



FEBRUARY 18, 2023

DevOps Classroomnotes 18/Feb/2023

Hashing

- Hashing algorithms are used to generate a random number.
- If the message is same, Hash will be same
- There is no way to generate message from hash
- Algorithms
 - MD5
 - SHA1
 - SHA256

Lets Dive into How git works

- To understand git we will be using two plumbing commands

```
git cat-file -t
# it tells the type of what you are looking at
git cat-file -p
# it prints the values
```

- We have done 3 commits



- Lets find the type and contents of latest commit

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -t 2bef4aa
commit

Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p 2bef4aa
tree cba9813d150b1be8f445a61bd50b44bca4985223
parent 2a30086d2d4c1d4a5547db7c17ab5daed494cd6d
author shaikkhajaibrahim <qtikhajacloud@gmail.com> 1676689569 +0530
committer shaikkhajaibrahim <qtikhajacloud@gmail.com> 1676689569 +0530

Added comments
```

- parent refers to previous commit
- author/committer is username and email configured
- message
- tree in git refers to folder/directory & blob refers to file

- Lets see the contents of previous commit

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p 2a30086
tree 0dd755c506eead9c324bed95c08adc65138b195c
parent caca38f9def10530ec040295fbc10a46cd32c1b
author shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689508 +0530
committer shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689508 +0530

Added empty files
```

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p caca38f
tree b8d76bc8378818320eee5e112d0b738feebc6c11
author shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689453 +0530
committer shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689453 +0530

Added basic structure
```

- Lets figure out the contents of first commit which is tree

b8d76bc8378818320eee5e112d0b738feebc6c11

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -t b8d76bc8378818320eee5e112d0b738feebc6c11
tree

Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p b8d76bc8378818320eee5e112d0b738feebc6c11
100644 blob e69de29bb2d1d6434b8b29ae775ad8c2e48c5391    Readme.md
```

- Lets see the contents of file Readme.md e69de29bb2d1d6434b8b29ae775ad8c2e48c5391
- Now go to the second commit and print the contents

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p 2a30086
tree 0dd755c506eead9c324bed95c08adc65138b195c
parent caca38f9def10530ec040295fbc10a46cd32c1b
author shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689508 +0530
committer shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689508 +0530

Added empty files

Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p 0dd755c506eead9c324bed95c08adc65138b195c
100644 blob e69de29bb2d1d6434b8b29ae775ad8c2e48c5391    Readme.md
040000 tree d2bd908b5d11f6a1bf7574de0f723f00e9d69272    src
040000 tree d2bd908b5d11f6a1bf7574de0f723f00e9d69272    test

Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$
```

- two blobs have same id as the contents are same, same hash is generated by SHA1 algorithm
- Lets see contents of src

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p d2bd908b5d11f6a1bf7574de0f723f00e9d69272
100644 blob e69de29bb2d1d6434b8b29ae775ad8c2e48c5391    main.py
```

- as hash is same even the contents of test also will be same.
- main.py is an empty file,so the Hash matches with README.md as this is also empty
- Lets see contents of latest commit

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p 2bef4aa
tree cba9813d150b1be8f445a61bd50b44bca4985223
parent 2a30086d2d4c1d4a5547db7c17ab5daed494cd6d
author shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689569 +0530
committer shaikkhajaibrahim <qtkhajacloud@gmail.com> 1676689569 +0530

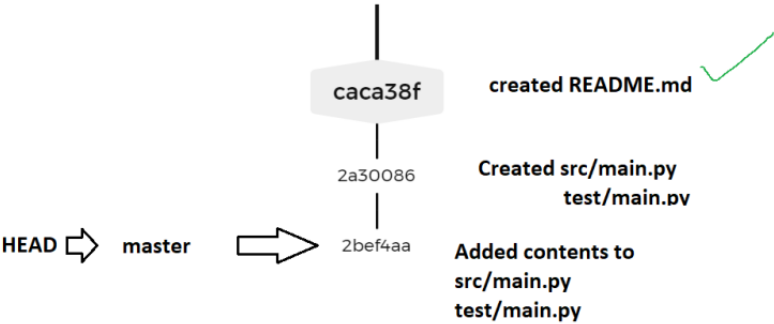
Added comments
```

- Now the tree of latest commit

```
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p cba9813d150b1be8f445a61bd50b44bca4985223
100644 blob e69de29bb2d1d6434b8b29ae775ad8c2e48c5391      Readme.md
040000 tree f6489ce9a632743829038457716c4215692c2332      src
040000 tree 4950f52ab0be7ec3879b9fa3c606c92d9e4a621f      test

Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p f6489ce9a632743829038457716c4215692c2332
100644 blob c1da2d6bcb6ea84ceed1e827b3e7b1cc7f52ea7c      main.py

Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$ git cat-file -p c1da2d6bcb6ea84ceed1e827b3e7b1cc7f52ea7c
# This is main application file
Dell@DESKTOP-TM7SH71 MINGW64 /c/temp/gitpractice/understanding (master)
$
```



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