

Getting started with Git & GitHub

Presented by @imanishbarnwal



Manish Kumar Barnwal

Sister Nivedita University, Kolkata

Hi everyone 🙌

I'm Manish

- Lead Organiser, Hack4Bengal
- LFX Mentee 21, OpenDaylight
- GitHub Campus Expert 🚩
- Gold Microsoft Learn Student Ambassador

[LinkedIn](#), [GitHub](#), [Facebook](#), [Website](#), [Blogs](#)



@imanishbarnwal

Learning Outcomes

- Familiar with Basic Linux commands
- Realize the importance of Version Control System
- Be able to use Git to track your code
- Be able to push and pull code from Github
- Be able to send a PR properly to an existing Github Repository



Social Media Challenge!!

Post your learning & best moments on twitter using
#hack4bengal #h4bs2 and tag @hack4bengal
@opencodeyard

GIVEAWAY!

Flow

- Raise Doubts
- Hands On
- Fun quiz
- We would be here after the end



What is Git? Track

- Backup
- History
- Experiment
- Collaborate



How does Git do it - Snapshots AKA Commits

```
commit bf9ab5cf3e6688d089235522de517447a4e6ecd3 (HEAD -> master, origin/master, origin/HEAD)
```

```
Author: Manish Kumar Barnwal <manishbarnwal725@gmail.com>
```

```
Date: Thu Mar 3 23:19:41 2022 +0530
```

```
Update installation.md
```

```
commit 2d2ae89d20c8bf2f4496b29227aed071dab9c96f
```

```
Author: Manish Kumar Barnwal <manishbarnwal725@gmail.com>
```

```
Date: Thu Mar 3 23:12:36 2022 +0530
```

```
Create installation.md
```

```
commit e5402a32659e0e72a92c3703bb7a6bc0c9269751
```

```
Author: Manish Kumar Barnwal <manishbarnwal725@gmail.com>
```

```
Date: Thu Mar 3 22:58:10 2022 +0530
```

```
Update README.md
```



I prefer the real version control



I said the *real* version control



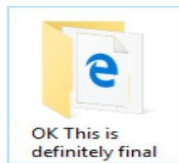
Final 2



Final Final



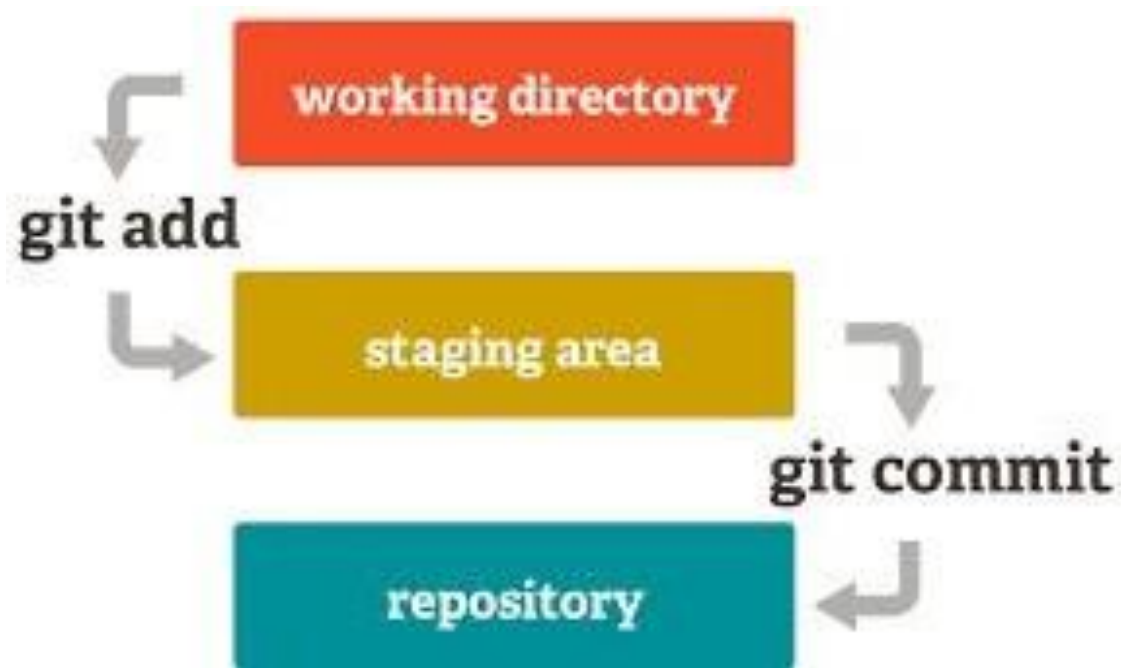
FINAL FOR REAL
THIS TIME



OK This is
definitely final

Perfection

Mental Model of Git Workflow



This Staging Area is Confusing!



WORKING
DIRECTORY



© CanStockPhoto.com - csp52904870

STAGING AREA



COMMIT !

DEMO

```
git init
```

```
git add FileName
```

```
git commit -m "A nice commit  
message"
```



Hands On by Building a “facebook Clone”



JUMPING BETWEEN STAGES - EVIL CAT TRILOGY



Undo the changes after a Commit

Case 1

- Working tree clean
- Cat comes up and adds rubbish files and and garbage content
- You come back and check **git status**. It's too chaotic
- You want to undo! Just do **git checkout** .
- And you have recovered your codebase



Restoring code after files are in Staging Area

Case 2

- This time it plans to commit
- It adds rubbish files and rubbish content
- It does git add .
- And luckily you come in time and it runs away
- How do you unstage?
- `git reset --hard HEAD`



Going back to a Previous Commit

Case 3

- This time the cat makes NOT 1 but 2 Rubbish commits
- **git reset --hard COMMIT_HASH_YOU_WANT_TO_GO_BACK**



When you revert a commit



u/DUTCHWIZARD

DOUBTS



Intro to Branching





Richard's copy of Codebase



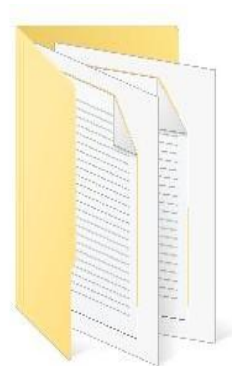
OriginalCodeBase



Gilfoyle's copy of Codebase

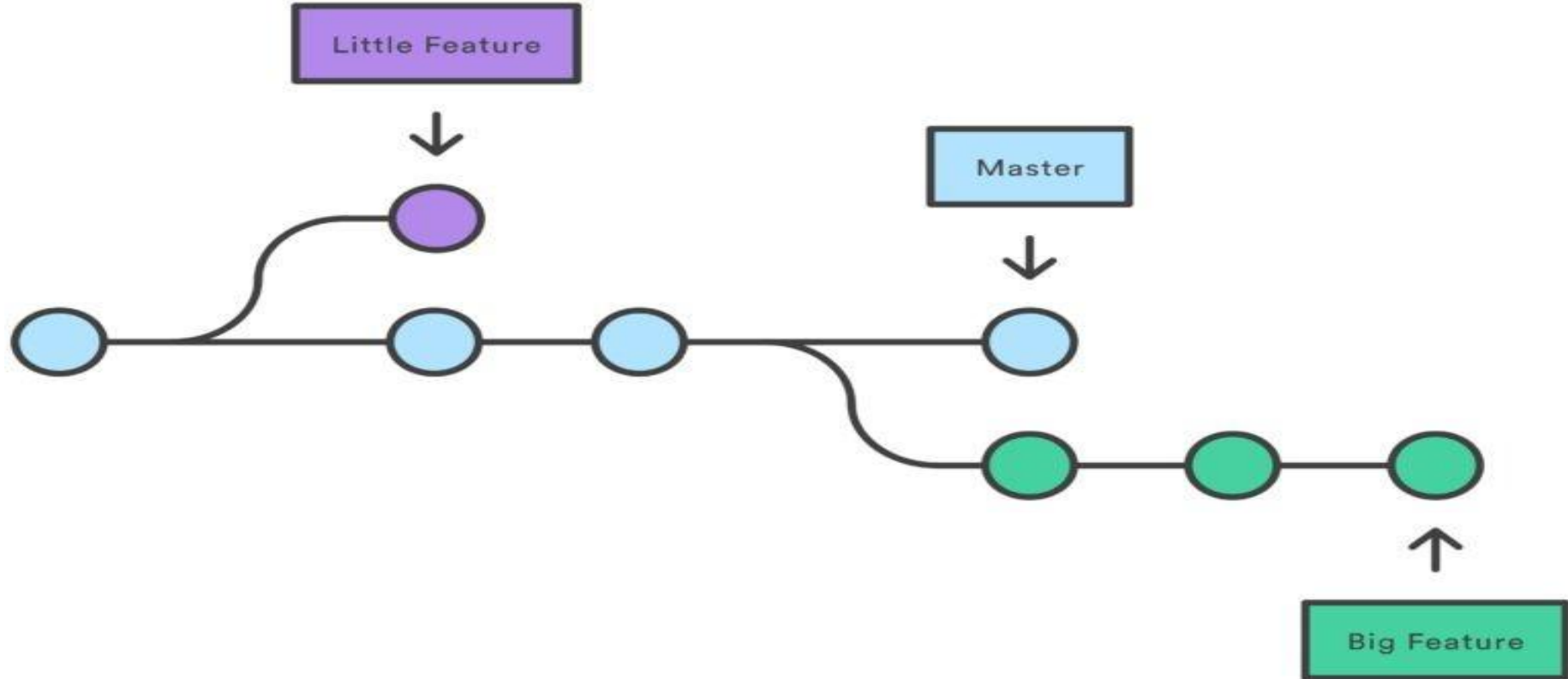


Eric's copy of Codebase



Dinesh's copy of Codebase

Branching



DOUBTS





GitHub

Alone we can do so little, together we can do so much

-Helen Keller

Let's ~~rock~~ push and ~~roll~~
pull



Remotes

```
git remote add origin  
https://github.com/username/repoName
```

```
git push -u origin master
```

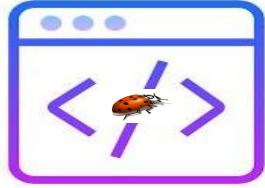


Demo - Send a PR

- Fork
- Clone
- New Branch
- Commit
- Push
- Pull Request (in github)



Workflow - Contributing to a Repository on



Hack4Bengal/codebase



Workflow - Contributing to a Repository on



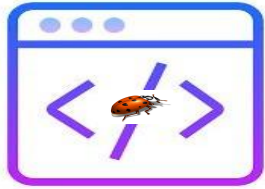
Hack4Bengal/Codebase



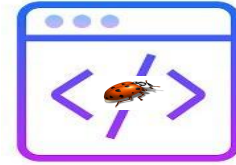
I can fix this!



Workflow - Contributing to a Repository on



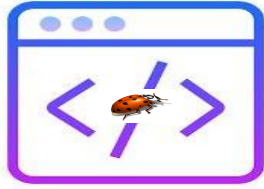
hack4bengal/codebase



eric/codebase



Workflow - Contributing to a Repository on



hack4bengal/codebase



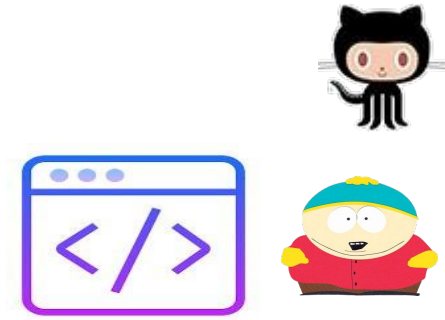
eric/codebase



Clone



Workflow - Contributing to a Repository on



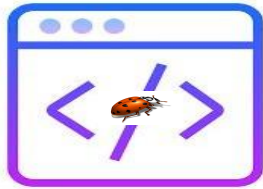
eric/codebase



Eric works hard and
fixes the bug and he
PUSHES

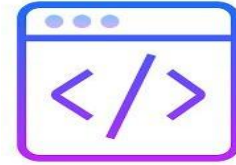


Workflow - Contributing to a Repository on



hack4bengal/codebase

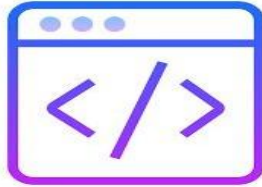
Pull Request



eric/codebase



Workflow - Contributing to a Repository on



hack4bengal/codebase

After **MERGING** the **Pull Request**, it is
now free of bugs!



We want **you** to send a
PR





SCAN ME!!
or
[bit.ly/h4b-gh-worksh](https://bit.ly/h4b-gh-workshop)
[op](https://bit.ly/h4b-gh-workshop)

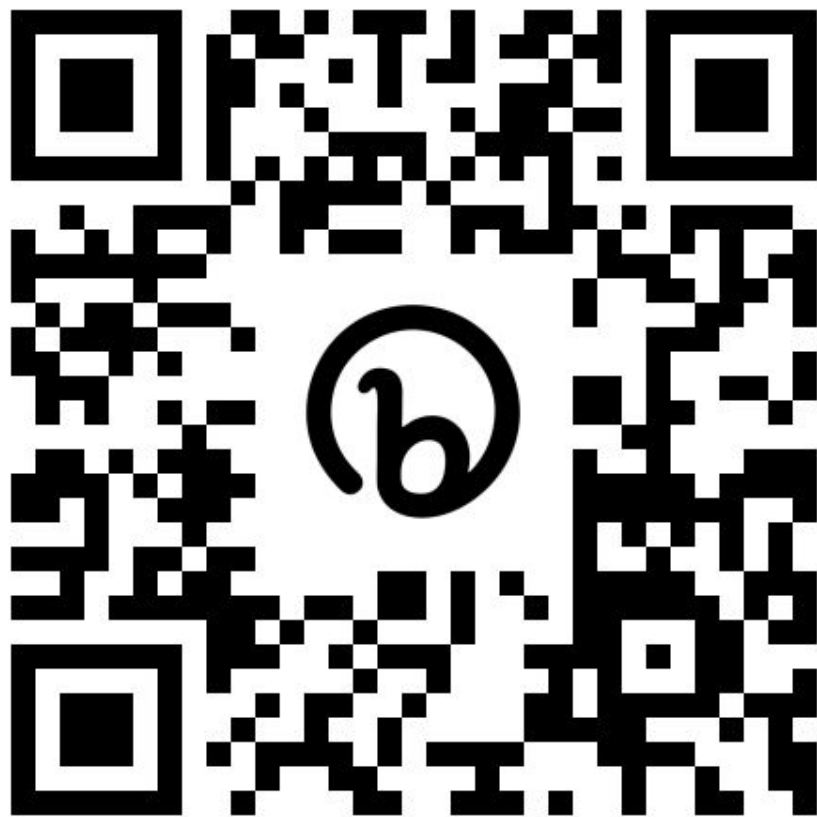


**You find a
interesting issue
in the kernel**

**You submitted
a pull request**

**Your pull request
is merged**





SCAN ME!!
or bit.ly/synergy-sdp



GitHub
Student Developer Pack

Some good places to try out

- [Google Summer of Code \(GSOC\)](#)
- [Major League Hacking Fellowship \(MLH\)](#)
- [Google Season of Docs \(GSOD\)](#)
- [Hacktoberfest by DigitalOcean](#)
- [The Linux Foundation Mentorship Program](#)
- [Hyperledger Mentorship Program](#)
- [Foss Asia Internship Program](#)
- [GirlScript Summer of Code \(GSSOC\)](#)
- [Redox Summer of Code \(RSOC\)](#)
- [Open Summer of Code \(OSOC\)](#)
- [Outreachy \(For Girls only\)](#)



For
more...

- Find your GitHub Cheatsheet [here](#)
- Check out for advance resources [here](#)
- Get [GitHub Student Pack](#)
- Checkout out [Github Pages](#), host your static site for free



DOUBTS



Thank You!!

