Experiment 8: Change specification and use any SCM Tool to make different versions for the project

Learning Objective: Students will able to create versions using Github tool

Tools: Github

Theory:

Software configuration management: The traditional software configuration management (SCM) process is looked upon by practitioners as the best solution to handling changes in software projects. It identifies the functional and physical attributes of software at various points in time, and performs systematic control of changes to the identified attributes for the purpose of maintaining software integrity and traceability throughout the software development life cycle.

Software configuration management is a part of software engineering, which focuses mainly on maintaining, tracking and controlling the changes done to the software configuration items.

Configuration management is present in all phase of software development. The configuration items can be all the objects which come as an output of the development process e.g. coding phase produces source code, exes and obj files. The various configuration items can be:

1. Source code,
2. Documents
3. Data used in the programs

In Configuration management, there can be multiple versions created for any configuration item (Source code/ documents). Each version can be identified by unique configuration or an attribute which is associated with each version. E.g. the version number.

Terminologies used in version control

1. SCI – Software configuration items, i.e. the documents and code which will be having version number and saved.

2. Repository- it is the system where all the SCIs will be stored.
3. Check in- to store the tested and qualified source code.
4. Checkout- to get a copy of the stored SCI from the repository.
5. Add – Add to the local repo and keep ready for commit
6. Commit- to save the file in repository and create a version

Advantages

1) The versions are stored in the repository; hence they are available as backups.

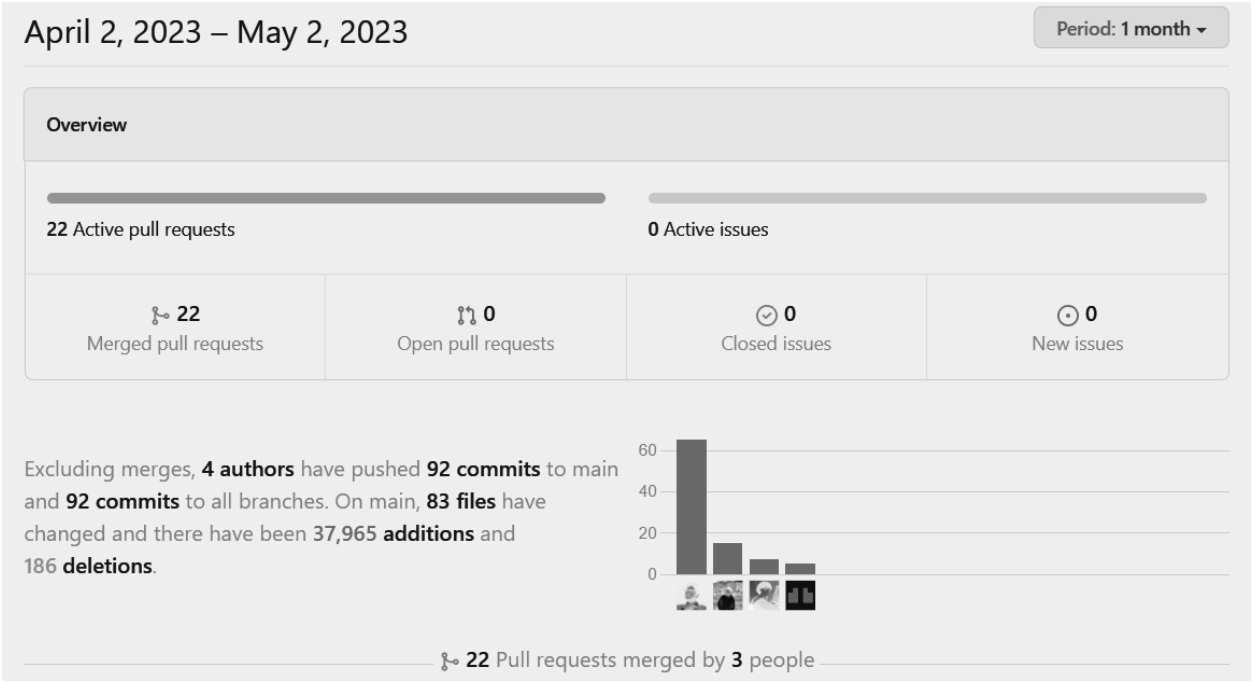
2) Multiple people can work simultaneously on same files/source code, without losing the changes made by other developers

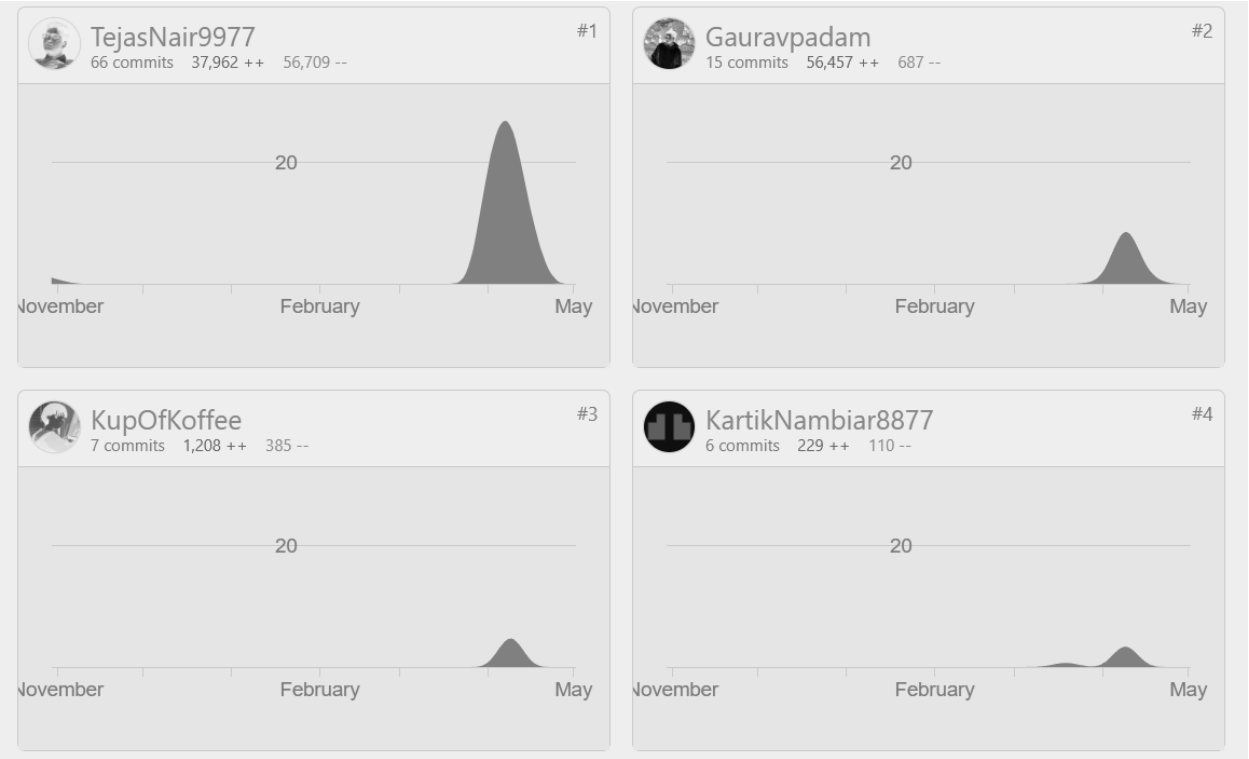
3) It is easy to find the files with specifications as a versions are stored with version numbers

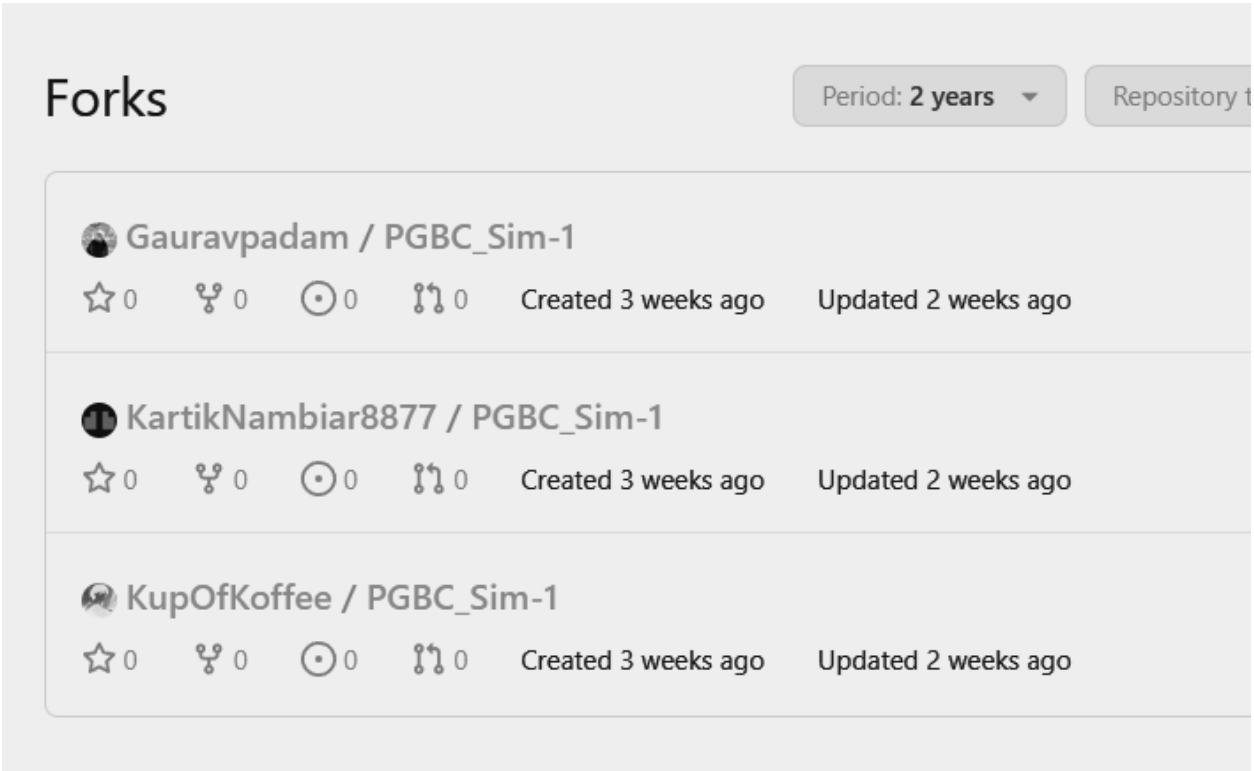
GitHub offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features. Unlike Git, which is strictly a command- line tool, GitHub provides a Web-based graphical interface and desktop as well as mobile integration. It also provides access control and several collaboration features such as bug tracking, feature requests, task management for every project.

OUTPUT:

https://github.com/TejasNair9977/PGBC_Sim




TejasNair9977
66 commits 37,962 ++ 56,709 --
#1
20
November
February
May
Gauravpadam
15 commits 56,457 ++ 687 --
#2
20
November
February
May
KupOfKoffee
7 commits 1,208 ++ 385 --
#3
20
November
February
May
KartikNambiar8877
6 commits 229 ++ 110 --
#4
20
November
February
May


Forks
Period: 2 years
Repository t
Gauravpadam / PGBC_Sim-1
0 0 0 0 Created 3 weeks ago Updated 2 weeks ago
KartikNambiar8877 / PGBC_Sim-1
0 0 0 0 Created 3 weeks ago Updated 2 weeks ago
KupOfKoffee / PGBC_Sim-1
0 0 0 0 Created 3 weeks ago Updated 2 weeks ago

Learning Outcomes: Students should have the ability to

LO1: to understand the need of doing configuration management.
LO2: Identify the dissimilarity between version and variant
LO3: provide the knowledge of the benefits of using version control
LO4: To understand the types of version control system

Outcomes: Upon completion of the course students will be able to create versions for the project.

Conclusion: Thus,we have successfully implemented and studied SCM tool github and done version updation using it.

Viva Questions:

1. **What is difference between git and Github?**
2. **What is version control? Why is it required?**
3. **What are other tools for version control**
4. **What are different types of version control?**

For Faculty Use

Correction Parameters	**Formative Assessment [40%]**	**Timely completion of Practical [40%]**	**Attendance / Learning Attitude [20%]**	
Marks Obtained				