

**What is Github**

It’s a distributed cloud decentralized repository where we can maintain our sourceCode / Automation Framework source code/ CRS doc /build of the application in one place

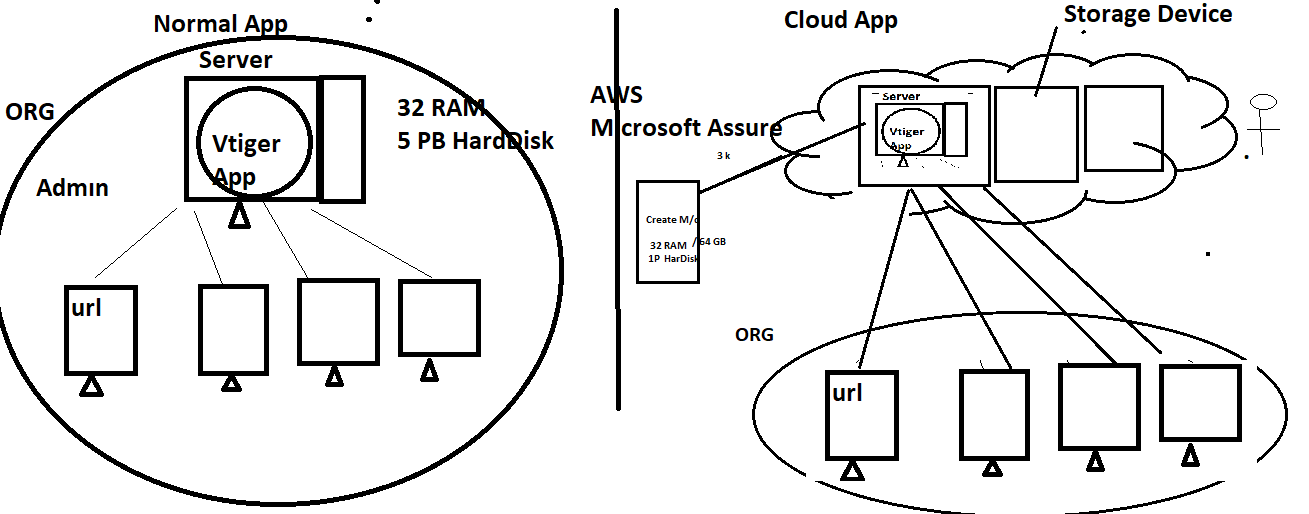
There are 2 Software in Git-Community

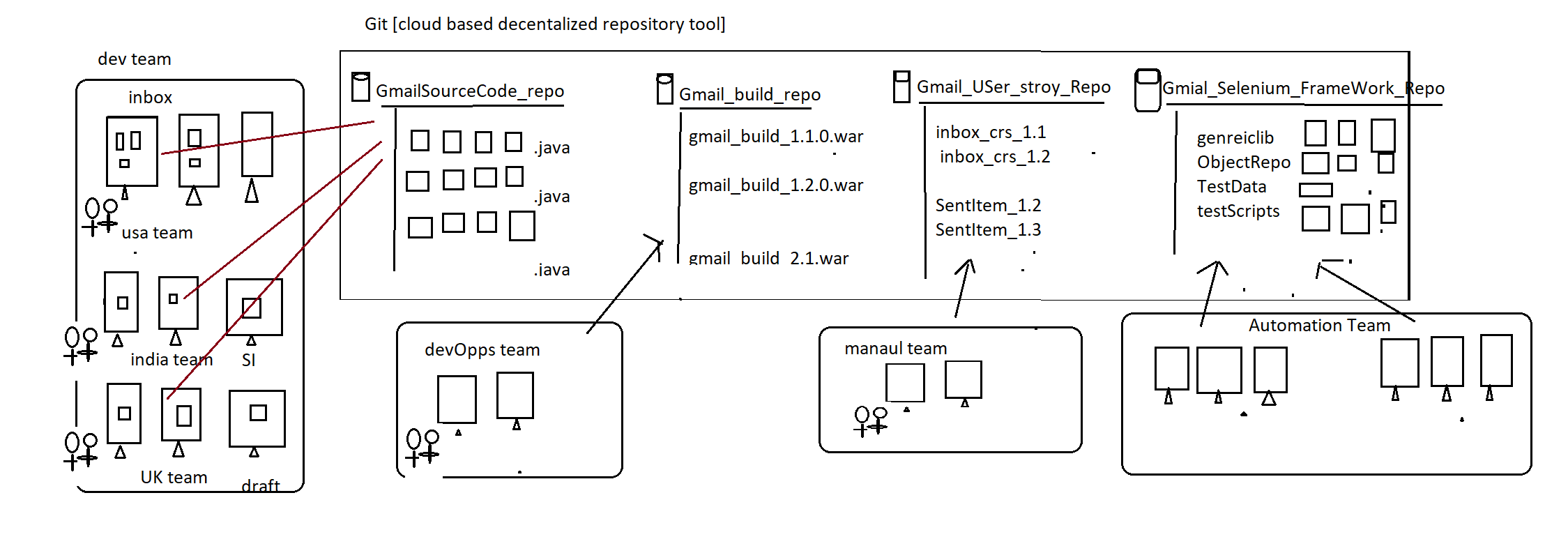
1. Git HUB : Cloud based repository(software) , which is used maintain the source code in one place , in order to use it just create an account with https://github.com
2. Git [Git client] : it’s a software should installed in client machine , which is used to communicate to GITHUB

EG : Git client Software EGit , GitDeskTop , GitBash

**Advantages of GitHud / Cloud repo**

1. Since its cloud based repository , no need have maintenance team to maintain the Software / HardWare
2. Cloud means pay rent for what you use
3. Cloud software always access via internet
4. Cloud System / sever physically not present within the Organization, but present virtually
5. Initial investment is not required for Software/ Physical location
6. Scale UP / Scale Down is easy
7. File Share between the team members is easier
8. It provides remote access, it means anywhere contributors can access via internet
9. Provide History for changes made by users & backup facility
10. GitHub also provide platform to review [pull request] the Code of Automaton test scripts
11. GitHub Also handle the conflict’s
12. Jenkins Always get the latest framework from the Git for batch Execution



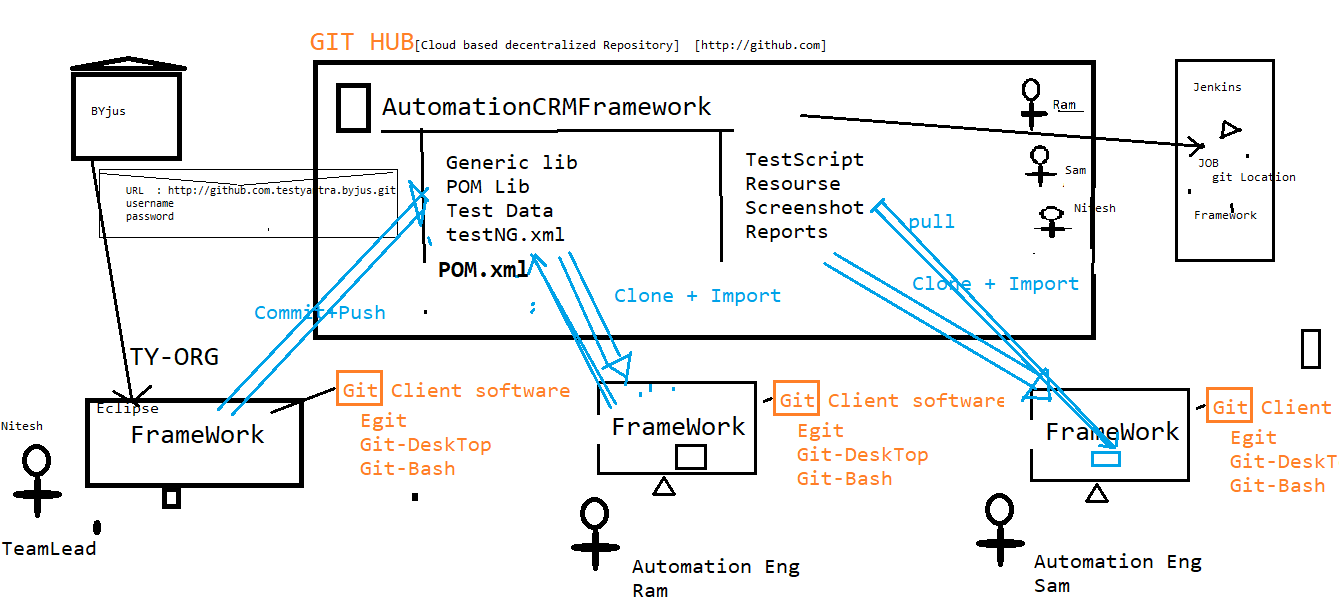


Developer Usage of Git : used to maintain the Source of the Application in one place

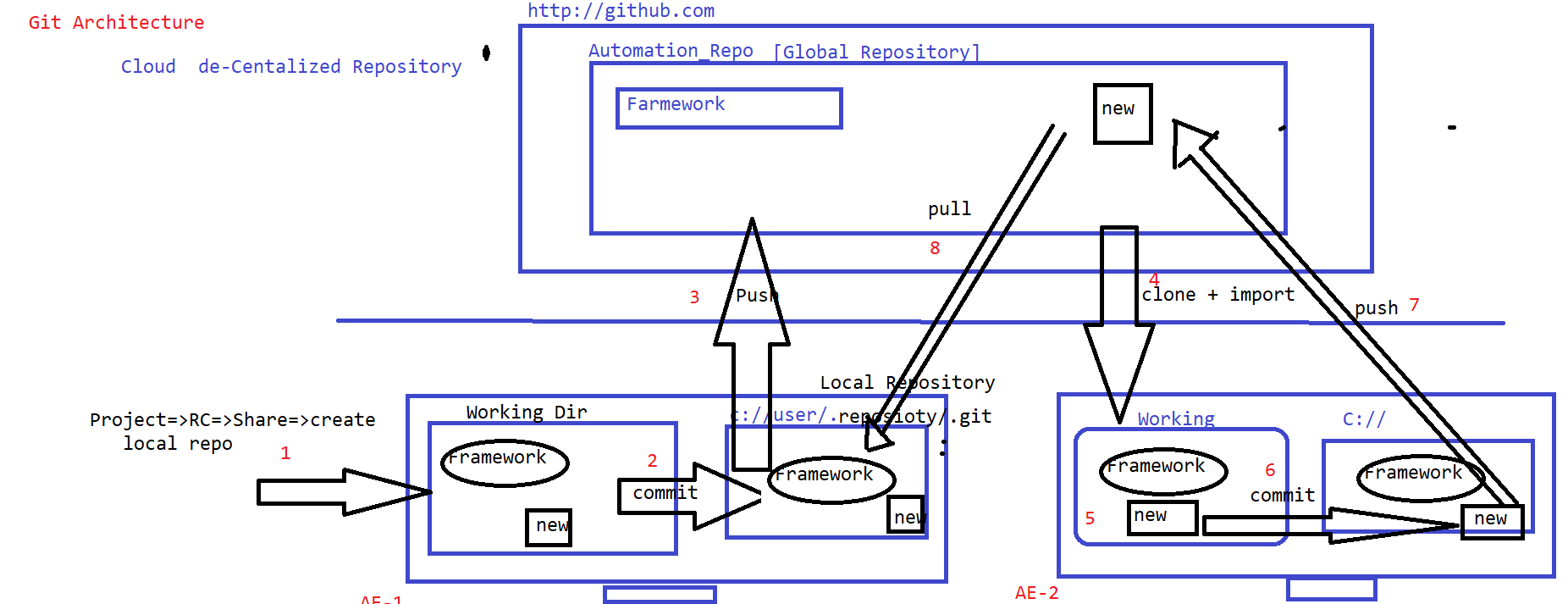
Automation Usage of Git : used to maintain the entire Automation framework in one place

DevOps Usage of Git : used to maintain the multiple application build version(like .exe, .war , .tar , .jar etc) in one place

Manual team Usage of Git : used to maintain the entire CRS / use case of the application



**Git Architecture**



**Why Git is Decentralized Repository?**

Git is Decentralized Repository because, in Git before pushing any Code to git Hub, we have to commit the code to local repository first, make sure code is working in Local Repository then push Code to GITHUB(Global Repo)

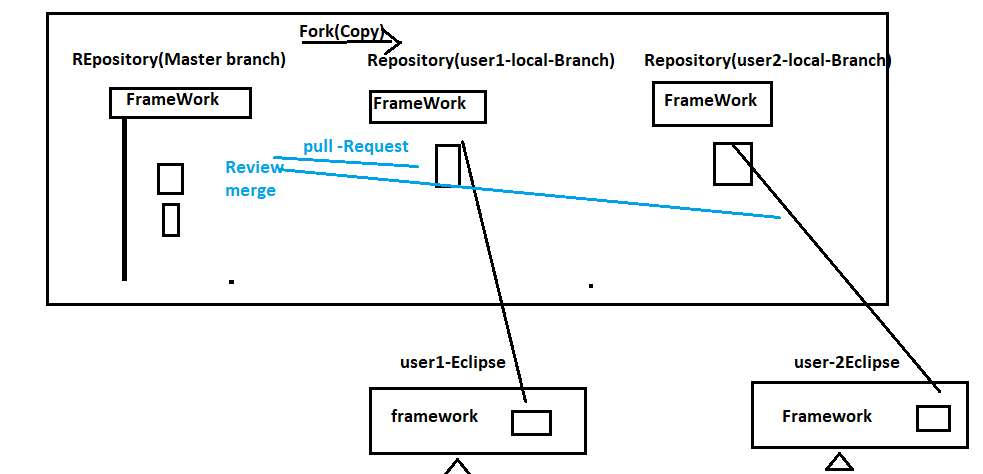
* There are Three stages in Git , start with “Working Diretory”🡺Local Repo🡺Global Repo

**What is Git Conflicts**

When two or more engineers modified the same file , when Eng-1 one push the file to GitHub will not get any conflicts , but Eng-2 try to push the same file to GitHub , will get git

Conflicts (because that file already modified by Eng-1)

Solution: Before push any file to GitHub, we should mandatorily Pull the Project & select merge option , then[eclipse automatically merge the Code with comments]& remove comments manually & analyse the code then push it

**What is Pull Request & git branching ? **

Whenever user made changes in the Programs , some Organization will not have access to push your changes to Master-Branch , in such case we supposed to create a local branch using “fork” option , than push the changes to local branch & than create “Pull Request” to Team lead asking for “REVIEW & MERGE” my program to master branch

Fork - used to copy the entire code/framework from master branch to local branch

Note 1 : Because TE accessing framework from will put all in risk because one day if he/they do any change to framework without the knowledge in master branch, it creates problem

Note 2: Jenkins always execute code from master branch for every build in jenkins server

Can u explain Git Commands?

Commit

Pull

Push

Merge

Clone

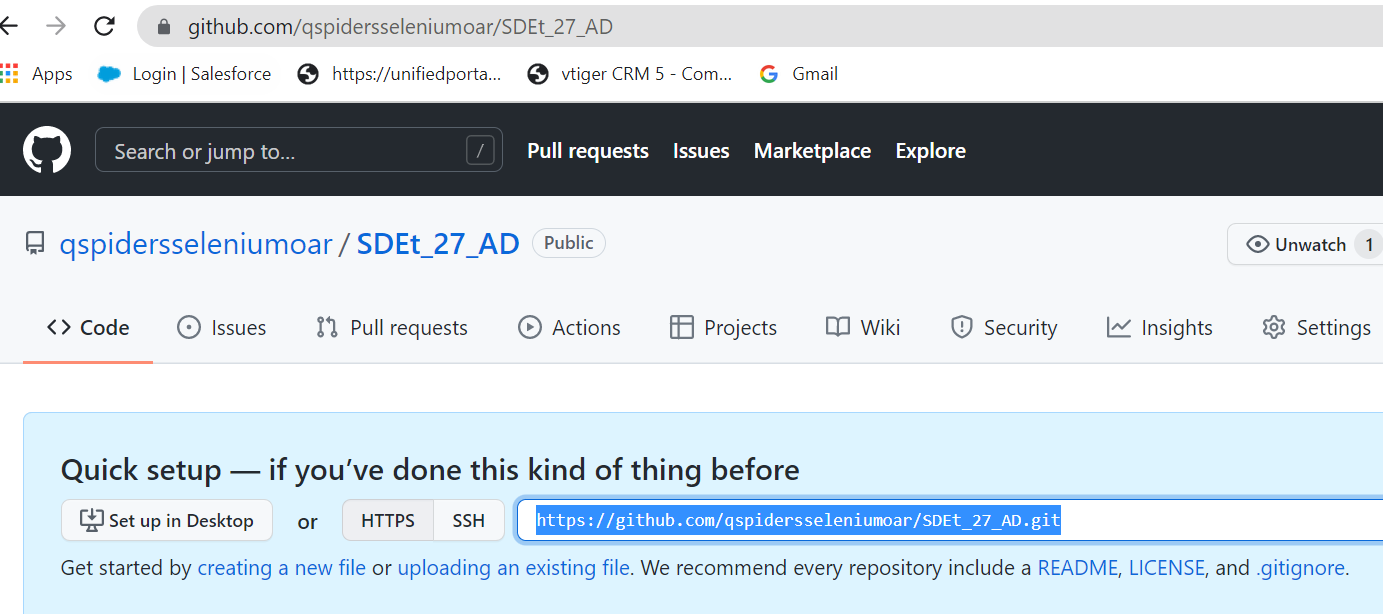
Fork

Can u explain Git CMD Commands?

How to create account with Git-Hub

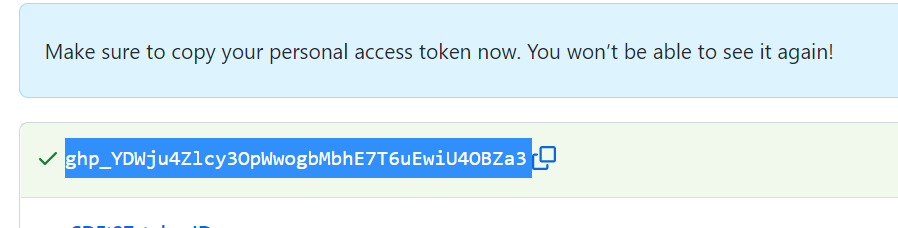
1. Go to [www.github.com](http://www.github.com)
2. Click on sign Up
3. Create an account [capture username/password]

How to create Repository in Git-Hub

1. Login to github
2. click on “new Button ” or click on “+”=>new Repository
3. enter all the details & click on “CREATE” BUTTON
4. COPY Git URL 

How to create Token ID for Git-Hub instead of password

1. login to GitHub
2. Go to “Profile Image” Icon
3. Click on Settings
4. Click on “Devlopers settings”
5. Click on “Personal Access Token”
6. Click on “Generate new Token” button
7. Enter the TokenID name & select repo “CheckBox”
8. Click on “generate token” button
9. Copy the Token ID



How to share the Eclipse Project to Git

1. Select the Project 🡺Right click 🡺 Team🡺 Share Project
2. Click on Finish

How to push your framework from Working\_Dir to Local Repository?

1. Select the Project 🡺Right click 🡺 Team🡺 Commit
2. Drag the Files from upstaged area to Staged-Area
3. With comment
4. Click on “Commit”

How to push your framework from Local\_Repo to GitHub [Global Repository]?

1. Select the Project 🡺Right click 🡺 Team🡺 Commit
2. Drag the Files from upstaged area to Staged-Area
3. With comment
4. Click on “Commit-Push”

How to get Framework from GitHub to local System very first Time

1. Go to Eclipse
2. Click on “File”
3. Click on import
4. Expand “Git” folder
5. Click on “Project from git”
6. Click on “Clone URL”
7. Enter “Git URL” username/TokenID
8. Click on finish
9. Enter framework will be loaded from Global Repo to Local Repo

How to push newly created file from Local to Global[GitHub]

1. Select the “new File” in side the package
2. Right Click 🡺 team
3. Click on commit
4. Drag the “new File” from upstaged area 🡺 staged area
5. Click on “Commit & Bpush”

How to get newly created file from Global[GitHub] to local

1. Select the project
2. Right Click🡺 Team
3. Click on “pull” => merge
4. Click on finish

My notes

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1. Project framework Global Repository

GIT URL - https://github.com/PavanRS2410/ComcastFrameworkRepo.git

UN - PavanRS2410

Token ID - ghp\_eWLLhBFvBnccGGDdTQehUSaQie7uOF2RbEvn

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Note: real git account password is not required, instead generate barrier code/token id

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Steps to create token ID in GIT

- Login to GitHub

- Go to profile image icon

- click on settings

- click on developers settings

- click on personal access token

- select tokens(classic)

- click on generate new token button and select generate new token button(classic)

- enter the token id and select repo checkbox, project, delete repo and delete:packages

- click on generate token button

- copy the token id

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How to create local repo from working space?

- right click on project in eclipse

- click on team

- select share project

- click on create repository

- select repository directory ----> C:\Users\Pavan R S\git\Automation\_TL

- click on finish

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How to push our framework into global repo and see the framework details in GIT?

- right click on project in eclipse

- click on team

- click on commit, select all the files and drag to staged changes, add commit message and click on commit

- again right click on project

- click on team

- click on push master branch

- enter URL, UN, PWD

- click on preview

- select force overwrite branch checkbox

- click on preview

- click on push

- Once pushed type the same URL and refresh the page

- select master from the dropdown and see the project framework being pushed

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How TL or customer can add collaborators details in GIT?

- In profile go to settings

- click on collaborators and add with details

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How TEs(Shanthanu and Shanthi) can import framework from Git to local repo and to eclipse?

Note: by this time Shanthanu and Shanthi should have created their own GIT account

- right click on project

- click on import

- select projects from git

- click on clone URL (if local repo doesn't exist)

- enter URL, UN , PWD (of Shanthanu/Shanthi)

- enter directory of local repo(in the system)

- click on finish

- in eclipse you can see the complete project and work on it

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How to do changes in framework and share/commit-push to GIT? (basically done by TL)

Ex: Add products\_link POM element in HomePage class of Obj Repo

Once changes are done

- right click on that particular class/package where changes are done

- click on team

- click on commit, select all the files and drag to staged changes, add commit message and click on commit and push

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How TEs(Shanthanu and Shanthi) can import framework changes into their eclipse workspace?

- right click on project

- click on team

- select pull

- pull and click on finish

Note: changes are done to existing file and commit-push-pull process is happening

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How to commit-push new class/package/project into local and global repo?

Note - To identify which is the new class/package/project , ? symbol will be available beside it which indicates that

that particular class/package/project is not added either to local or global repo

Ex: Add ProductsPage which is a new file into both local and global repo

Once changes are done

- right click on that particular class/package where changes are done

- click on team

- click on commit, select all the files and drag to staged changes, add commit message and click on commit and push

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How to copy framework from master branch to local branch?

Note: master branch is TL account, local branch is TE account

in real time TE will not copy/pull code from master branch, instead they pull from local branch

- Using URL enter the GitHub

- once you press enter it will display fork

- click on fork

- use same repo name and check the owner(collaborator)

- click on create fork

- so entire framework gets copied/forked from master branch to local branch

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How to import-clone framework from local branch?

Note - Now you have to use the TE URL not TL URL, to import-clone framework from local branch

- right click on project

- click on import

- select projects from git

- click on clone URL (now local repo exists)

- enter URL, UN , PWD (of Shanthanu/Shanthi)

- enter directory of local repo(in the system)

- click on finish

- in eclipse you can see the complete project and work on it

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Note: Once any code changes is pushed to local branch by TE, place a pull request so that TL can review it

Advantages of cloud repo in automation

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- GIT provides access protocol for security like barrier token oauth 2

- Code collaboration tool

- it lets you and others work together on projects from anywhere

- file share b/w team members is easier

- it provides remote access which means anywhere contributors can access via internet

- provides history for changes made by users and backup facility

- provide platform to review(pull request) the automation code test scripts

- handles the conflicts(like merge conflicts)

- Jenkins always get the latest f/w from GIT for batch execution

- GIT repo plays major role in CI/CD integration process