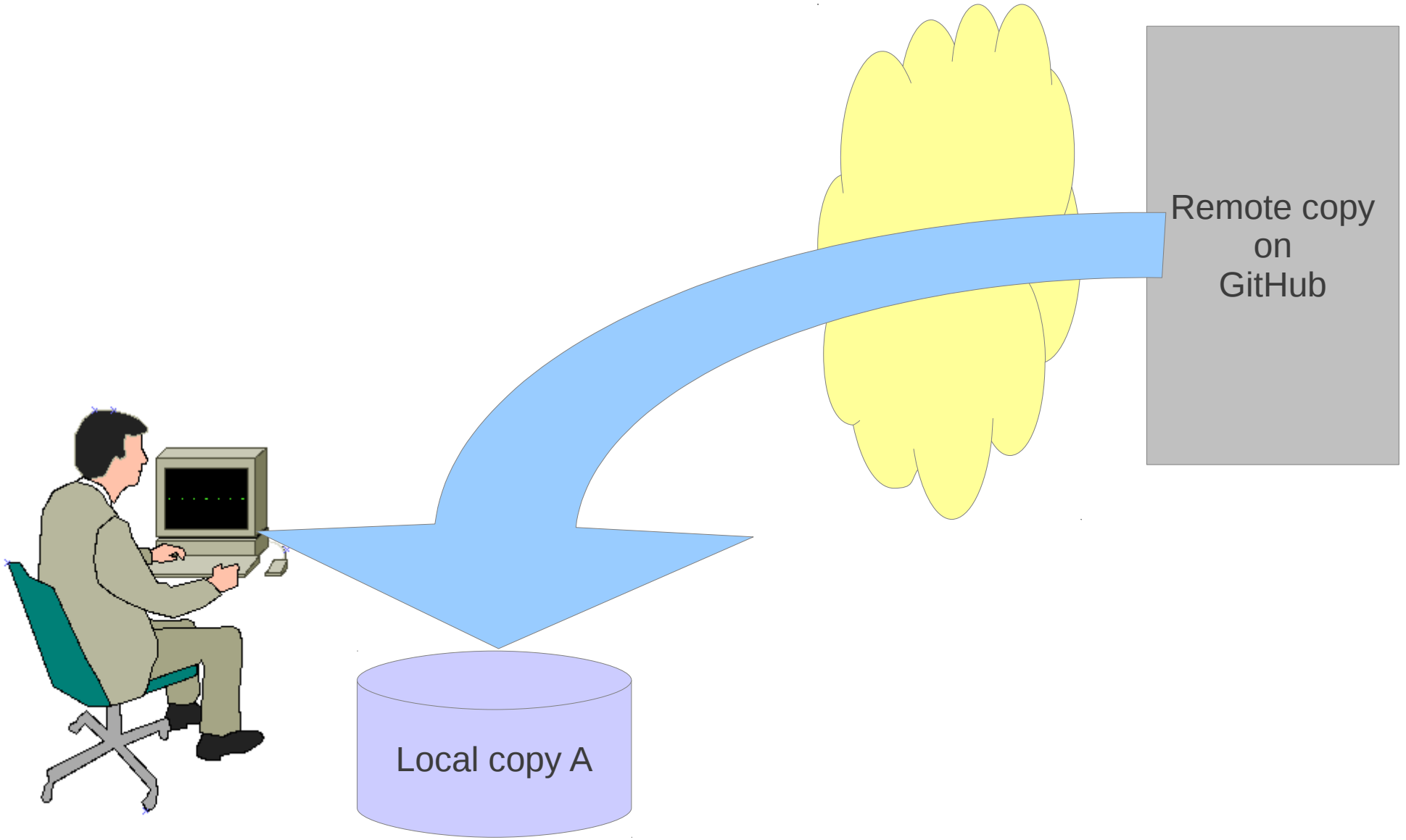
Remote copy
(not own)
on
GitHub

Remote copy
(own)
on
GitHub

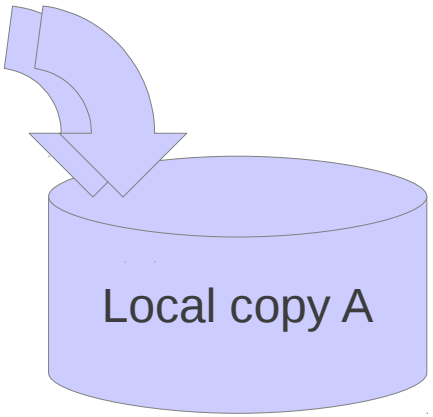
Local copy

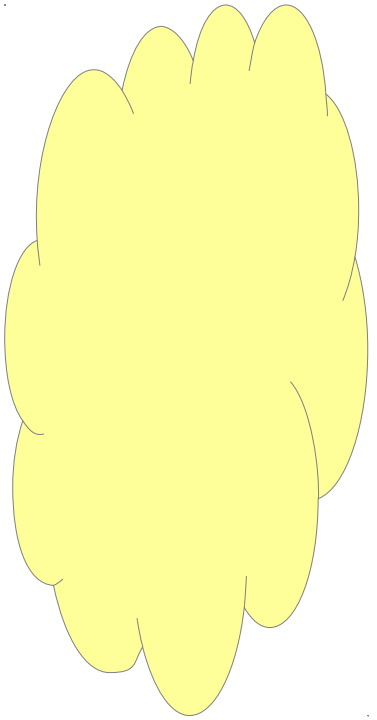
Case 4:
Contributing to an existing project from two different locations

Cloning repository to local copy A



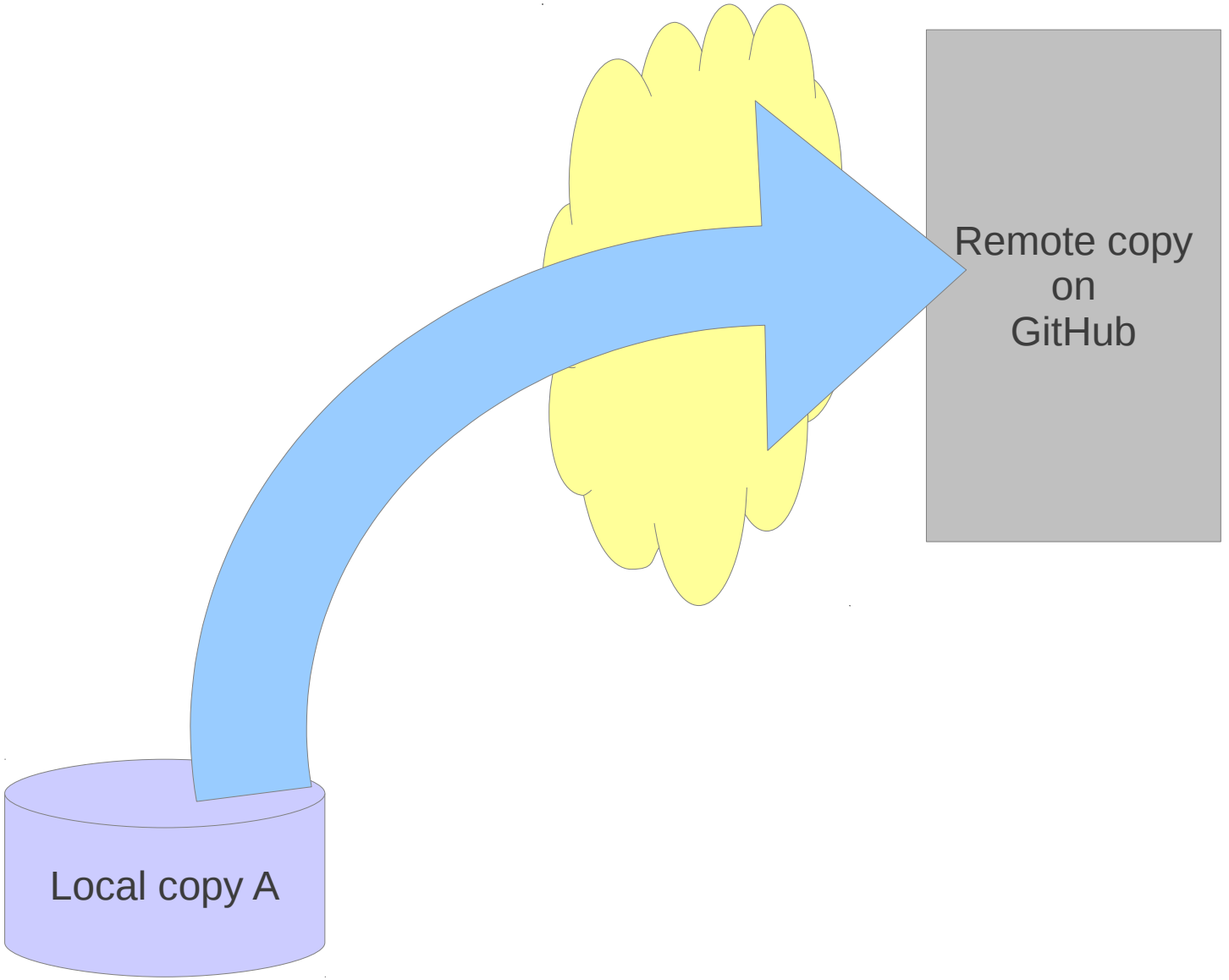
Commit



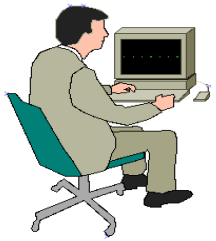


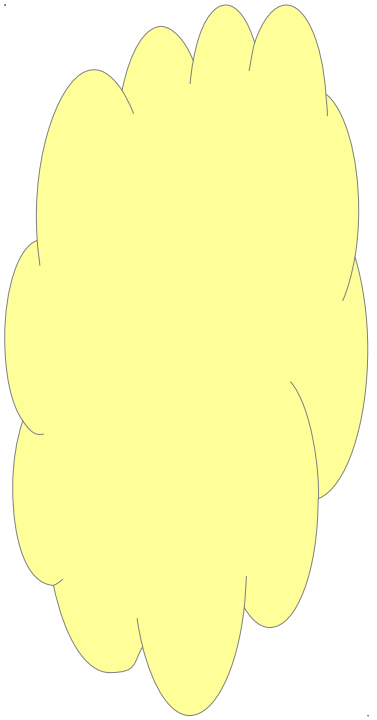
Remote copy
on
GitHub

Push



Change location

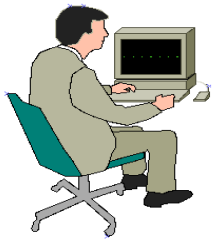




Remote copy
on
GitHub

Local copy A

Clone

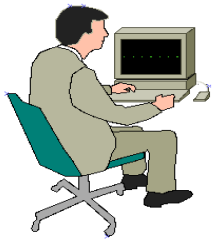


Local copy B

Remote copy
on
GitHub

Local copy A

Commit

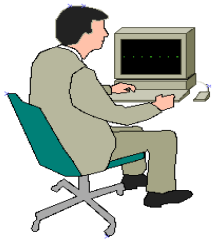


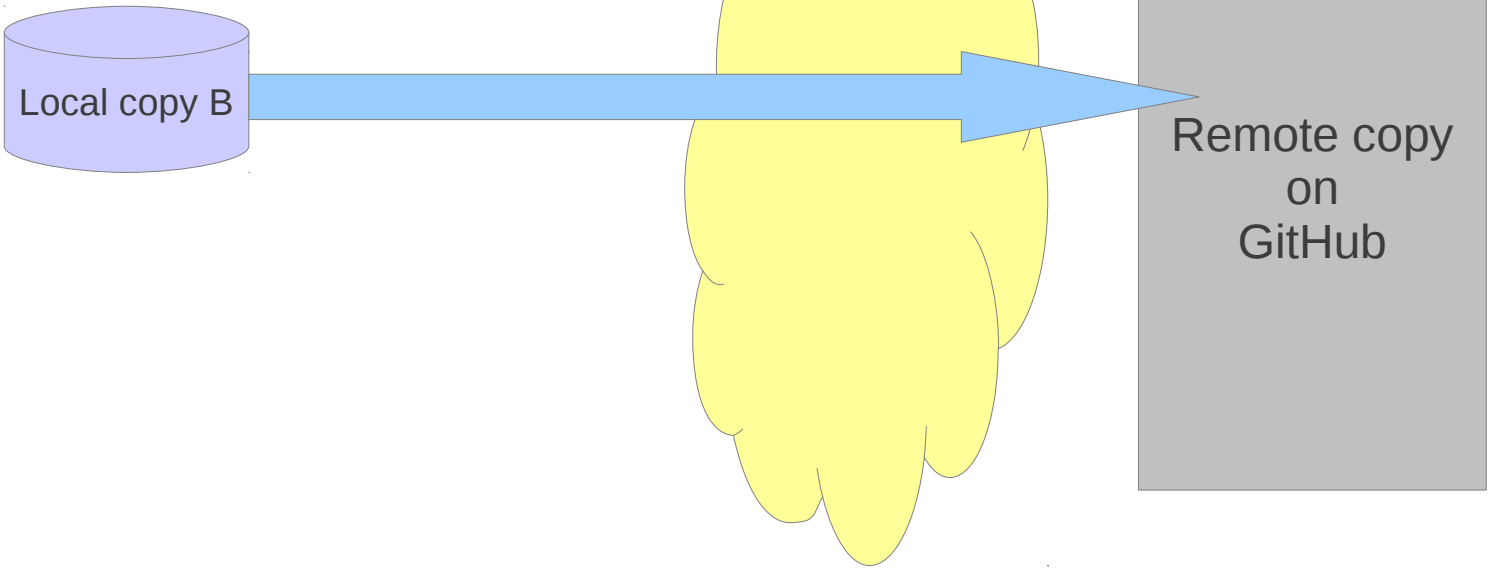
Local copy B

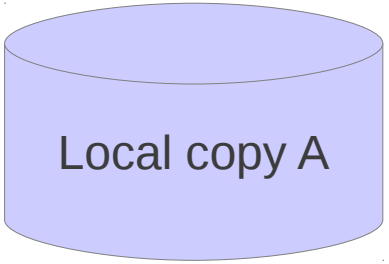
Remote copy
on
GitHub

Local copy A

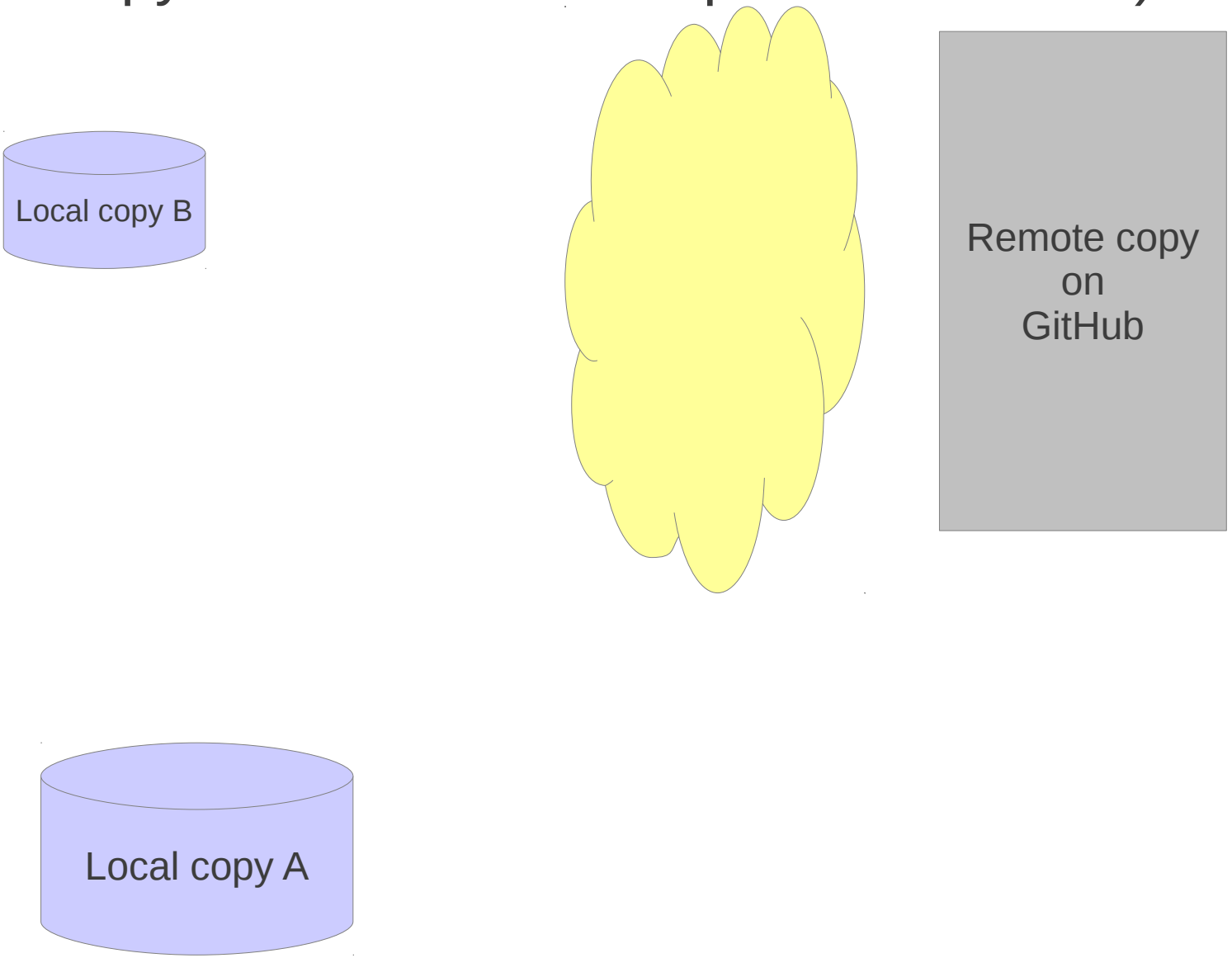
Push



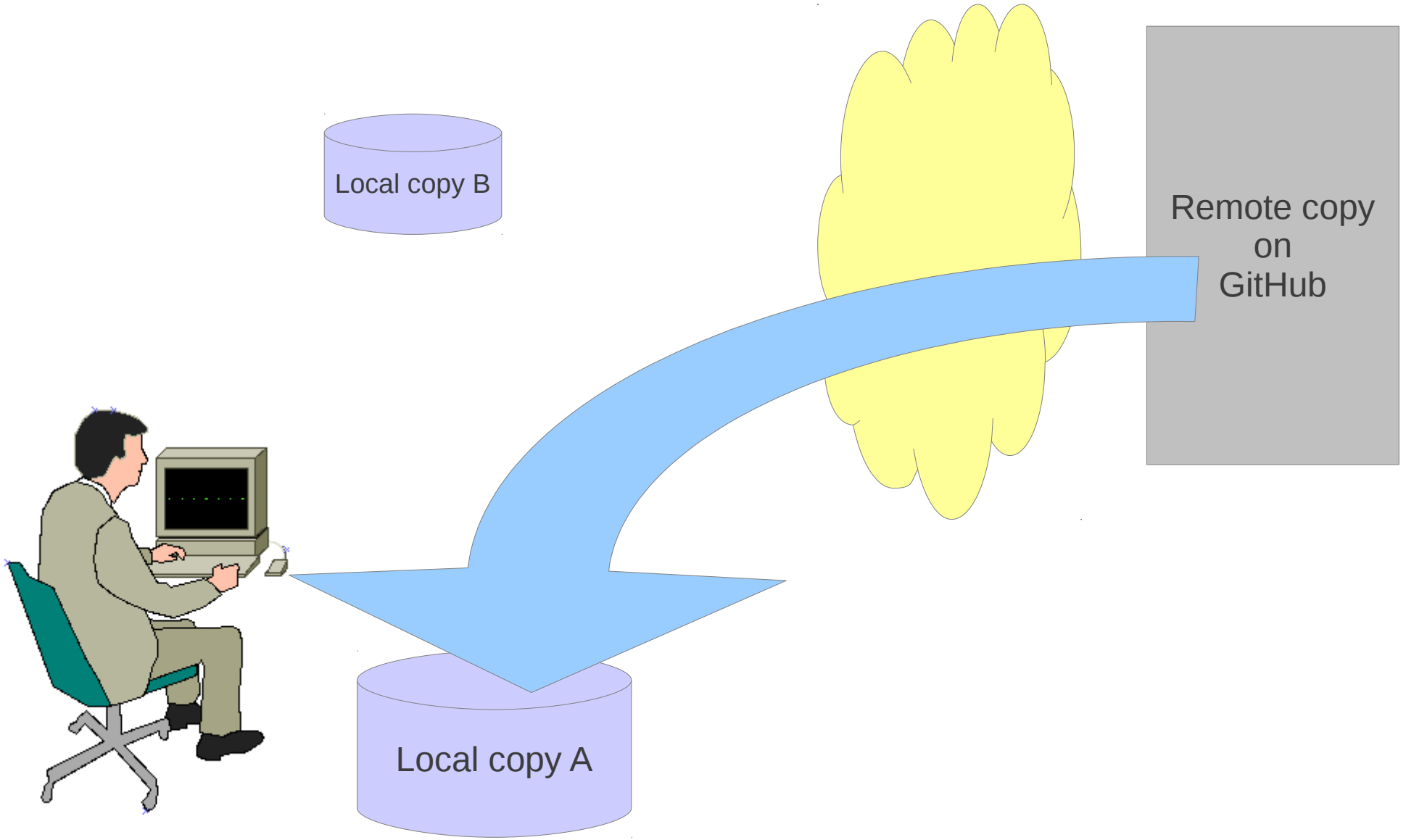




At this point,
copy B is the most modern one
and copy A is outdated
(the remote copy in GitHub is also up-to-date with B)



Pull



Now all copies are up-to-date