GIT

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Outline

- What Is GIT and Why ?
- How We Work With Git?
- GIT repository
- Installation
- GIT commands
- Github

What Is GIT and Why ?

Tom

Kim

Henry

1

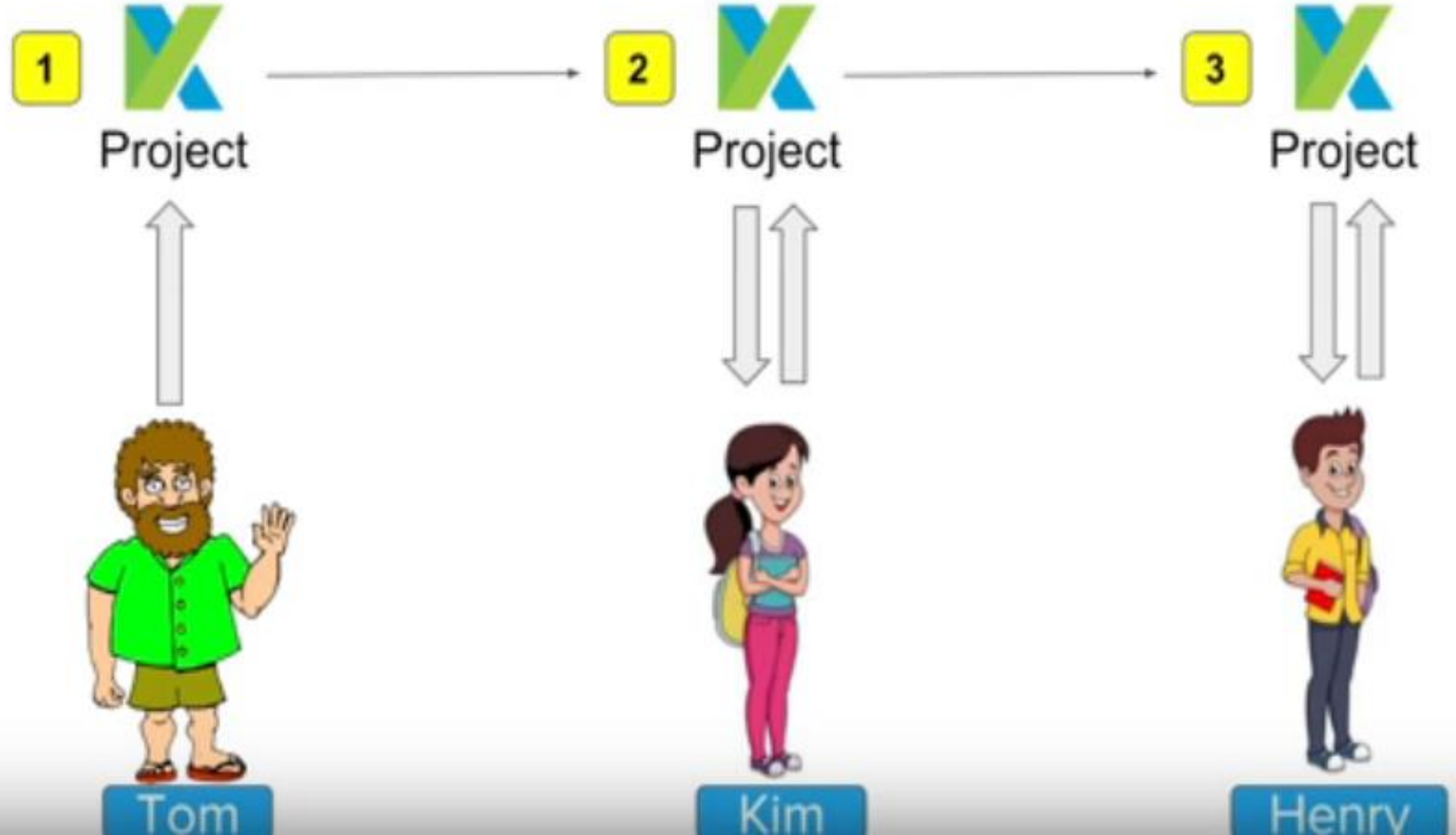
Project

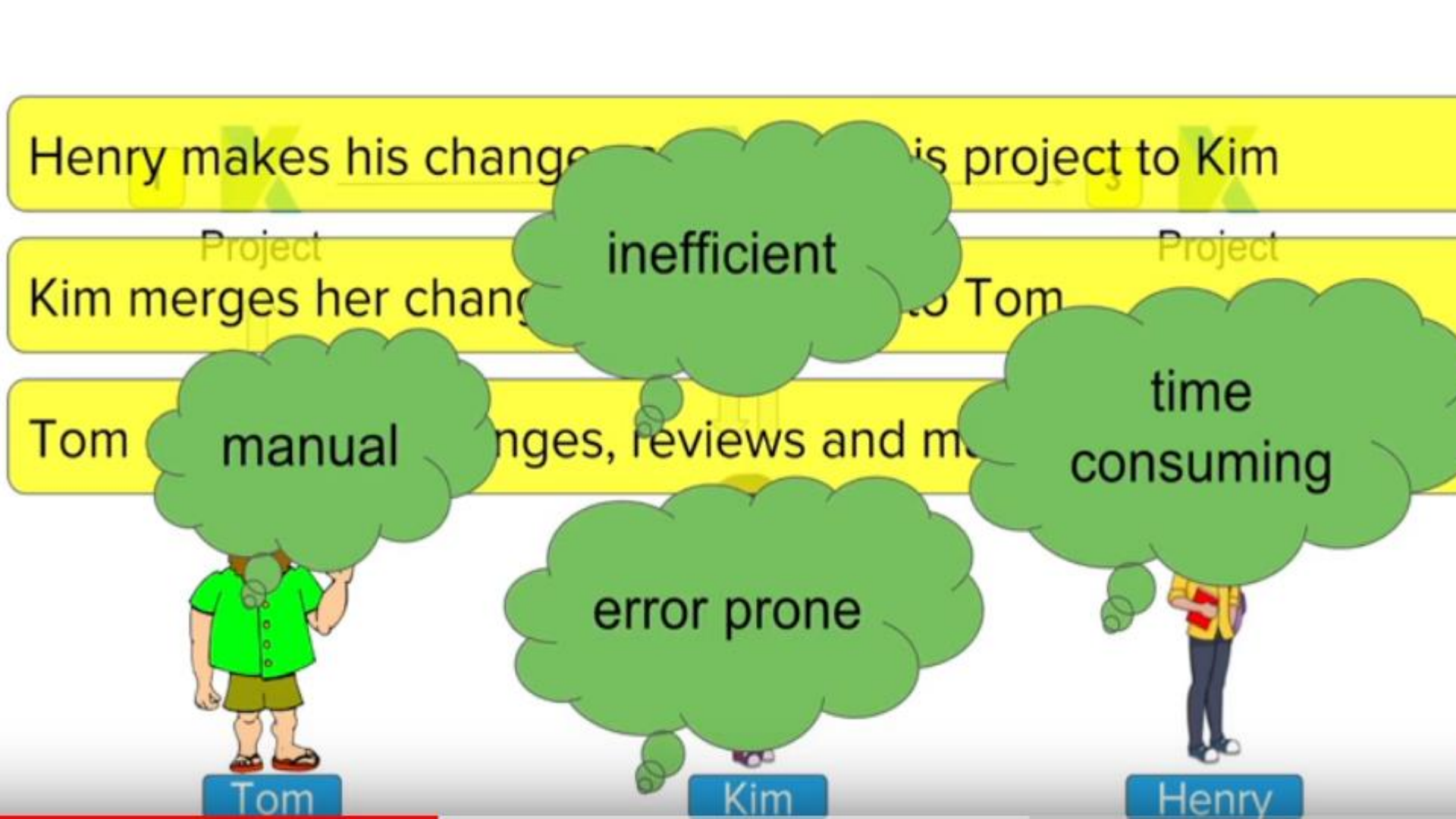
Project

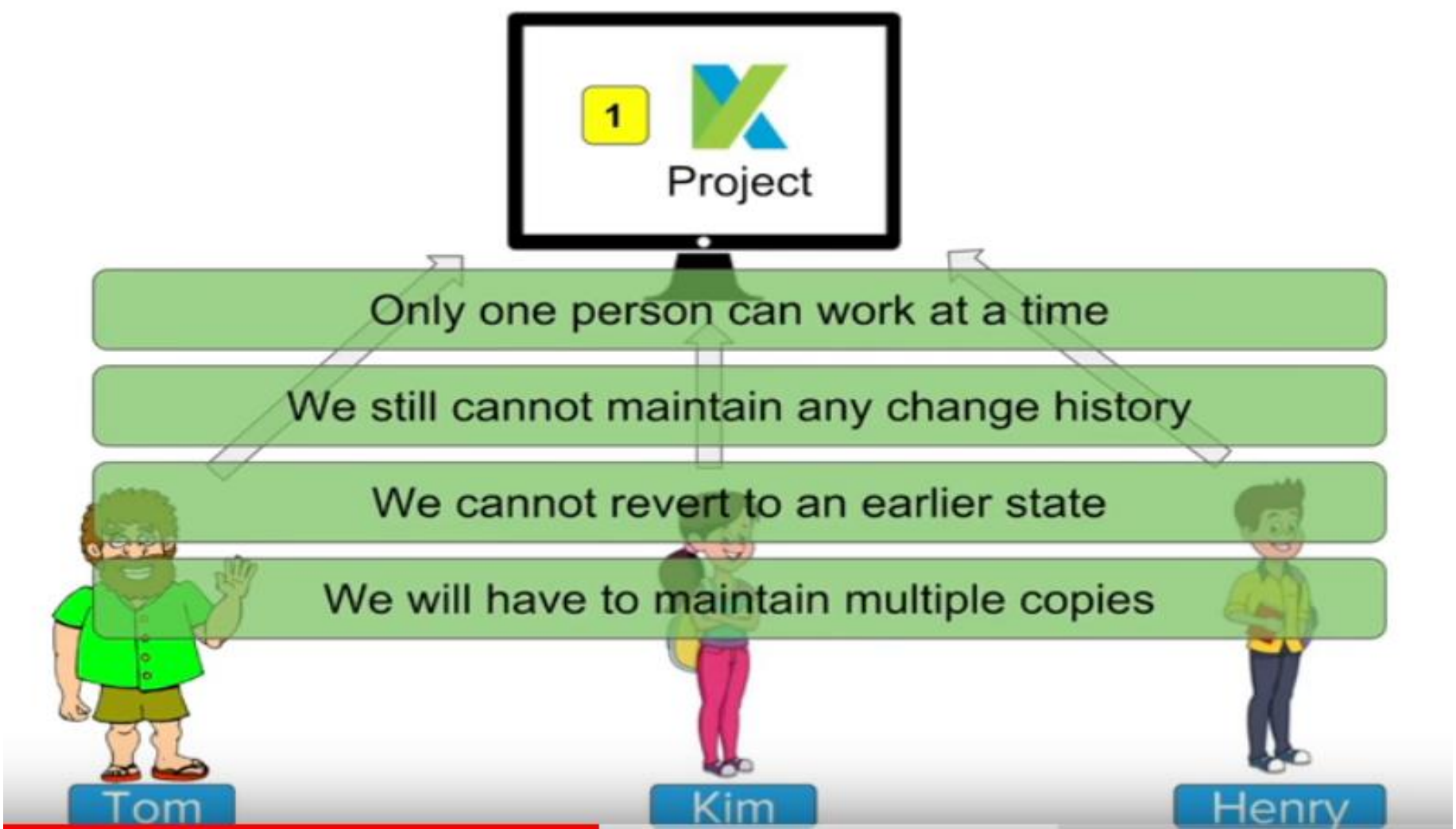
Tom

Kim

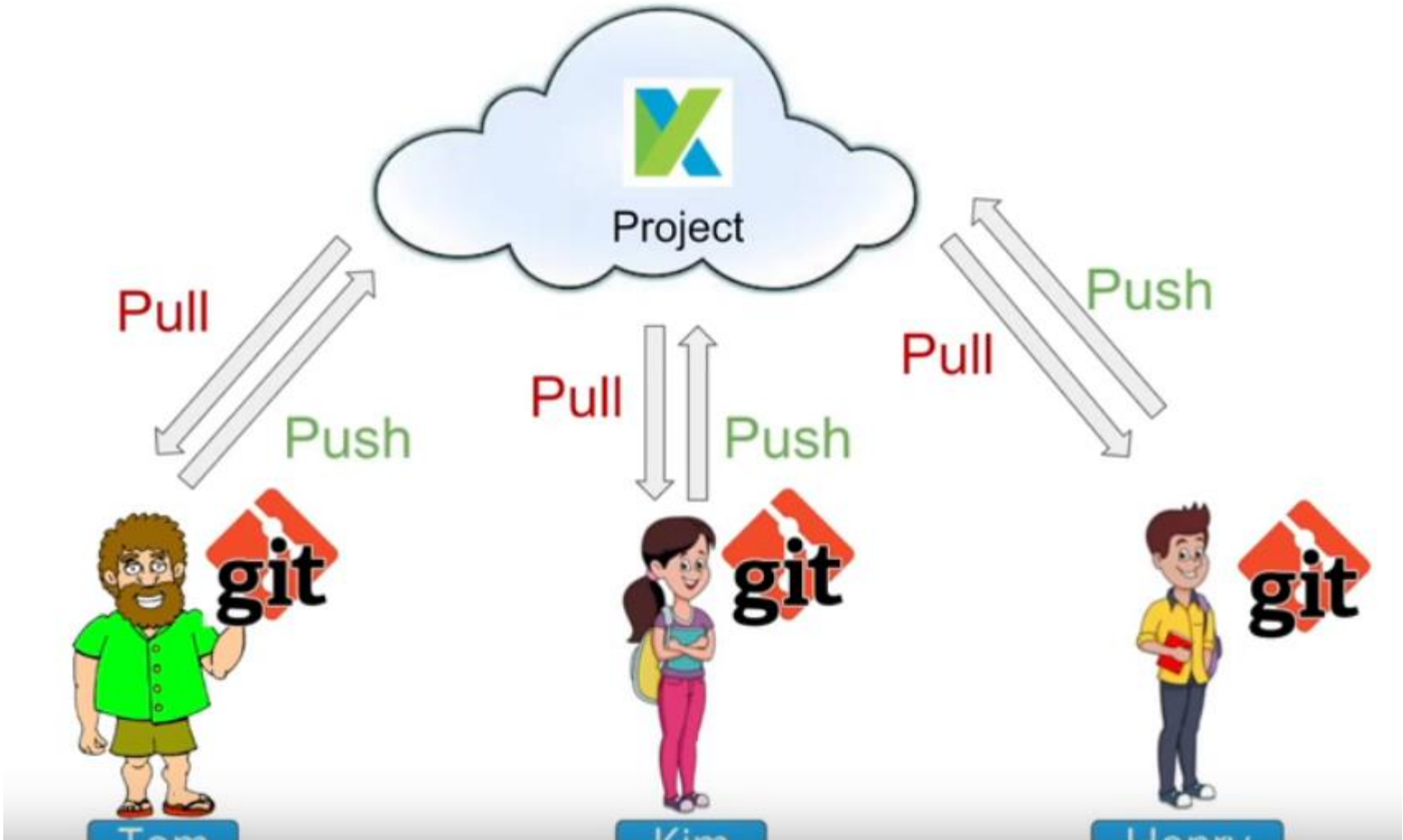
Henry


1
Project
2
Project
3
Project
Tom
Kim
Henry


Henry makes his change
is project to Kim
Project
Project
inefficient
Kim merges her chang
Tom
Tom
nges, reviews and m
manual
time
consuming
error prone
Tom
Kim
Henry


1
Project
Only one person can work at a time
We still cannot maintain any change history
We cannot revert to an earlier state
We will have to maintain multiple copies
Tom
Kim
Henry


git


Project
Pull
Push
Pull
Push
Pull
Push
git
git
git

GIT Is

- *Open source project*
- *A command line utility*
- *A distributed version control system*

How We Work With Git?

Step 2

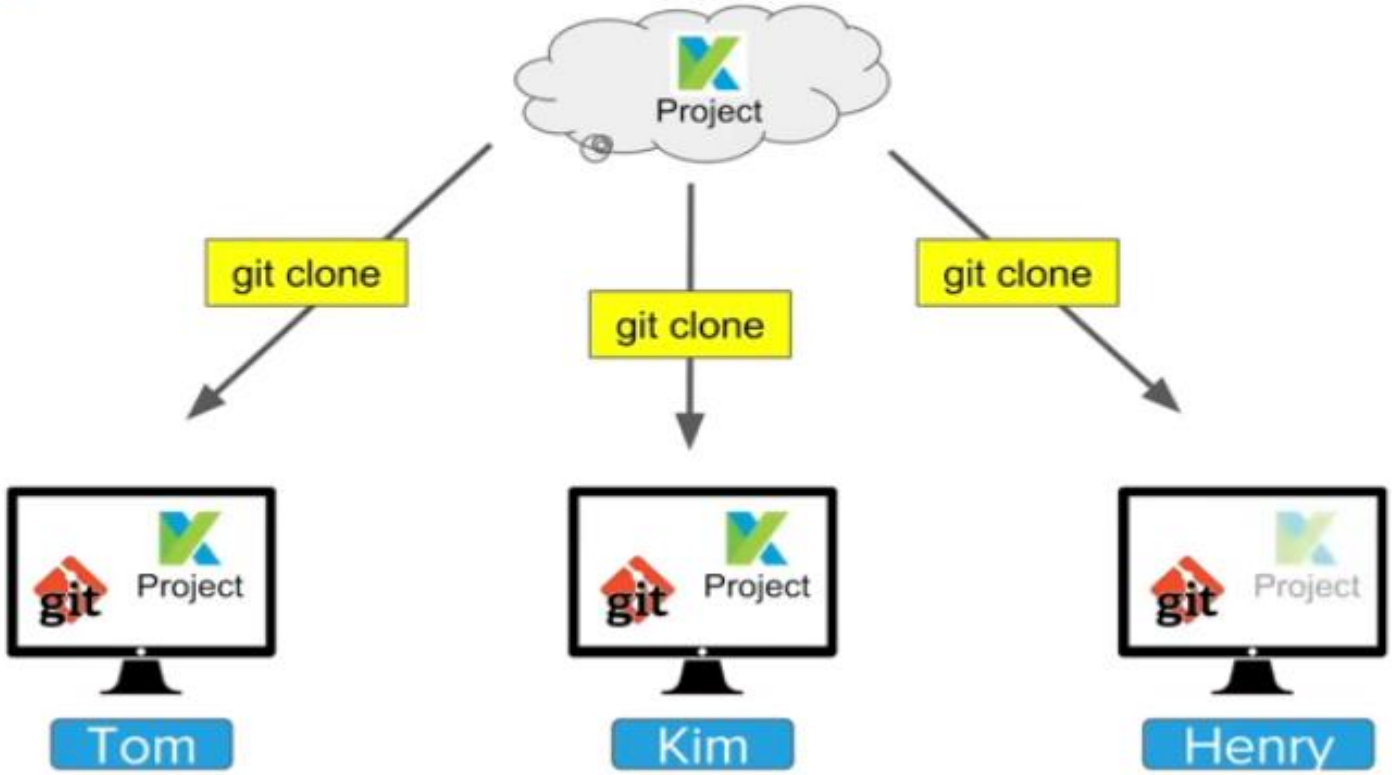
Anyone can put a copy of project on remote repository
(like GitHub or BitBucket)

Tom

Kim

Henry

Step 3 Everyone will clone the project from remote to their local



Step 4

Everyone can now work on their local copies

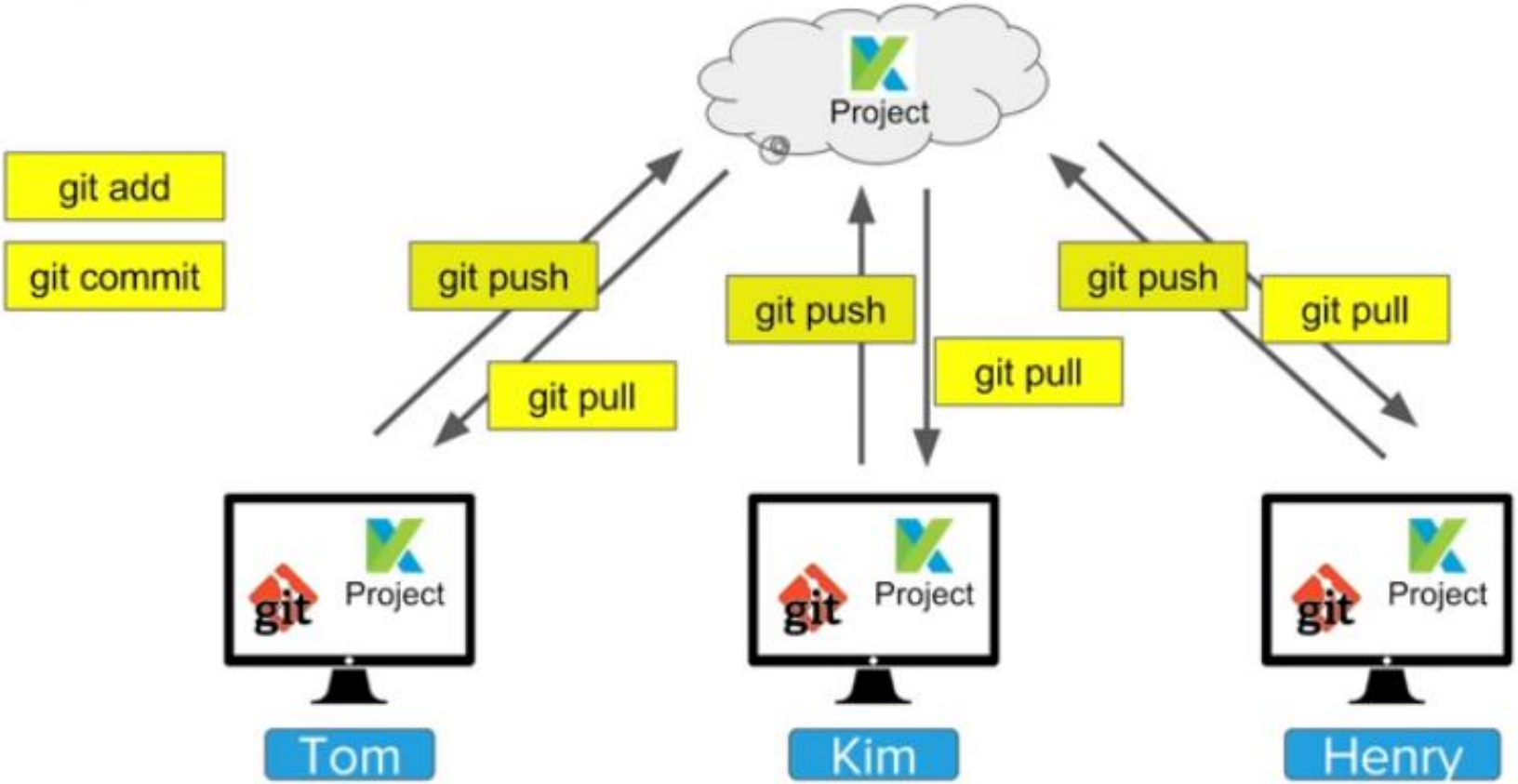
Connection to Remote not required

Tom

Kim

Henry

Step 5 Anyone can commit and push the changes to remote

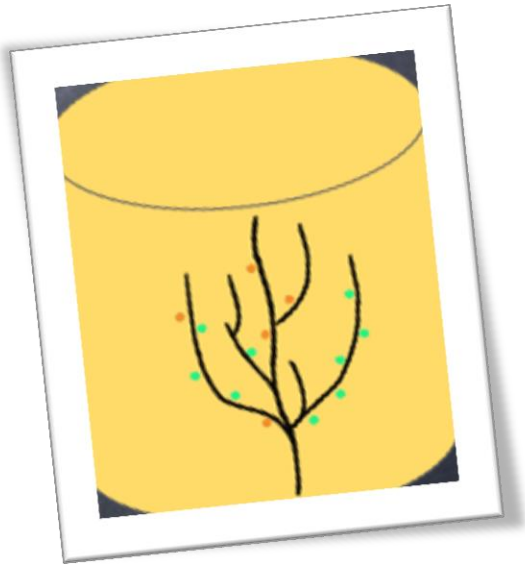


develop
develop

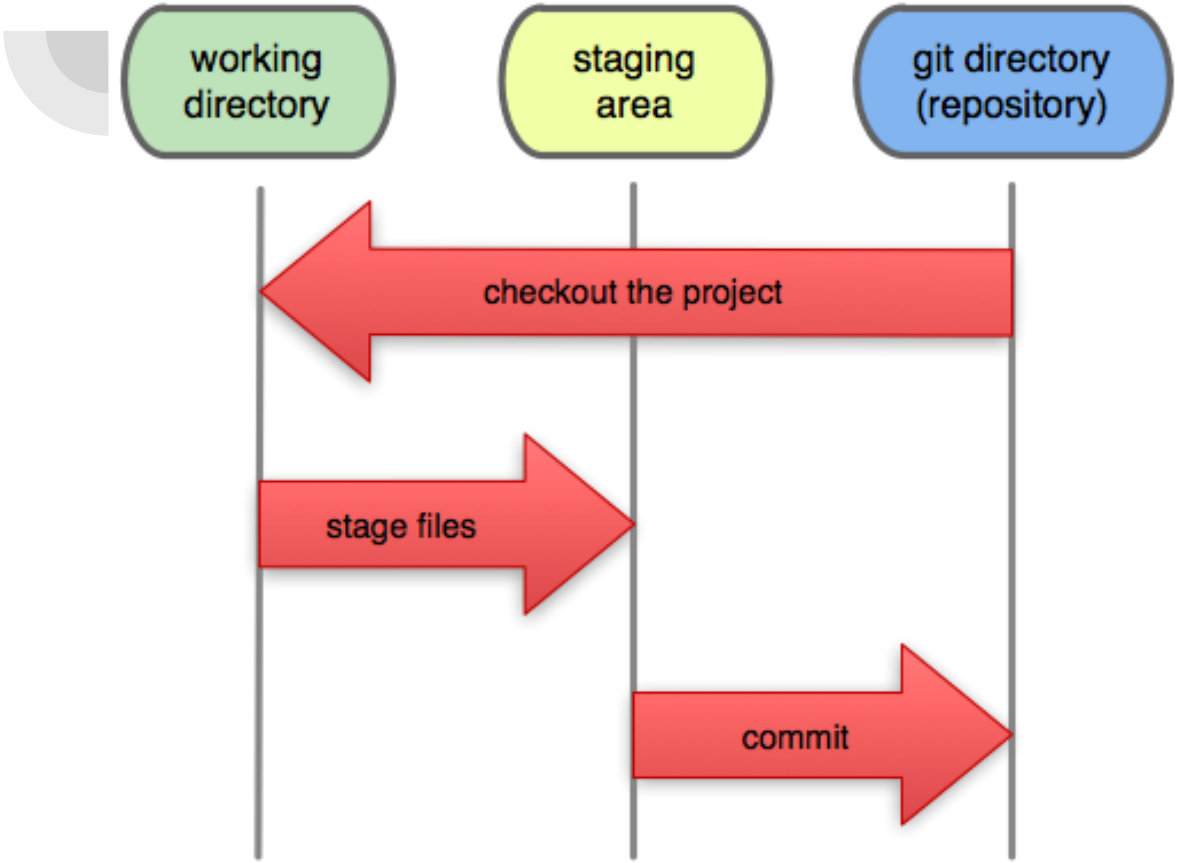
GIT repository

Git Repository

- *Git stores this information in a data structure called a repository*
- *A git repository contains, mainly:*
    - *A set of commits*



Local Operations



Installation

Git Installation

- https://git-scm.com/downloads
- git clone https://github.com/git/git

Git Installation Cont.

- ***Setup Your Identity***
  - $ git config --global user.name "John Doe"
  - $ git config --global user.email johndoe@example.com
- ***Checking Your Settings:***
  - $ git config --list

git commands

git commands

- *git init*
- *git status*
- *git add*
- *git commit*
- *git diff*
- *git log*
- *git clone*

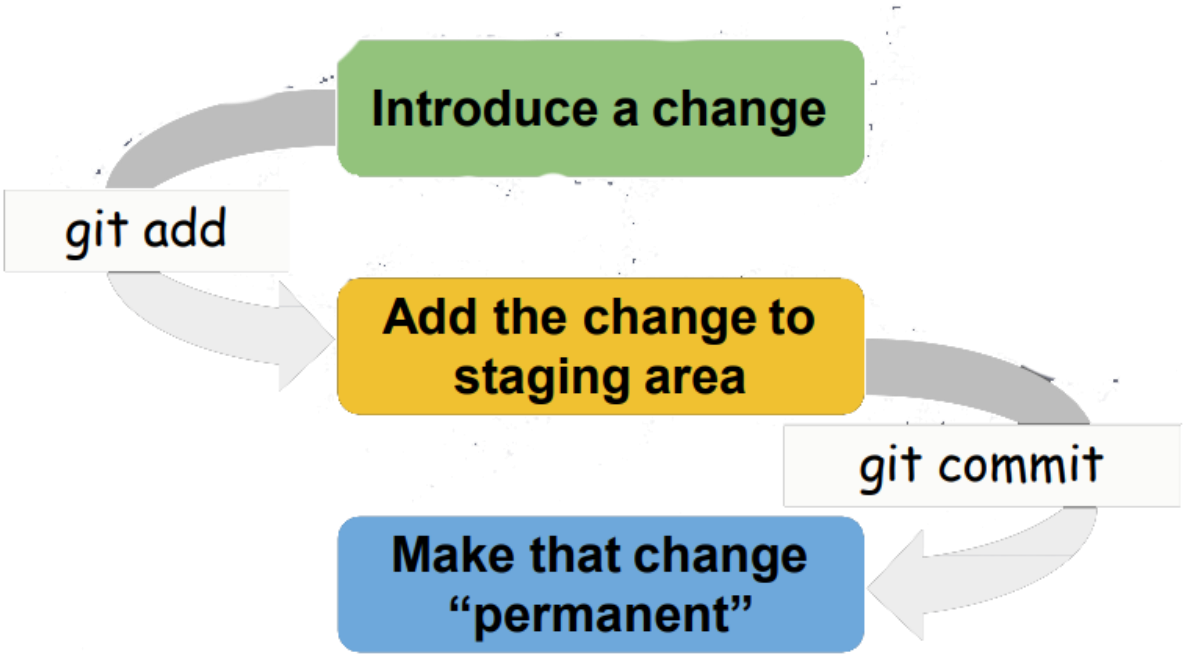
git init

- Creates a new git repository
- Can be used to convert an existing, unversioned project to a git repository or initialize a new empty repository
- If you have a project directory that is currently not under version control and you want to start controlling it with Git, you first need to go to that project's directory

```
Cd J:/Myproj

Git init
```

- git status
    - Displays the file names that has been modified, added and untracked
- git Add



To add file1 and file2

```
$ git add file1 file2
```

To add all files

```
$ git add
```

Commit

- A commit object mainly contains three things:
  - A set of changes the commit introduces
  - Commit message describing the changes
  - A hash, a 40-character string that uniquely identifies the commit object
  - To make a commit: git commit –m “Your commit message”

Displays the change that was introduced:

$git diff

Shows the commit

$git logs

$git logs –oneline

Copies an existing git repository

$ git clone https://github.com/schacon/simplegit-progit

Bonus command:

git checkout

- Checking out a commit makes the entire working directory match that commit
    - $ git checkout commitID
- To checkout master to get the last commit

    $ git checkout master