# CS200: Software Tools and Technology - II

# <u>Assignment 1 : Report</u>

Deadline: Friday, 28.04.2019

### **Group Members**

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#### **Problem Statement**

Write a command line tool in your favourite language to analyze the full log of a git repository and find out commits in which less than 10 lines changed among all the files. Show the working with possible use cases.

#### **Repository To try out Command:**

Github Link: <a href="https://github.com/panchbhai1969/stat2">https://github.com/panchbhai1969/stat2</a>

Report Pdf and Bash Script to be run is included in the repository.

**Readme.md** describes steps to run the command line tool.

#### Code:

Bash Script is written in **script.sh** . When we ran the tool it gave us a list of all the hashes of the commits in which condition of no of changes satisfies.

#### **Output Screenshots:**

We made a Command Line Tool named 'line' by aliasing the script

#### 1. line command

It gives a list of all commits in which less than 'K' lines are changed. K is an argument given. If we do not give no. of lines as an argument, it will by default take no of lines limit as 10.

```
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```

```
hrishikesh@hrishikesh-HP-Pavilion-Notebook:~/stat2$ line 10
Commait with less than 10 line changes.

commit hash val :cb73a1595c3f6ebe87d773e80d10bff7lb1cde
Lines changed :4

commit hash val :fe2d37364ceb3483b194fe89df384a811d5a5b41
Lines changed :5

commit hash val :fe3d3b1547ed1fd5202a802c020a328fb6713f131
Lines changed :2

commit hash val :f448f3cb65b8a7b6d0eceaa8b1d7le7d82464fba
Lines changed :2

commit hash val :f944940c1b6398eldcb2d74dbb2f6d31a4606d9f
Lines changed :4

commit hash val :d949884737118ea6cc308368172b0e9df9d3d08
Lines changed :2

commit hash val :d3098848737118ea6cc308368172b0e9df9d3d08
Lines changed :2

commit hash val :d309835cd132cf6dea757ffb559e42937841376
Lines changed :3

commit hash val :d309835cd132cf6dea757ffb559e42937841376
Lines changed :3

commit hash val :d3098616d585b25f3706a669b26e6ff9113a7ee55
Lines changed :3

commit hash val :a296e16d585b25f3706a669b26e6ff9113a7ee55
Lines changed :2

commit hash val :a3062ce5944e24e744b8a26af286ccaa476c0c46
Lines changed :2

commit hash val :a3062ce5944e24e74b8a26af286ccaa476c0c46
Lines changed :2
```

```
rishikesh@hrishikesh-HP-Pavilion-Notebook:~/stat2$ line 5
Commit with less than 5 line changes.
 ommit hash_val :cb743a1505c3f6ebe087d773e80d10bff71b1cde
ines changed :4
commit hash val :69dblb247edlfd6202a802c020a328fb6713f131
.ines changed :2
 ommit hash val :5744940clb6390eldcb2d74dbb2f6d3la4606d9f
ines changed :4
 ommit hash_val :da910848737118ea6ce300368172b0e9df9d3d08
ines changed :2
 ommit hash_val :270dcff5d02e217aaa29a7ce69ac42bdddff86db
ines changed :2
 commit hash_val :fd309e35cd132cf6dea757ffb559e42937041376
ines changed :3
 commit hash val :a296e16d585b25f3706a669b26e6ff9113a7ee55
ines changed :1
************
 ommit hash_val :d9d2ece5944e24e744b8a26af286ccaa476c0c46
ines changed :2
:ommit hash val :2f433c8a49426a794fd4b0db03da02e7347la9a7
.ines changed :2
commit hash val :69db1b247ed1fd6202a802c020a328fb6713f131
ines changed :2
commit hash val :f448f3cb05b8a7b6d0eceaa8b1d71e7d82464fba
.ines changed :2
......
 commit hash_val :da910848737118ea6ce300368172b0e9df9d3d08
.ines changed :2
 ommit hash_val :270dcff5d02e217aaa29a7ce69ac42bdddff86db
.ines changed :2
commit hash val :a296e16d585b25f3706a669b26e6ff9113a7ee55
.ines changed :1
************
 ommit hash_val :d9d2ece5944e24e744b8a26af286ccaa476c0c46
ines changed :2
 ommit hash_val :2f433c8a49426a794fd4b0db03da02e7347la9a7
.ines changed :2
*************
```

#### 2. Bash Script

It gives a list of all commits in which less than 'K' lines are changed. K is an argument given.

When we run bash script without giving anything as an argument, it takes K = 10 by default.

```
bright kesh@hrishixesh-NP-Pavilion-Notebook:-/stat2$ ./script.sh
Default
Commit hash val :ch73a1595:3f6ebe87d773e80d10bff7lb1cde
Lines changed :4
commit hash val :f62d37364ceb3483b194fe89df384a811d5a5b41
Lines changed :5
commit hash val :f69db1b247ed1fd6202a802c020a328fb6713f131
Lines changed :2
commit hash val :f448f3cb05b8a7b6d0eceaa8b1d7le7d82464fba
Lines changed :2
commit hash val :f344940c1b6390eldcb2d74dbb2f6d31a4606d9f
Lines changed :4
commit hash val :g744940c1b6390eldcb2d74dbb2f6d31a4606d9f
Lines changed :2
commit hash val :d3910848737118ea6cc300368172b0e9df9d3d08
Lines changed :2
commit hash val :g70dcff5d02e217aaa29a7cc69ac42bdddff8dbb
Lines changed :2
commit hash val :g70dcff5d02e217aaa29a7cc69ac42bdddff8dbb
Lines changed :2
commit hash val :g80e16d585b25f3766a669b26e6ff9113a7ee55
Lines changed :3
commit hash val :a296e16d585b25f3706a669b26e6ff9113a7ee55
Lines changed :1
commit hash val :a206e26944e24e744b8a26af286ccaa476c9c46
Lines changed :2
commit hash val :a206e26944e24e744b8a26af286ccaa476c9c46
Lines changed :2
commit hash val :a206e26944e24e744b8a26af286ccaa476c9c46
Lines changed :2
commit hash val :a243ac8a4946a794fdbe0b83da02e73471a9a7
Lines changed :2
commit hash val :2443ac8a4946a794fdbe0b83da02e73471a9a7
Lines changed :2
```

```
hrishikesh@hrishikesh-HP-Pavilion-Notebook:-/stat2$ ./script.sh 10
Commit hash val :cb73a31595c316ebe887d773e80d10bff7lblcde
Lines changed :4

commit hash val :fc2d37364ceb3483b194fe09df384a81ld5a5b41
Lines changed :5

commit hash val :fd8dblb247ed1fd6202a802c020a328fb6713f131
Lines changed :2

commit hash val :fd48f3cb05b8a7b6d0eceaa8bld7le7d82464fba
Lines changed :2

commit hash val :fd48f3cb05b8a7b6d0eceaa8bld7le7d82464fba
Lines changed :2

commit hash val :gd48f3cdb58b37b6d0eceaa8bld7le7d82464fba
Lines changed :4

commit hash val :gd48f3cfd6d648f373118ea6ce300368172b0e9df9d3d08
Lines changed :2

commit hash val :gd309e35cd132cf6dea757ffb559e42937041376
Lines changed :2

commit hash val :gd309e35cd132cf6dea757ffb559e42937041376
Lines changed :3

commit hash val :e36a1bfc749dc67f9a165099468044a0b97581cb
Lines changed :7

commit hash val :e36a1bfc749dc67f9a165099468044a0b97581cb
Lines changed :1

commit hash val :e36a1bfc749dc67f9a16509946804666ff9113a7ee55
Lines changed :1

commit hash val :c36a26ce5944e24e744b8a26af286ccaa476c0c46
Lines changed :2

commit hash val :26433c8a49426a794fd4b0db03da62e73471a9a7
Lines changed :2
```

```
rishikesh@hrishikesh-HP-Pavilion-Notebook:-/stat2$ ./script.sh 5
Commit with less than 5 line changes.
 ommit hash val :f448f3cb05b8a7b6d0eceaa8b1d71e7d82464fba
ines changed :2
 commit hash val :da910848737118ea6ce300368172b0e9df9d3d08
ines changed :2
 ommit hash val :270dcff5d02e217aaa29a7ce69ac42bdddff86db
ines changed :2
 ommit hash_val :fd309e35cd132cf6dea757ffb559e42937041376
ines changed :3
 ommit hash_val :2f433c8a49426a794fd4b0db03da02e73471a9a7
.ines changed :2
**************
commit hash_val :69db1b247ed1fd6202a802c020a328fb6713f131
Lines changed :2
commit hash_val :f448f3cb05b8a7b6d0eceaa8b1d71e7d82464fba
Lines changed :2
******
commit hash_val :da910848737118ea6ce300368172b0e9df9d3d08
Lines changed :2
commit hash_val :270dcff5d02e217aaa29a7ce69ac42bdddff86db
Lines changed :2
commit hash_val :a296e16d585b25f3706a669b26e6ff9113a7ee55
Lines changed :1
commit hash_val :d9d2ece5944e24e744b8a26af286ccaa476c0c46
Lines changed :2
commit hash_val :2f433c8a49426a794fd4b0db03da02e73471a9a7
Lines changed :2
```

## **Bash Script**

```
#!/bin/bash
var=$(git log --stat | grep "|" | awk '{print $3}')
arr=($var)
stuff=($1)
```

```
len=${#stuff[@]}
zero=0
val=$1
if [ $len -eq $zero ]
then
  val=10
  echo Default
fi
echo Commit with less than $val line changes.
echo "*********
index=()
commit_final=()
change_final=()
commit=($(git log --stat | grep "commit" | awk '{print $2}'))
for i in "${!commit[@]}"; do
  commit_changes=0
  com="commit"
   if [ ${commit[i]} == $com ]
```

```
then
    continue
   fi
   re='^[0-9]+$'
   temp=0
   commit_changes=($(git log --stat --max-count=1 ${commit[i]} | grep
"|" | awk '{print $3}'))
   for v in "${!commit_changes[@]}"; do
       if ! [[ \{\text{commit\_changes[v]}\} = \text{ve }]] ; then
           continue
       fi
       temp=$(($temp + ${commit_changes[v]}))
   done
   commit_changes=$temp
   zero=0
   if [ $commit_changes -eq $zero ]
   then
    continue
   fi
   commit_final+=(${commit[i]})
   change_final+=($commit_changes)
```

done

```
for i in "${!commit_final[@]}"; do
  #echo ${commit_final[i]}
  #echo ${change_final[i]}
  continue
done
for i in "${!change_final[@]}"; do
  if [ ${change_final[i]} -lt $val ]
      then
          index += (\$i)
  fi
done
for i in "${!index[@]}"; do
  ind=${index[i]}
   echo commit hash_val :${commit_final[ind]}
   echo Lines changed :${change_final[ind]}
   echo "*********
```

done