hybrid

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GIT & GITHUB

GIT

- source code management for s/w development.
- follows distributed revision system(allows many software developers to work on a given project without requiring them to share a common network.)
- emphasis on speed,data integrity, and support for distributed, non-linear workflows.
- provides VCS(version control system).

  VCS

  -system that records changes to a file or set of files over time so that you can recall specific versions later.

  -allows you to revert files back to a previous state, revert the entire project back to a previous state, compare changes over time, see who last modified something that might be causing a problem.

  -two types

  CVCS & DVCS(centralised & distributed)

CVCS

-have a single server that contains all the versioned files, and a number of clients that check out files from that central place

-disadv: single point of failure that the centralized server represents. If that server goes down for an hour, then during that hour nobody can collaborate at all.

DVCS

-clients don't just check out the latest snapshot of the files: they fully mirror the repository.

-Thus if any server dies, and these systems were collaborating via it any of the client repositories can be copied back up to the server to restore it.

general commands in GIT

> **git config** : Configure the author name and email address to be used with your commits.

syn: git config --global user.name "don"

git config --global user.email don@demo.com

> **git init** : Create a new local repository

syn: git init MyDemo

> **git clone** : Check out a repository

syn: git clone /path/to/repository : Create a working copy of a local repository.

git clone username@host:/path/to/repository : For a remote server.

> **git add** : Add files

syn: git add <filename>

> **git commit** : Commit changes to head.

syn: git commit -m "Commit message"

> **git push** : Send changes to the master branch of your remote repository.

syn: git push origin master

> **git status** : List the files you've changed and those you still need to add or commit:

syn: git status

> **git checkout** : To control branches.

syn: git checkout -b <branchname> : Create a new branch and switch to it.

git checkout <branchname> : Switch from one branch to another.

git branch : List all the branches in your repo, and also tell you what branch you're currently in.

git branch -d <branchname> : Delete the feature branch.

> **git pull** : Fetch and merge changes on the remote server to your working directory:

syn: git pull

> **git merge** : To merge a different branch into your active branch.

syn: git merge <branchname>

MVC architecture

Model View Controller - is a software design pattern for developing web applications.

- made up of the following three parts:

> **Model** - The lowest level of the pattern which is responsible for maintaining data.

> **View** - This is responsible for displaying all or a portion of the data to the user.

> **Controller** - Software Code that controls the interactions between the Model and View.

Model

- The model is responsible for managing the data of the application. It responds to the request from the view and it also responds to instructions from the controller to update itself.

View

- A presentation of data in a particular format, triggered by a controller's decision to present the data.

Controller

- The controller is responsible for responding to user input and perform interactions on the data model objects. The controller receives the input, it validates the input and then performs the business operation that modifies the state of the data model.

GITHUB

- is a platform for hosting and collaborating on projects.
- don’t have to worry about losing data on your hard drive or managing a project across multiple computers — sync from anywhere.
- is a collaborative and asynchronous workflow for building software better, together.

basic terms:

› Repository

A repository is the basic unit of GitHub, most commonly a single project. Repositories can contain folders and files, including images – anything your project needs.

› Issue

An Issue is a note on a repository about something that needs attention. It could be a bug, a feature request, a question or lots of other things. On GitHub you can label, search and assign Issues, making managing an active project easier.

› Branch

When you create a repository, by default it has one branch with the name master.if you have another feature or idea you want to work on, you can create another branch, starting from master, so that you can leave master in its working state.

When you create a branch, you're making a copy of the original branch as it was at that point in time

› Commit

Saved changes are called commits. Each commit has an associated commit message, which is a description explaining why a particular change was made.

› Pull Request

Pull Requests are the heart of collaboration on GitHub.

When you make a pull request, you're proposing your changes and requesting that someone pull in your contribution -(merge them into their branch).

GitHub's Pull Request feature allows you to compare the content on two branches.

› Merging

Merge a pull request into the upstream branch when work is completed. Anyone with push access to the repository can complete the merge.

If you decide you don't want the changes in your branch to be merged to the upstream branch, you can also close the pull request without merging.