Python IT Automation - Git Collaboration, Troubleshooting, and Intro to Cloud

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Ground Rules

Observe the following rules to ensure a supportive, inclusive, and engaging classes

Give full attention in class

Mute your microphone when you're not talking

Keep your camera on

Turn on the CC Feature on Meet

Use raise hand or chat to ask questions

Make this room a safe place to learn and share

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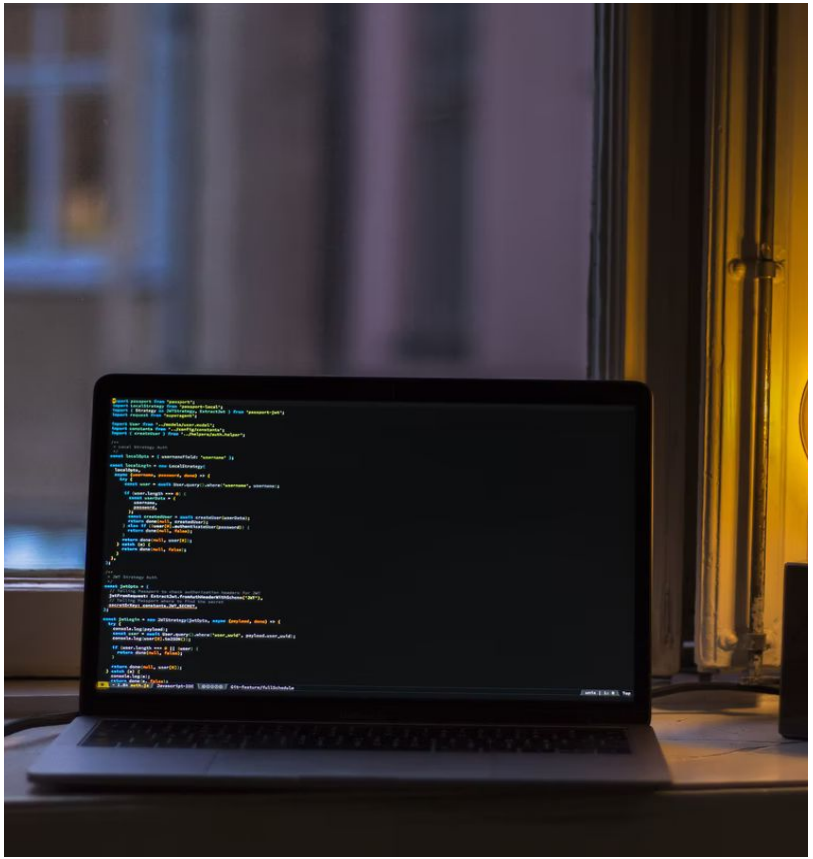
Outline Session

- Introduction to Git
- Collaboration using GitHub
- Troubleshooting Concepts
- Introduction to Cloud



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Introduction to Git

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What is Git?

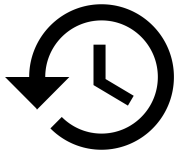
- An Open Source VCS (Version Control System) created in 2005 by Linus Torvalds.

- Git can work as a standalone program as a server and as a client.

* The official Git website https://git-scm.com

Why Version Control is Important?

Keep Track



Rollback

Collaborate

Git Configuration

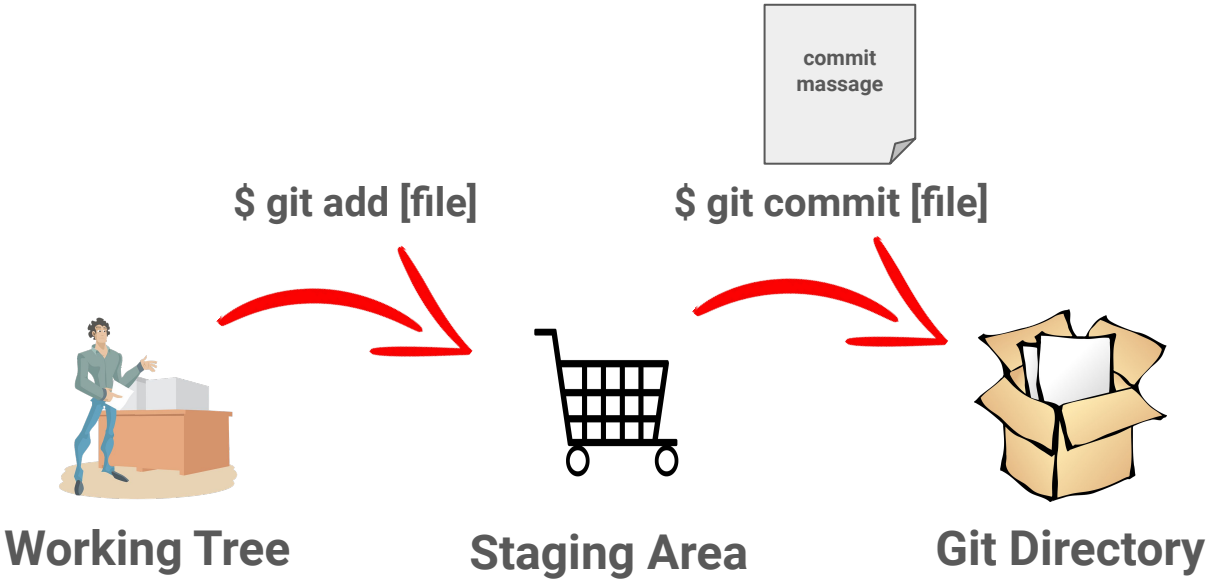
Git Basic Configuration

```
$ git config --global user.email
"your.email@gmail.com"

$ git config --global user.name "Your
Name"
```

Initiate Git Project

```
$ mkdir project
$ cd project
$ git init
Initialized empty Git repository in
/home/bangkit/project/.git/
```


commit massage
$ git add [file]
$ git commit [file]
Working Tree
Staging Area
Git Directory

Undoing Things on Git

- Revert file back to its earlier committed state by using git checkout.
- Unstage the changes by using the git reset command.
- To rollback commits, you can use git revert command.

Branching and Merging

- In Git, a branch at the most basic level is just a pointer to a particular commit.
- The default branch that Git creates for you when a new repository initialized is called master.
- Running command git branch will show a list of all the branches in your repository

Branching

```
$ git branch
* master
$ git branch new-feature
$ git branch
* master
  new-feature
$ git checkout new-feature
$ git branch
  master
* new-feature
```

The current branch

Branching and Merging

- Merging is the term employed by Git to combine branched data and history together.
- Use git merge command.

Merging Branches

```
$ git merge new-feature
Updating 7d1de19..3261880
Fast-forward
 free_memory.py | …
 1 file changed, …

$ git branch -d new-feature
Deleted branch new-feature ...
```

Collaboration using GitHub

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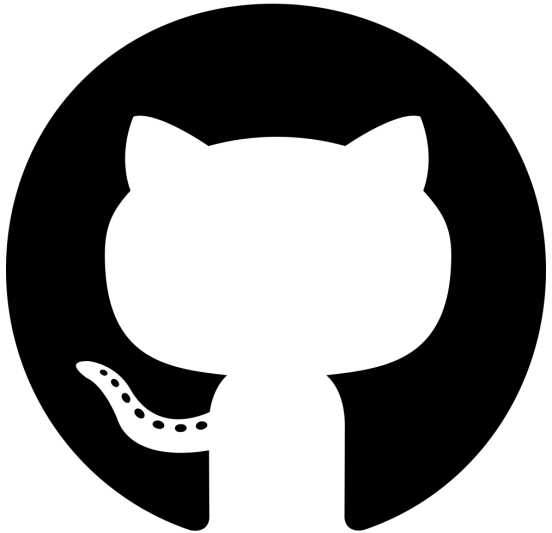
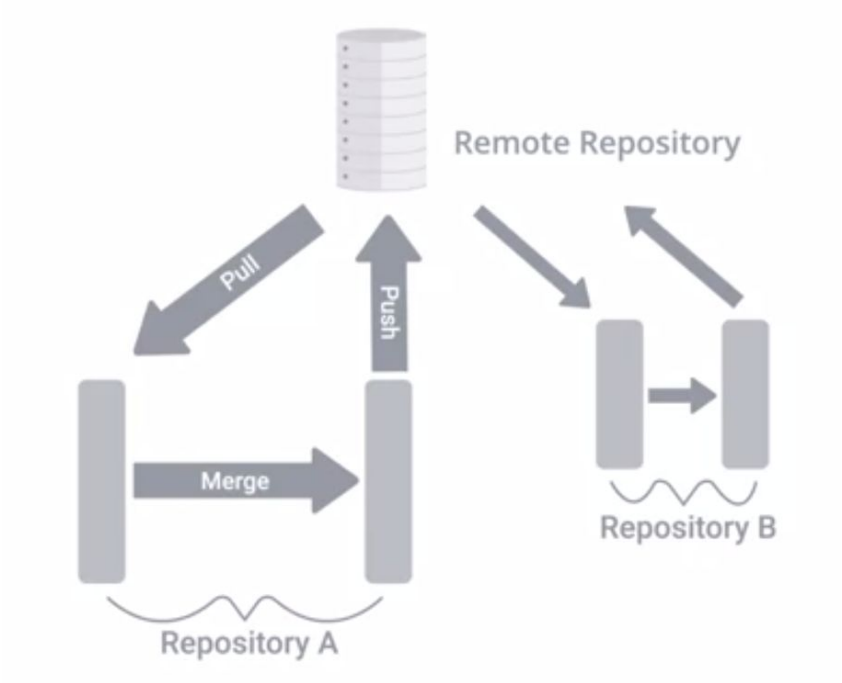
Introduction to GitHub

- GitHub (https://github.com) is a web-based Git repository hosting service.
- Use git clone command to create a local copy of the repo.
- Send the changes to remote repository by using git push command.



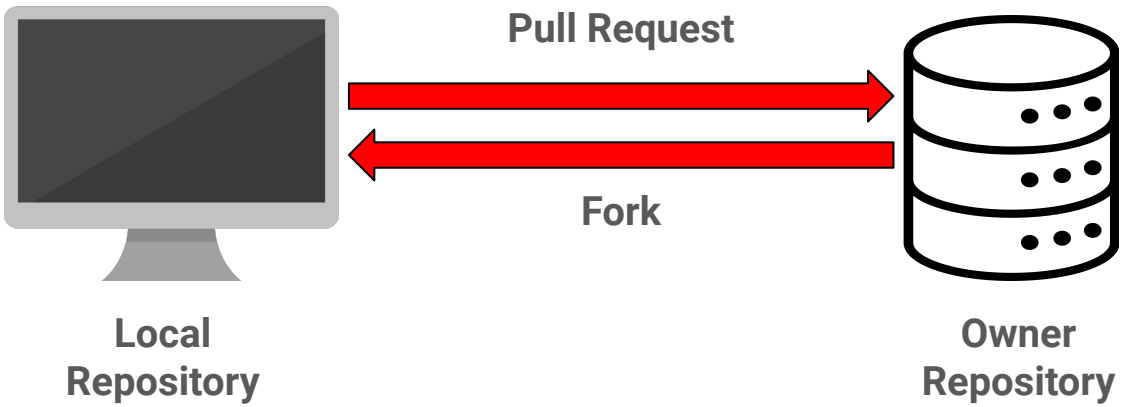
Using a Remote Repository

- Fetch any new changes from the remote repository.
- Manually merge if necessary.
- Git has the git pull command to fetching and merging at once.
- Push changes to the remote repo.



Solving Conflicts

- Always synchronize the branches before starting any work.
- Try to make changes as small as possible as long as they're self-contained
- Regularly merge changes made on the master branch back onto the feature branch
- It's a common practice to have the latest version of the project in the master branch and a stable version of the project on a separate branch.



Pull request is a commit or series of commits being sent to the owner of the repo so they can incorporate it into their tree.

Code Reviews

- Doing a code review means going through someone else's code, documentation or configuration and checking that it all makes sense and follows the expected patterns.
- The goal is to improve the project by making sure that changes are of high quality.

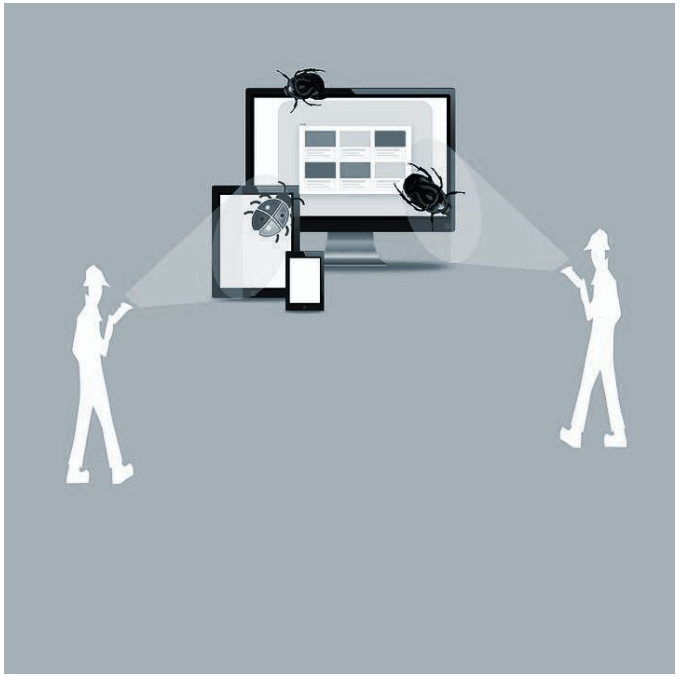
Managing Projects

- Documenting what you do and why you do.
- Let others know how to interact with the project by creating readme.md.
- Tool like issue tracker or bug tracker can help to better coordinate the work.

Troubleshooting Concepts

What is Troubleshooting?

- Troubleshooting is the process of identifying, analyzing, and solving problems.
- Debugging is the process of identifying, analyzing, and removing bugs in a system



The Strategies to
Solve Technical Problem

Getting Information

Finding The Root Cause

Perform Necessary Remediation

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Introduction to Cloud

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A service running in the cloud, simply means that the service is running somewhere else either in a data center or in other remote servers that we can reach over the Internet.

Software as a Service
(SaaS)

Platform as a Service
(PaaS)

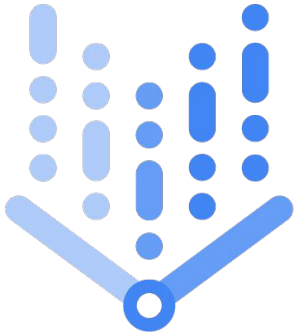
Infrastructure as a Service
(IaaS)

Google Drive

Google Drive is a file storage and synchronization service developed by Google

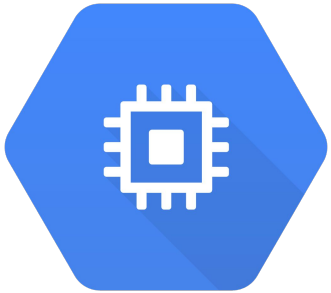
Vertex AI

Vertex AI is a Google Cloud Platform (GCP) service for building ML under one unified UI and API, to simplify the process of building, training, and deploying machine learning models at scale.



Google Compute Engine

Google Compute Engine (GCE) is a secure and customizable compute service that lets you create and run virtual machines on Google's infrastructure.



Sharing Session

Demo Link

https://drive.google.com/file/d/1FldvzIbnSud6EDsrlGvFOKrbbboMUtGy/view?usp=sharing

Quiz

Discussions

Thank You

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