Course: Artificial Intelligence and Machine Learning

Code: 20CS51I

WEEK1- Artificial intelligence concepts

Session 6:

GitHub:

Basics of distributed git:

Git is fully distributed. **Everyone gets an entire copy of the repository history when they clone a repository**. Any changes users make to a repository are local to their repository until they are explicitly shared. Technically, git has no centralized authority for determining the official version of the repository

Meaning of GitHub

GitHub is an online hosting service for Git repositories. Imagine working on a project at home and while you are away, maybe at a friend's place, you suddenly remember the solution to a code error that has kept you restless for days.

You cannot make these changes because your PC is not with you. But if you have your project hosted on GitHub, you can access and download that project with a command on whatever computer you have access to. Then you can make your changes and push the latest version back to GitHub.

Difference between Git and GitHub

Git is a version control system of distributed nature that is used to track changes in source code during software development. It aids in coordinating work among

programmers, but it can be used to track changes in any set of files. The main objectives of Git are speed, data integrity, and support for distributed, non-linear workflows.

GitHub is a Git repository hosting service, plus it adds many of its own features. GitHub provides a Web-based graphical interface. It also provides access control and several collaboration features, basic task management tools for every project.

GitHub account creation and configuration

Go to https://github.com/join.

Type a user name, your email address, and a password.

Choose Sign up for GitHub, and then follow the instructions.

CREATE AND PUSH TO REPOSITORIES

Create a new repository on GitHub.com.

Open TerminalTerminalGit Bash.

Change the current working directory to your local project.

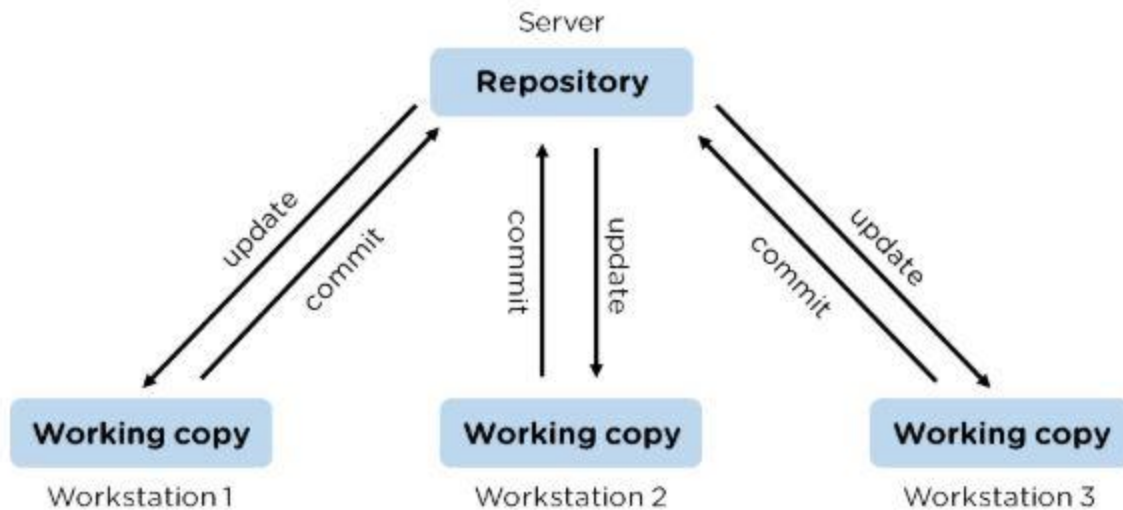Use the init command to initialize the local directory as a Git repository.

Add the files in your new local repository.

Commit the files that you've staged in your local repository.

VERSION CONTROL: It is a system that records changes to a file or set of files over time so that you can recall specific versions later.

A version control system (VCS) records all the changes made to a file or set of data, so a specific version may be called later if needed.

This helps ensure that all team members are working on the latest version of the file

Collaboration with GitHub

GitHub is a cloud software development platform. It is commonly used for saving files, tracking changes, and collaborating on development projects. In recent years, GitHub has become the most popular social platform for software development communities. Individuals can contribute to open-source projects and bug reports, discuss new projects and discover new tools.

Data scientists and machine learning engineers are following the path of software developers and integrating the workflow with GitHub. By doing this, they can share their research work, allow community contribution, and collaborate with data teams. You can find all kinds of data science and machine learning projects, guides, tutorials, and resources on this platform. For students, the platform has become an opportunity to gain work experience and eventually land a job in a prestigious company.

MIGRATION

A migration is **the process of transferring data from a source location (either a GitHub.com organization or a GitHub Enterprise Server instance) to a target GitHub Enterprise Server instance**. Migrations can be used to transfer your data when changing platforms or upgrading hardware on your instance.

Transferring a repository owned by your organization

You can transfer your repository to any personal account that accepts your repository transfer. When a repository is transferred between two personal accounts, the original repository owner and collaborators are automatically added as collaborators to the new repository.

Steps to migrate data

- Sign into your personal account that has admin or owner permissions in the organization that owns the repository.
- On GitHub.com, navigate to the main page of the repository.
- Under your repository name, click Settings.
- Under "Danger Zone", click Transfer

- You can transfer your repository to any personal account that accepts your repository transfer.
- When a repository is transferred between two personal accounts, the original repository owner and collaborators are automatically added as collaborators to the new repository.

DESCRIPTIVE QUESTIONS:

Q:What is the difference between Git and GitHub?

Q:How you migrate your data from source location?

Q3: What do you understand by the term 'Version Control System'?

Q4:Discuss Collaboration with GitHub

Multiple choice questions and answers

Q1:Which of the following is true about Centralized version control system?

   i) It does not rely on the central server
   ii)It is victim to single point of failure
   iii) It rely on the central server
   iv) Both B and C
Ans : iv

Q2.A repository is a file structure where git stores all the project-based files.

   i)TRUE
   ii) FALSE
   iii) Can be true or false
   iv) Can not say
Ans : i

Q3.What is true about GIT?

   i) Git is open-source
   ii) Git is an example of distributed version control system
   iii) Used for handling the development of small and large projects
   D. All of the above
Ans : D

4.After you install Git and prior to issuing the first commit, which two configuration properties does the tool expect to be configured?

i)username and email address

ii)username and password

iii)email address and password

iv)username and IP address

Ans: i

5. A migration is the process of transferring data from a source location to a target, state true or falls

i)true

ii) false

Ans: i