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How to use Git Commands on Windows
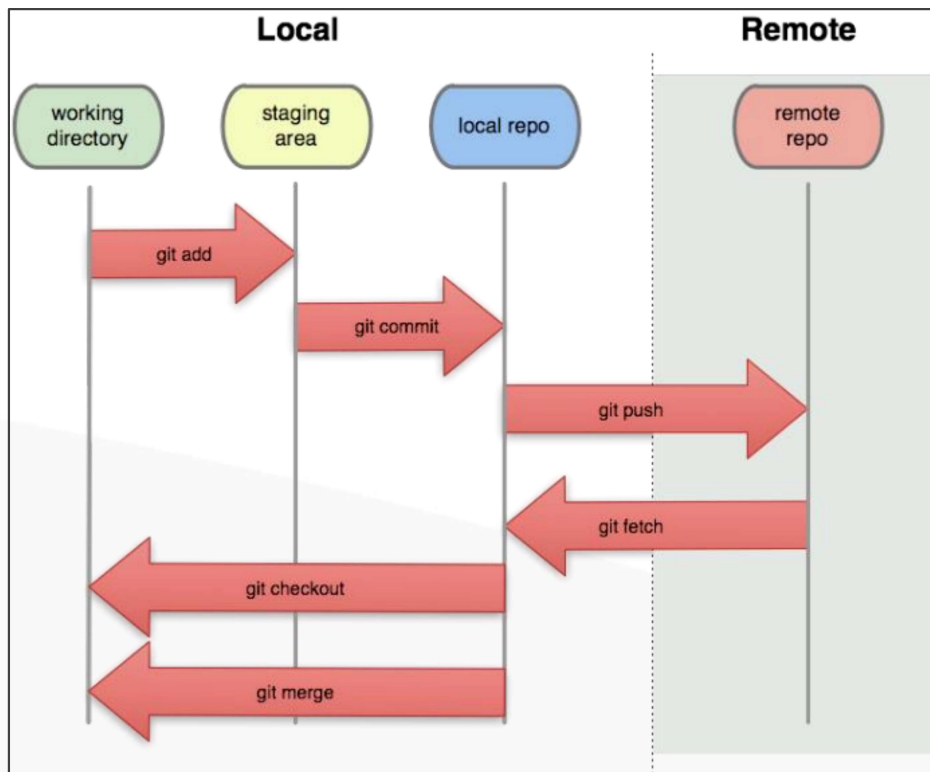
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Overview: How to use Git Commands on Windows

Requirements

- Git allows a team of people to work together, all using the same files and it helps the team to cope up with the confusion that tends to happen when multiple people are editing same files

Solution Schematic

Goals/Constraints

- Speed
- Simple Design
- Strong support for non-linear development
- Fully distributed
- Able to handle very large projects easily

Best used for (HealthCare Use Cases)

- Frequent code changing applications
- Large applications consists of multiple APIs
- Provides security with cryptographic method SHA-1
- Disposable experimentations can be performed
- Multiple local branches independent with each other

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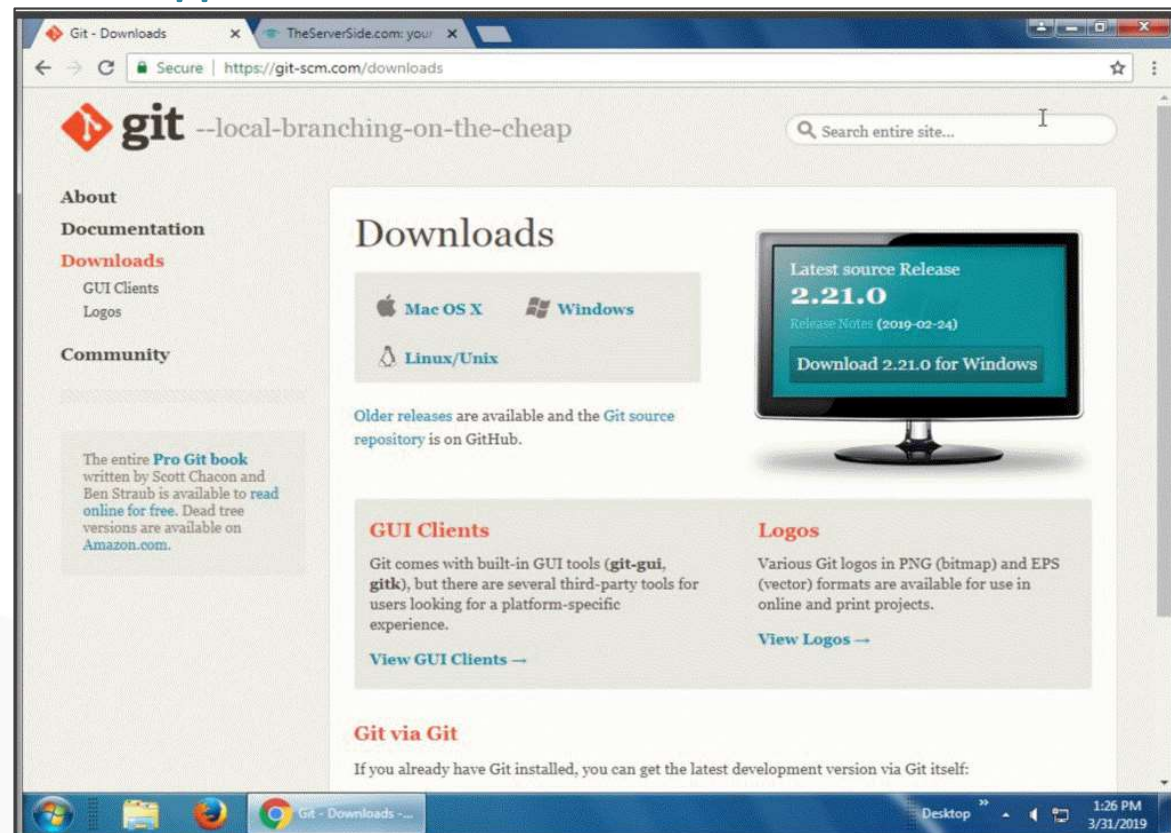# How to use Git Commands on Windows – Setup

Pre-requisites

- Browser installed on machine
- Git for windows setup exe
- Login account on GitHub, Bitbucket, Gitlab etc.

Environment Details (Infrastructure support details)

- Windows 7,8,10

Installation Steps:

- Browse this URL : https://git-scm.com/
- Download git for windows setup file
- Execute the setup file

Clone & Branch

Cloning Steps:

- Login using browser and copy the cloning path for a project repository from version controlling repositories provided by GitHub, Bitbucket, GitLab etc.

- Cloning path looks like http://bitbucket.org/sampleproject.git

- Create a folder where you want to create your local repository for the project

- Open this folder then right click and select git bash

- Type $ git init to initialize the local git repository

- Type $ git remote add origin ''cloningpath'' to add reference of remote repository. (Example : git remote add origin http://bitbucket.org/sampleproject.git)

- Type $ git pull origin master. It will fetch source code from remote to local repository for master branch

Branch Steps:

- Type **$ git checkout –b develop**. It will create a new develop branch from master branch having same code of master branch

- Type **$ git checkout –b develop_Amin**. It will create a new branch preferably write developers name who will be working on the machine. Prefix develop will indicate this branch is created from develop

- Now add or make changes in the code in this folder

Commit & Push

Commit Steps:

- Let us assume we have added two new files in the local repository Sample 1 and Sample 2 respectively
- Type $ git status. It will show the files which are changed
- Type $ add Sample2.txt. It will move the Sample 2 file in staging area

```
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

        new file:    Sample2.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        Sample1.txt
```

- Files which are yet to be added to staging area are in red color and the files which are in staging area are in green color
- Type $ git commit –m "Your commit message" to commit the changes to local repository

Push Steps:

- Type $ git push origin develop_Amin to push the branch with latest changes to remote repository

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Merge & Conflicts resolve

Merge Steps:

- Let us assume we are merging develop_Amin to develop branch

- To merge branch we need to create pull request on remote repository(GitHub, Bitbucket, Gitlab etc).

- While creating pull request we can also add reviewer to review the code before merging

Conflicts Steps:

- Let us assume we are merging develop_Amin to develop and we have received few conflicts

- Now we need to pull the code from remote develop branch to your local develop_Amin branch using command git pull origin develop

- Now on your local code editor it will show you current changes and incoming changes. The above screenshot shows how the conflict looks like. You need to choose the latest code and remove unwanted code then again trigger one more commit. It will resolve the conflict

Recommendations & Pitfalls to Avoid

- Always take pull of latest code of remote repository before proceeding with your changes.

- Do commit early and often

- Use command $ git stash to stash all the changes which you do not want to commit or want to move to some other branch

- Use command $ git stash pop to pop out all the code on your desired branch

- Merge access to be provided to an expert

- Delete the branches which are not in use

Features

- Allows developers to work simultaneously

- Does not allow developers to accidently overwrite code changes of others

- Maintains a history of each and every version

- Assures data integrity

- Branching and merging is very easy

- Git provides the best performance. Committing, branching, merging all are optimized for better performance than other systems

References

- UniverCTLive – [How to download and install git](#)

Thank You

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