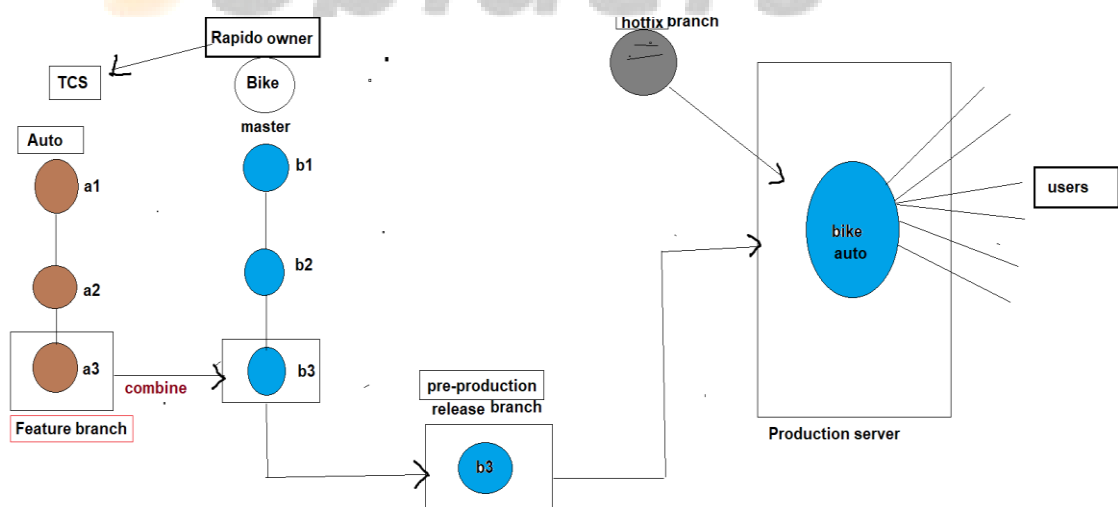# Branching

What is a Branch ?

Definition :

In Git , A branch is a new or separate part of a main repository that is used to develop an independent line of code without effecting main / Master.

(OR)

A branch is a separate part of master branch in git. Branching means diverging from the master and continue to work separately on the same project.

Why we need branch ?

- Branches allows developers to work together in a same project using different branches.

- Developers can easily develop new features of a software without effecting the main branch code.

- To maintain Stability when changes are made to a particular code.

Types of Branches :

1. Master branch
2. Feature branch
3. Release branch
4. Hotfix branch

1. Master branch :

This branch contains production code. All the development code is combined into master to send to the production environment.

2. Feature branch :

Feature branches are used to develop new features for the next release. Once the feature is completed it is combined / merged into master branch.

3. Release branch :

Release is a temporal supporting branch to the production release, mainly bug fixes will be done in this branch.

4. Hotfix branch :

Hotfix branch is necessary to perform immediate bug fixing in production environment.

Various Commands used in Branch :

- To Create a branch : **git branch <branch_name>**

- To see all the branches : **git branch**

  (or)

  git branch –list

- To switch from one branch to the other branch :
  git checkout <branch_name>

  (or)

  git checkout -b <new branch_name>

  (or)

  git switch <branch name>

- To rename a branch : **git branch -m <branch_name>**

- To rename a branch from the master :

  git branch -m <old branch name> <new branch name>

- To delete a branch in local repository: **git branch -d <branch_name>**

- To push a branch to remote repository :
  git push alias <branch_name>

- To delete a branch in remote repository :
  git push alias -d <branch_name>

- To list out all the local and remote branches :
  git branch -a

- To list only the remote branches :
  git branch -r