Unit 5: Exercise to practise. Create a new repository using the local Git and complete the following parts:

Create the corresponding repository on GitHub and add the remote to the local one.

Create two branches Unit-1 and Unit-2 from the empty master/main branch.

Upload a different file for each branch. Then, push the changes to GitHub.

Checkout Unit-1 and update the same line of one file both from the local and remote repository. Solve the conflicts.

Merge the branches Unit-1 and Unit-2 to master/main.

Create the corresponding repository on GitHub and add the remote to the local one.

Create a directory and go into it.

```
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ mkdir InformationSystems zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ cd InformationSystems
```

Create an empty repository.

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git init

```
Initialized empty Git repository in
/home/zeus/Documents/GitHub/InformationSystems/.git/
```

Global settings. Add some SVN-like aliases

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git config --global alias.st status && git config --global alias.co checkout && git config --global alias.br branch && git config --global alias.up rebase && git config --global alias.ci commit

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git config --global --list

```
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
user.name=raimundo.blanco
user.email=raimbp@gmail.com
credential.helper=store
core.editor=nano
alias.st=status
alias.co=checkout
alias.br=branch
alias.up=rebase
alias.ci=commit

# git config --global --unset user.mail "" to unset
# git config --global --edit to manually edit the configuration
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git remote add origin https://github.com/rblaper/InformationSystems.git

```
git remote set-url origin [repo-url] # to edit an existing remote git remote –v # check existing remotes
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git config --get remote.origin.url

```
https://github.com/rblaper/InformationSystems.git
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git branch

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git status

```
On branch master

No commits yet

nothing to commit (create/copy files and use "git add" to track)
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log

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

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ nano readme.text

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git status

```
On branch master

No commits yet

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

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

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git add readme.text

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git status

```
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
  new file: readme.text
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git commit -m "Initial commit"

```
[master (root-commit) 6b839c0] Initial commit
1 file changed, 9 insertions(+)
```

```
create mode 100644 readme.text
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log

 $\verb|commit|| 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (HEAD -> master)|$

Author: raimundo.blanco <raimbp@gmail.com>
Date: Tue Dec 22 19:59:59 2020 +0100

Initial commit

Rename branch for avoiding conflicts o synchronising

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git branch -M main zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git branch

*main

Create two branches Unit-1 and Unit-2 from the empty master/main branch. Upload a different file for each branch. Then, push the changes to GitHub.

```
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git branch Unit-1
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git branch
     Unit-1
   *main
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git checkout Unit-1
   Switched to branch 'Unit-1'
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ nano readme_Unit_1.text
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ ls -l
   total 4
   -rw-rw-r-- 1 zeus zeus 523 dic 22 19:56 readme.text
   -rw-rw-r-- 1 zeus zeus 0 dic 22 20:35 readme Unit 1.text
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git status
   On branch Unit-1
   Untracked files:
     (use "git add <file>..." to include in what will be committed)
    readme Unit 1.text
   nothing added to commit but untracked files present (use "git add" to
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git commit -m "Unit-1 file creation"
   [Unit-1 531c920] Unit-1 file creation
    1 file changed, 1 insertion(+)
    create mode 100644 readme_Unit_1.text
git zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git log --oneline
   531c920 (HEAD -> Unit-1) Unit-1 file creation
   6b839c0 (main) Initial commit
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git status
   On branch Unit-1
   nothing to commit, working tree clean
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git branch
   * Unit-1
     Main
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git checkout main
   Switched to branch 'main'
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git checkout -b Unit-2
   Switched to a new branch 'Unit-2'
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ Is -I
   -rw-rw-r-- 1 zeus zeus 523 dic 22 19:56 readme.text
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git branch
```

Unit-1
* Unit-2
Main

```
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ nano readme Unit 2.text
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log

```
commit 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (HEAD -> Unit-2, main)
Author: raimundo.blanco <raimbp@gmail.com>
Date:    Tue Dec 22 19:59:59 2020 +0100
    Initial commit
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git status

```
On branch Unit-2
Untracked files:
    (use "git add <file>..." to include in what will be committed)
    readme_Unit_2.text

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

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git add readme_Unit_2.text

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git commit -m "Unit-2 file creation"

```
[Unit-2 f1f80e3] Unit-2 file creation
1 file changed, 2 insertions(+)
create mode 100644 readme Unit 2.text
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log

```
commit f1f80e3adfcc756721a46fdec2fbb94cc8742edc (HEAD -> Unit-2)
Author: raimundo.blanco <raimbp@gmail.com>
Date:    Tue Dec 22 21:38:49 2020 +0100

    Unit-2 file creation

commit 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (main)
Author: raimundo.blanco <raimbp@gmail.com>
Date:    Tue Dec 22 19:59:59 2020 +0100

Initial commit
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log

```
commit f1f80e3adfcc756721a46fdec2fbb94cc8742edc (HEAD -> Unit-2)
Author: raimundo.blanco <raimbp@gmail.com>
Date:    Tue Dec 22 21:38:49 2020 +0100

    Unit-2 file creation

commit 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (main)
Author: raimundo.blanco <raimbp@gmail.com>
Date:    Tue Dec 22 19:59:59 2020 +0100

Initial commit
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git checkout Unit-1

```
Switched to branch 'Unit-1'
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log

```
commit 531c9207f904efc60276b397342e143ca97eb639 (HEAD -> Unit-1)
```

```
Author: raimundo.blanco <raimbp@gmail.com>
Date: Tue Dec 22 20:46:41 2020 +0100

Unit-1 file creation

commit 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (main)
Author: raimundo.blanco <raimbp@gmail.com>
Date: Tue Dec 22 19:59:59 2020 +0100

Initial commit
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git checkout main

```
Switched to branch 'main'
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log

```
commit 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (HEAD -> main)
Author: raimundo.blanco <raimbp@gmail.com>
Date:    Tue Dec 22 19:59:59 2020 +0100
    Initial commit
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$
```

Updating the branch main on the remote repository

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git push -u origin main

```
Username for 'https://github.com': rblaper
Password for 'https://rblaper@github.com':
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 483 bytes | 241.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/rblaper/InformationSystems.git
  * [new branch] main -> main
Branch 'main' set up to track remote branch 'main' from 'origin'.
```

Increasing login time

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git config --global credential.helper 'cache -- timeout=3600'

Updating Branch Unit-2 on the remote repository

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git push -u origin Unit-1

```
Username for 'https://github.com': rblaper
Password for 'https://rblaper@github.com':
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 299 bytes | 299.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'Unit-1' on GitHub by visiting:
remote: https://github.com/rblaper/InformationSystems/pull/new/Unit-1
remote:
To https://github.com/rblaper/InformationSystems.git
* [new branch] Unit-1 -> Unit-1
Branch 'Unit-1' set up to track remote branch 'Unit-1' from 'origin'.
```

Updating Branch Unit-2 on the remote repository

```
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 310 bytes | 310.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'Unit-2' on GitHub by visiting:
remote: https://github.com/rblaper/InformationSystems/pull/new/Unit-2
remote:
To https://github.com/rblaper/InformationSystems.git
* [new branch] Unit-2 -> Unit-2
Branch 'Unit-2' set up to track remote branch 'Unit-2' from 'origin'.
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log Unit-1

```
commit 531c9207f904efc60276b397342e143ca97eb639 (HEAD -> Unit-1,
origin/Unit-1)
Author: raimundo.blanco <raimbp@gmail.com>
Date: Tue Dec 22 20:46:41 2020 +0100

Unit-1 file creation

commit 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (origin/main, main)
Author: raimundo.blanco <raimbp@gmail.com>
Date: Tue Dec 22 19:59:59 2020 +0100

Initial commit
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git checkout Unit-2

```
Switched to branch 'Unit-2' Your branch is up to date with 'origin/Unit-2'.
```

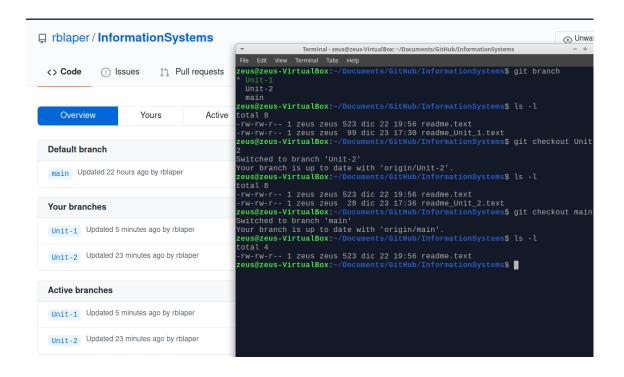
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git log Unit-2

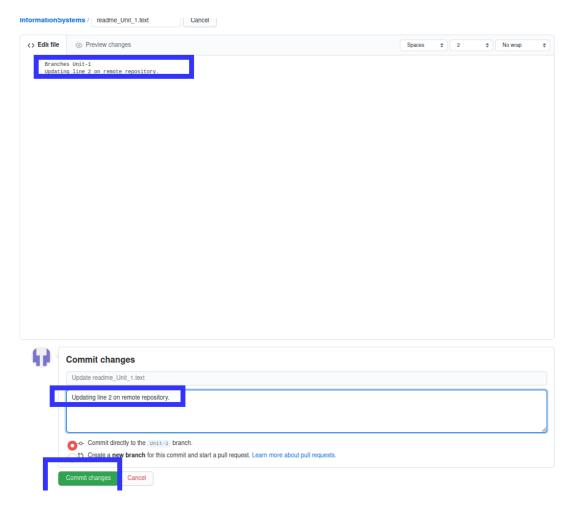
```
commit f1f80e3adfcc756721a46fdec2fbb94cc8742edc (HEAD -> Unit-2,
origin/Unit-2)
Author: raimundo.blanco <raimbp@gmail.com>
Date: Tue Dec 22 21:38:49 2020 +0100

Unit-2 file creation

commit 6b839c0e17868d6d96c909b96f4c0b7e2a3b5c83 (origin/main, main)
Author: raimundo.blanco <raimbp@gmail.com>
Date: Tue Dec 22 19:59:59 2020 +0100

Initial commit
```





Solving conflicts

Editing a file at the same time on the remote and on the local repository cause conflicts.

Start editing on local

```
Terminal - zeus@zeus-VirtualBox: ~/Documents/GitHub/InformationSystems
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ nano readme_Unit_1
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ cat readme_Unit_1.
text
Branches Unit-1
Updating line 2 on local repository branch Unit-1.
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git status
On branch Unit-1
Your branch is up to date with 'origin/Unit-1'.
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
no changes added to commit (use "git add" and/or "git commit -a")
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git log --oneline
531c920 (HEAD -> Unit-1, origin/Unit-1) Unit-1 file creation 6b839c0 (origin/main, main) Initial commit
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git add readme_Uni
t 1.text
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git status
On branch Unit-1
Your branch is up to date with 'origin/Unit-1'.
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
         modified:
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git log --oneline
531c920 (HEAD -> Unit-1, origin/Unit-1) Unit-1 file creation 6b839c0 (origin/main, main) Initial commit zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git commit -m "Upd
ating line 2 on local repository."
[Unit-1 20e5c80] Updating line 2 on local repository.
1 file changed, 1 insertion(+)
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ git log --oneline
 10e5c80 (HEAD -> Unit-1) Updating line 2 on local repository.
131c920 (origin/Unit-1) Unit-1 file creation
15b839c0 (origin/main, main) Initial commit
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$
```

On github edit the same file.

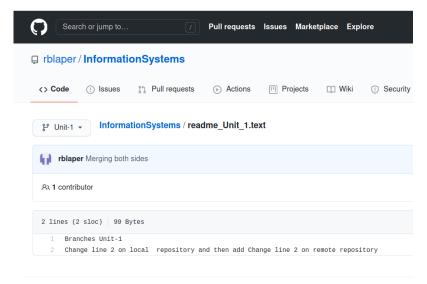
Commit changes on both sides and then push / pull

Edit the file and select the changes to be acepted

```
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ cat readme_Unit_1.

text
Branches Unit-1
<<<<<< HEAD
Change line 2 on local repository
=======
Change line 2 on remote repository
>>>>>> 4f7d2713c31ecdae3cb8fed6bf6cbebc4cfb6d98
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$
```

```
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$ cat readme_Unit_1.
text
Branches Unit-1
Change line 2 on local repository and then add Change line 2 on remote reposi
tory
zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems$
```



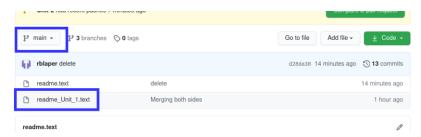
Merging Branches

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git merge Unit-1

```
Updating 6b839c0..d94f47d
Fast-forward
  readme_Unit_1.text | 2 ++
  1 file changed, 2 insertions(+)
  create mode 100644 readme Unit 1.text
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git push origin

Total 0 (delta 0), reused 0 (delta 0)
To github.com:rblaper/InformationSystems.git
6b839c0..d94f47d main -> main



zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ mkdir Unit_2/

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ mv readme_Unit_2.t Unit_2/

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git branch

Unit-1 Unit-2

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git checkout Unit-2

```
Dreadme.text
Switched to branch 'Unit-2'
Your branch is up to date with 'origin/Unit-2'.
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git add Unit_2

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git commit -m "Unit-2 folder"

```
[Unit-2 53901f9] Unit-2 folder
3 files changed, 13 insertions(+)
  create mode 100644 Unit_2/readme.text
create mode 100644 Unit_2/readme_Unit_2.text
```

zeus@zeus-VirtualBox:~/Documents/GitHub/InformationSystems\$ git push origin

