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1. Establish a local repository for your project with a descriptive name. Set up Git configurations by adding a username and email address. Display and modify the Git configurations, and verify if the changes are reflected in the .git/config file post-editing. Showcase the utilization of both Git Local and Global configurations.

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root@DESKTOP-0ANCI6F:.git# cat config

[core]

    repositoryformatversion = 0

    filemode = true

    bare = false

    logallrefupdates = true

root@DESKTOP-0ANCI6F:.git# git config user.name arman

root@DESKTOP-0ANCI6F:.git# git config user.email armansk9129@gmail.com

root@DESKTOP-0ANCI6F:.git# ls

HEAD branches config description hooks info objects refs

root@DESKTOP-0ANCI6F:.git# cat config

[core]

    repositoryformatversion = 0

    filemode = true

    bare = false

    logallrefupdates = true

[user]

    name = arman

    email = armansk9129@gmail.com

```
root@DESKTOP-0ANCI6F:~# git config --local --list

core.repositoryformatversion=0

core.filemode=true

core.bare=false

core.logallrefupdates=true

user.name=arman

user.email=armansk9129@gmail.com

root@DESKTOP-0ANCI6F:~#

root@DESKTOP-0ANCI6F:~# git config --global user.name arman12

root@DESKTOP-0ANCI6F:~# git config --global user.email arman912@gmail.com

root@DESKTOP-0ANCI6F:~# git config --global --list

user.name=arman12

user.email=arman912@gmail.com


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local repository

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root@DESKTOP-0ANCI6F:~# mkdir repos

root@DESKTOP-0ANCI6F:~# cd repos/

root@DESKTOP-0ANCI6F:repos# ll

total 0

drwxr-xr-x 1 root root 512 Jan  3 13:26 ./

drwx------ 1 root root 512 Jan  3 13:26 ../

root@DESKTOP-0ANCI6F:repos# touch file1{1..3}.txt

root@DESKTOP-0ANCI6F:repos# ls

file11.txt  file12.txt  file13.txt
```

```
root@DESKTOP-0ANCI6F:repos# git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /root/repos/.git/
root@DESKTOP-0ANCI6F:repos# git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        file11.txt
        file12.txt
        file13.txt

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

```
root@DESKTOP-0ANCI6F:repos# git add .

root@DESKTOP-0ANCI6F:repos# git status

On branch master


No commits yet


Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   file11.txt
        new file:   file12.txt
        new file:   file13.txt


root@DESKTOP-0ANCI6F:repos# git commit -m "3 files are added""

> ^C

root@DESKTOP-0ANCI6F:repos# git commit -m "3 files are added"

[master (root-commit) 3bf9e18] 3 files are added

 3 files changed, 0 insertions(+), 0 deletions(-)

 create mode 100644 file11.txt

 create mode 100644 file12.txt

 create mode 100644 file13.txt

root@DESKTOP-0ANCI6F:repos# git status

On branch master

nothing to commit, working tree clean

root@DESKTOP-0ANCI6F:repos# git branch -l

* master
```

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2. Set up a local repository for your project with a meaningful name. Explore the default branch in the local Git repository. Sequentially create five files, committing each with informative messages. Share the Git log output through multiple methods once the process is complete.

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root@DESKTOP-0ANCI6F:~# cd project-cloud/

root@DESKTOP-0ANCI6F:project-cloud# ls

root@DESKTOP-0ANCI6F:project-cloud# touch file{1..5}.txt

root@DESKTOP-0ANCI6F:project-cloud# ls

file1.txt file2.txt file3.txt file4.txt file5.txt

root@DESKTOP-0ANCI6F:project-cloud# git init

root@DESKTOP-0ANCI6F:project-cloud# git add file1.txt

root@DESKTOP-0ANCI6F:project-cloud# git commit -m "file 1 is added into repository"

[master (root-commit) 4253961] file 1 is added into repository

 1 file changed, 0 insertions(+), 0 deletions(-)

 create mode 100644 file1.txt

root@DESKTOP-0ANCI6F:project-cloud# git status

On branch master

Untracked files:

  (use "git add <file>..." to include in what will be committed)

     file2.txt

     file3.txt

     file4.txt

     file5.txt

root@DESKTOP-0ANCI6F:project-cloud# git add file2.txt

root@DESKTOP-0ANCI6F:project-cloud# git commit -m "file 2 is added into repository"

[master 49f83fe] file 2 is added into repository

 1 file changed, 0 insertions(+), 0 deletions(-)

 create mode 100644 file2.txt

root@DESKTOP-0ANCI6F:project-cloud# git status

On branch master

Untracked files:

  (use "git add <file>..." to include in what will be committed)

    file3.txt

    file4.txt

    file5.txt

commit d7dd0b1902159201c104bfa769e5b178bd0fe4cc (HEAD -> master)

Author: arman12 <arman912@gmail.com>

Date: Wed Jan 3 14:07:22 2024 +0530

    file 5 is added into repository

commit df6417b0ad0fc8407ec69f40c28f53edc5ad4fed

Author: arman12 <arman912@gmail.com>

Date: Wed Jan 3 14:07:12 2024 +0530

    file 4 is added into repository

commit 350ad207a692dc7430dbc4175b9c2537a2ff83d6

Author: arman12 <arman912@gmail.com>

Date: Wed Jan 3 14:07:01 2024 +0530

    file 3 is added into repository

commit 49f83fec6c1ffe4d1f1902a2a43da740397f32bd

Author: arman12 <arman912@gmail.com>

Date: Wed Jan 3 14:06:38 2024 +0530

    file 2 is added into repository
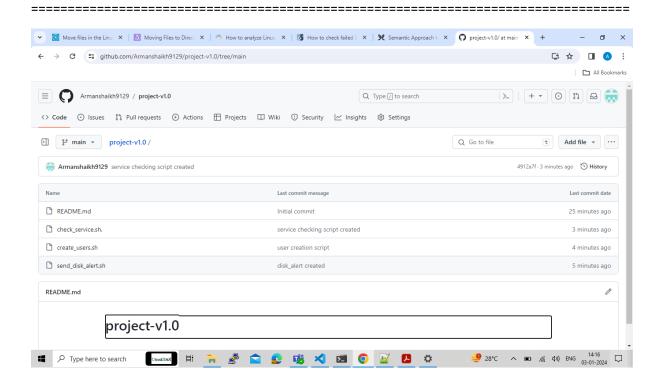

commit 4253961cdf40c2838afba004df869a6d88a61632

Author: arman12 <arman912@gmail.com>

Date: Wed Jan 3 14:05:08 2024 +0530

    file 1 is added into repository

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3. Open a GitHub account and initiate a remote Git repository. Examine the default branch in the remote repository. Create and commit the following files one by one with meaningful commit messages:

  i. README.md
  ii. send_disk_alert.sh
  iii. create_users.sh
  iv. check_service.sh.

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4. Establish a local repository for your project with a descriptive name. Illustrate the implementation of a Git-Ignore file by committing multiple files to the local repository.

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root@DESKTOP-0ANCI6F:project-cloud2# ls

assignment1.xml assignment2.xml assignment3.xml assignment4.xml assignment5.xml

root@DESKTOP-0ANCI6F:project-cloud2# git status

On branch master

No commits yet

Untracked files:

  (use "git add <file>..." to include in what will be committed)

        assignment1.xml

        assignment2.xml

        assignment3.xml

        assignment4.xml

        assignment5.xml

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

root@DESKTOP-0ANCI6F:project-cloud2# vi .gitignore

root@DESKTOP-0ANCI6F:project-cloud2# cat .gitignore

assignment2.xml

root@DESKTOP-0ANCI6F:project-cloud2# git commit -m "assignment 2 is ignored"

On branch master

Initial commit

Untracked files:

  (use "git add <file>..." to include in what will be committed)

    .gitignore

    assignment1.xml

    assignment3.xml

    assignment4.xml

    assignment5.xml

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

root@DESKTOP-0ANCI6F:project-cloud2# git status

On branch master

No commits yet

Untracked files:

  (use "git add <file>..." to include in what will be committed)

    .gitignore

    assignment1.xml

    assignment3.xml

    assignment4.xml

    assignment5.xml

root@DESKTOP-0ANCI6F:project-cloud2# git add .

root@DESKTOP-0ANCI6F:project-cloud2# git status

On branch master

No commits yet

Changes to be committed:

  (use "git rm --cached <file>..." to unstage)

    new file: .gitignore

    new file: assignment1.xml

    new file: assignment3.xml

    new file: assignment4.xml

    new file: assignment5.xml

root@DESKTOP-0ANCI6F:project-cloud2# git log

fatal: your current branch 'master' does not have any commits yet

root@DESKTOP-0ANCI6F:project-cloud2# git commit -m "assignment 2 is ignored"

[master (root-commit) 9c657a4] assignment 3 is ignored

 5 files changed, 1 insertion(+)

 create mode 100644 .gitignore

 create mode 100644 assignment1.xml

 create mode 100644 assignment3.xml

 create mode 100644 assignment4.xml

 create mode 100644 assignment5.xml

root@DESKTOP-0ANCI6F:project-cloud2# git log

commit 9c657a429876c215cd15816f9388b7d9b8197605 (HEAD -> master)

Author: arman12 <arman912@gmail.com>

Date: Wed Jan 3 14:32:09 2024 +0530

    assignment 2 is ignored

root@DESKTOP-0ANCI6F:project-cloud2#

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5. Create a local repository with a meaningful project name. Demonstrate the utilization of GIT working area, staging area, and commit area. Experiment with committing, deleting, and restoring files from the repository. Additionally, add files to the staging area and restore them from the staging area.

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root@DESKTOP-0ANCI6F:project-cloud2# ls

assignment1.xml assignment2.xml assignment3.xml assignment4.xml assignment5.xml

root@DESKTOP-0ANCI6F:project-cloud2# rm -rf assignment4.xml --- deleted file

root@DESKTOP-0ANCI6F:project-cloud2# git status

On branch master

Changes not staged for commit:

  (use "git add/rm <file>..." to update what will be committed)

  (use "git restore <file>..." to discard changes in working directory)

     deleted: assignment4.xml

root@DESKTOP-0ANCI6F:project-cloud2# ls

assignment1.xml assignment2.xml assignment3.xml assignment5.xml

root@DESKTOP-0ANCI6F:project-cloud2# git restore assignment4.xml --- restoring the file

root@DESKTOP-0ANCI6F:project-cloud2# ls

assignment1.xml assignment2.xml assignment3.xml assignment4.xml assignment5.xml

```
root@DESKTOP-0ANCI6F:project-cloud2# git restore --stage project1.pdf

root@DESKTOP-0ANCI6F:project-cloud2# git status

On branch master

Changes to be committed:

  (use "git restore --staged <file>..." to unstage)

        new file:   project2.pdf

        new file:   project3.pdf

        new file:   project4.pdf

        new file:   project5.pdf


Untracked files:

  (use "git add <file>..." to include in what will be committed)

        project1.pdf
```