

Part 1 - Basics

- Init

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo (master)
$ git init
Reinitialized existing Git repository in F:/Deqode/Deqode_git_demo/.git/
```

- Config

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo (master)
$ git config --global user.name "pratik-mk"
```

```
annonskull@Pratik:~$ git config --list
user.email=pratikdhoke13@gmail.com
user.name=pratik-mk
```

- Clone

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo (master)
$ git clone git@github.com:pratik-mk/Deqode_git_basic.git
Cloning into 'Deqode_git_basic'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
```

- Pull

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ ls
README.md

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git pull
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 686 bytes | 5.00 KiB/s, done.
From github.com:pratik-mk/Deqode_git_basic
  80f2db7..e9da47d  main      -> origin/main
Updating 80f2db7..e9da47d
Fast-forward
 pull_request.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 pull_request.txt

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ ls
pull_request.txt  README.md
```

- Push

```

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git commit -m "Push and commit test"
[main 361b16f] Push and commit test
1 file changed, 1 insertion(+)
create mode 100644 pushtest.txt

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 336 bytes | 336.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:pratik-mk/Deqode_git_basic.git
e9da47d..361b16f main -> main

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git push origin master
error: src refspec master does not match any
error: failed to push some refs to 'github.com:pratik-mk/Deqode_git_basic.git'

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git push origin main
Everything up-to-date

```

- **Sample Query:** Why git is one of the most popular VCS in the industry?
open source, decentralized

Part 2 - Commit Lifecycle

- Add

```

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git add -A
warning: LF will be replaced by CRLF in pushtest.txt.
The file will have its original line endings in your working directory

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   pushtest.txt

```

- Commit

```

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   commit.txt

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git commit -m "Commit command test"
[main 7b9a7dd] Commit command test
1 file changed, 1 insertion(+)
create mode 100644 commit.txt

```

- Reset

```

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   reset_check.txt

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git reset reset_check.txt

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    reset_check.txt

nothing added to commit but untracked files present (use "git add" to track)

```

- Rm

```

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git rm -f commit.txt
rm 'commit.txt'

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ ls
difftest.txt  pull_request.txt  pushtest.txt  README.md  reset_check.txt

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    deleted:   commit.txt
    new file:   difftest.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    reset_check.txt

```

- Amend

```

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main) 12:59
$ git commit --amend
[main 1384271] amend commit check
Date: Fri May 28 15:13:25 2021 +0530
2 files changed, 4 insertions(+)
create mode 100644 difftest.txt
create mode 100644 reset_check.txt

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git log
commit 1384271238b41ecfef2cb9b6466d5d7130572c7f (HEAD -> main)
Author: pratik-mk <pratikhoke13@gmail.com>
Date: Fri May 28 15:13:25 2021 +0530

    amend commit check

```

- Sample Query: What is Sha Hash?
- Git uses **SHA-1-generated hashes** to identify revisions and protect code against corruption

- Diff

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git diff
warning: LF will be replaced by CRLF in commit.txt.
The file will have its original line endings in your working directory
diff --git a/commit.txt b/commit.txt
index 07b88cb..b4a84d9 100644
--- a/commit.txt
+++ b/commit.txt
@@ -1,3 @@
  commit command example
+adding extra content
+
```

- log

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git log
commit 7c86b5eb907092a6f098a01afcb1f183f57c0a83 (HEAD -> main, origin/main, origin/HEAD)
Author: pratik-mk <pratikdhoke13@gmail.com>
Date: Fri May 28 15:13:25 2021 +0530

    test ammend

commit 361b16ffaf633f95d318d3c9a0ccb1173f9482ca
Author: pratik-mk <pratikdhoke13@gmail.com>
Date: Fri May 28 14:59:58 2021 +0530

    Push and commit test

commit e9da47d4f937126415686b1eb8948fb5a87bf9d6
Author: Pratik Dhoke <pratikdhoke13@gmail.com>
Date: Fri May 28 14:57:35 2021 +0530

    Create HEAD
```

- stash

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (stash_test)
$ git stash save "stash check"
Saved working directory and index state On stash_test: stash check

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (stash_test)
$ git status
On branch stash_test
nothing to commit, working tree clean

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (stash_test)
$ git stash list
stash@{0}: On stash_test: stash check

Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (stash_test)
$ git stash pop stash@{0}
On branch stash_test
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   stashtut.txt
```

- revert

```
Asus@Pratik MINGW64 /f/Deqode/Deqode_git_demo/Deqode_git_basic (main)
$ git revert HEAD~1
Removing pushtest.txt
[main 6d2394c] Revert "Push and commit test"
 1 file changed, 1 deletion(-)
 delete mode 100644 pushtest.txt
```

- **Sample Query:** How git calculates differences? Hint: HEAD it runs two different **internal** variations on **git diff** : one to compare HEAD to the index/staging-area, and one to compare the staging-area to the **work-tree**.

