cybercom creation

contact@cybercom.co.in +91 79 26769999

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Git Version Control

Why Git?

- Git is the most commonly used version control system.
- It tracks the changes done by the team. This makes it easy to revert any changes if we ever need to do so and it is helpful to review the code.
- It is also allowing changes by the multiple people and merge all changes onto one resource

Requirement

1. Create an account on github.com
2. Download and install git software from
    a. https://git-scm.com/download/win (window users)
    b. https://git-scm.com/download/linux (Linux users)
    c. https://git-scm.com/download/mac (iOS users)
3. Install development server XAMPP https://www.apachefriends.org/download.html or your preferred one for your OS (Optional)

Introduction

Repository

Repository is a collection of files of a Project which enables us to use it by cloning in local machines. The detailed introduction you can read from https://www.geeksforgeeks.org/what-is-a-git-repository

Branch

A branch represents an independent line of development which helps us to work on different tasks on the same project. Branches work as brand new working directory. It will be clearer when you do some experiment

STEP 1: Register Account

- After registration in github, you will see an option to create your repository
- Click on the “Create a repository” button and add all required details and click on “Create repository” button https://www.screencast.com/t/ArEmzsxCxbYo
- You will see your repo details as per screenshot https://www.screencast.com/t/vm7791tCTli

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STEP 2: Generate SSH Key

- Now generate SSH key from your local machine and add it in your github account
- Open git bash (windows) or terminal (Linux or iOS) and run below commands

  ssh-keygen -t rsa -C "username or email"
  Example: ssh-keygen -t rsa -C "user@domain.com"
  Click enter without typing anything (may be 3 times)
  Screen will look like https://www.screencast.com/t/LtzuoNMYkM

- Copy your SSH key using below command
  cat ~/.ssh/id_rsa.pub
  Copy complete key including ssh-rsa word at start point and your email at the end
- Now go to https://github.com/settings/ssh/new to add SSH key. Past your key and click on "Add SSH key" https://www.screencast.com/t/ICtJaiO2w7O

STEP 3: Cloning project in local machine

- Now go to server directory where you want setup project and right click in folder to start with Git Bash https://www.screencast.com/t/y63thymmIu
- Create a directory for your project using below command
  $ mkdir batman
  https://www.screencast.com/t/9YZdjnvo9PV
- Now go to your repository list https://github.com/user-name?tab=repositories and choose which one to clone. Click on green Code button and choose ssh tab to copy repo name
  https://www.screencast.com/t/1wKpDKinb
- Clone your repository in your project directory
  $ git clone git@github.com:user-name/batman.git batman/
  Output will look like https://www.screencast.com/t/Muy6xtaOV6pc
- Navigate to your project directory using below command
  $ cd batman
  https://www.screencast.com/t/2M99tA7Ntrz
  You will see the README file and .git hidden folder in your project directory
  https://www.screencast.com/t/jsx6kuO8jENc

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STEP 4: Git Commands

- First check the nickname of your repository using the below command.
  $ git remote –v
  https://www.screencast.com/t/7Ol8TUg4AR3
  Here “origin” is the repo name. You can add as many as repo in your project
- You always need the latest update in your repo. Use below command to fetch latest updates
  $ git fetch origin
- Before you start a new task you must create a branch from master or main branch. We will give you more details for how to manage standard practices for the long-term points, hotfixes and regular works

  Use below command to create new branch from main
  $ git checkout -b batman-bike origin/main
  https://www.screencast.com/t/SqP3kzOY2jV
- To check modified or new files use below command
  $ git status
  https://www.screencast.com/t/FjU8meUUasFD
- Now modify your files, commit changes and push to your branch.
  https://www.screencast.com/t/D55MXOTH

  Here you see we have created index.php and it is showing under Untracked files:
  Using below command you can add your files in commit list
  $ git add index.php
  Now commit your changes with a message which describe your changes
  $ git commit -m "added echo in index file"
  and then push your changes to your repo. Using below command
  $ git push origin batman-bike
  Please note that your changes visible in github only after you push your changes
  https://www.screencast.com/t/GifgLPWRg
  https://www.screencast.com/t/EEwkdFlvfdMv

  Here you see main branch has only README.md file
  Change your branch from https://www.screencast.com/t/3l2luC4VysY
  And you will see the updated files https://www.screencast.com/t/zXaf0VxlhM

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by clicking here you can see complete history of your branch
https://www.screencast.com/t/mJr4jqIcXwUi

- Now merge your changes with main or master branch

  First switch to your main branch using below command
  $ git checkout main
  https://www.screencast.com/t/uW4m1xdQ3k
  And then use below two commands for the merge https://www.screencast.com/t/Hktelq8bDm

  $ git fetch origin
  $ git merge --no-ff origin/batman-bike
  And then push your changes to the main branch using git push command
  https://www.screencast.com/t/Qp48F5KZmb6x
  https://www.screencast.com/t/HSYRmIM1kP

- Next step is to modify your files and check the modification and the commit new changes Use git status to check list of modified files and then use git diff to check insertions and deletion
  https://www.screencast.com/t/Hf3IeJvaBU

Once you confirm your changes then follow the steps to add, commit and push