1. Создание локального репозитория в текущей папке.

```
Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3

mkdir work

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3

cd work

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work

git init
Initialized empty Git repository in D:/Лабы/ПООИС/Lab3/work/.git/

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
```

2. Просмотреть статус текущего репозитория.

```
Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git status
On branch main
No commits yet
nothing to commit (create/copy files and use "git add" to track)
```

3. Что такое ветка и какая ветка является обычно основной.

Ветка — это параллельная версия репозитория. Она позволяет вам работать над новой функцией вашего проекта, не затрагивая основную версию проекта. После того, как вы закончите работу над новой функцией, вы можете объединить ветку обратно с основной версией проекта.

4. Добавить файл в контекст, который будет коммититься.

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ touch hello.html
```

5.Создать коммит на основе текущего контекста и указать для него комментарий.

```
Maксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git add hello.html

Maксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git commit -m "created hello.html"
[main (root-commit) 9ba9d2a] created hello.html
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 hello.html
```

6.Создать коммит, включающий изменения всех наблюдаемых файлов и указать для него комментарий.

```
Максим@KOMPUTER MINGW64 /<mark>d/Лабы/ПООИС/Lab3/work (main)</mark>
$ echo "Hello, World!" >> hello.txt
 Таксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ echo "Hello, World!" >> hello1.txt
 Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
warning: in the working copy of 'hello.txt', LF will be replaced by CRLF the next time Git touches it warning: in the working copy of 'hello1.txt', LF will be replaced by CRLF the next time Git touches it
Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git commit -m -a "Commited all files"
error: pathspec 'Commited all files' did not match any file(s) known to git
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git commit -m "Commited all files"
 [main 6bfa7a3] Committed all files
2 files changed, 2 insertions(+)
```

7.Просмотреть протокол(лог) коммитов.

```
аксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git log
  nmit 6bfa7a359011654b82831a2bfcf59b9d50d72520 (HEAD -> main)
Author: MaksimDedkov <maksimdedkov2006@gmail.com>
Date: Tue Oct 22 18:17:09 2024 +0300
    Committed all files
 commit eeb3d4bbf933fbbda722d847d4a269064609bd28
Author: MaksimDedkov <maksimdedkov2006@gmail.com>
Date:
       Tue Oct 22 18:14:21 2024 +0300
   Committed all files
commit 9ba9d2a45134a09627ab48e74bf612f42cbe8444
Author: MaksimDedkov <maksimdedkov2006@gmail.com>
       Tue Oct 22 18:12:46 2024 +0300
Date:
    created hello.html
```

8.Посмотреть информацию о текущих настройках.

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git config --list
diff.astextplain.textconv=astextplain
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
http.sslbackend=openssl
http.sslcainfo=C:/Program Files/Git/mingw64/etc/ssl/certs/ca-bundle.crt
core.autocrlf=true
core.fscache=true
core.symlinks=false
pull.rebase=false
credential.helper=manager
credential.https://dev.azure.com.usehttppath=true
init.defaultbranch=master
init.defaultbranch=main
core.autocrlf=true
core.safecrlf=warn
user.name=MaksimDedkov
user.email=maksimdedkov2006@gmail.com
care.autocrlf=true
care.safecrlf=warn
core.repositoryformatversion=0
core.filemode=false
core.bare=false
core.logallrefupdates=true
core.symlinks=false
core.ignorecase=true
```

9. Убрать файл из контекста.

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git reset hello.txt
```

10.Посмотреть изменения в файле по сравнению с последним коммитом.

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git show HEAD
 ommit 6bfa7a359011654b82831a2bfcf59b9d50d72520 (HEAD -> main)
Author: MaksimDedkov <maksimdedkov2006@gmail.com>
Date: Tue Oct 22 18:17:09 2024 +0300
    Committed all files
diff --git a/hello.txt b/hello.txt
index e69de29..8ab686e 100644
   a/hello.txt
+++ b/hella.txt
₽@ -0,0 +1 @@
⊦Hello, World!
diff --git a/hello1.txt b/hello1.txt
index e69de29..8ab686e 100644
  a/hello1.txt
+++ b/hello1.txt
@ -0,0 +1 @@
Hello, World!
```

11. Убрать изменения относительно последнего коммита из файла.

```
Maксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)

$ git log --pretty=format:"%h %ad | %s%d [%an]" --date=short
6bfa7a3 2024-10-22 | Commited all files (HEAD -> main) [MaksimDedkov]
eeb3d4b 2024-10-22 | Commited all files [MaksimDedkov]
9ba9d2a 2024-10-22 | created hello.html [MaksimDedkov]

Maксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)

$ git reset --hard HEAD
HEAD is now at 6bfa7a3 Commited all files
```

12. Добавить в контекст коммита все измененные и созданный файлы

```
$ touch hell.txt
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git status
On branch main
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)
Untracked files:
  (use "git add <file>..." to include in what will be committed)
no changes added to commit (use "git add" and/or "git commit -a")
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git add .
warning: in the working copy of 'hello.txt', LF will be replaced by CRLF the next time Git touches it
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git commit -m "Created hell.txt and editted hello.txt"
[main 41f3889] Created hell.txt and editted hello.txt
2 files changed, 1 insertion(+)
create mode 100644 hell.txt
```

13. изменить глобальные/локальные настройки

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git config user.name MaksimD

Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git config user.name
MaksimD
```

```
Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git config --global user.email maksimdedkov2006@gmail.com

Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git config --global user.email
maksimdedkov2006@gmail.com
```

14. переписать имя пользователя

```
Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git config user.name MaksimD

Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git config user.name
MaksimD
```

15. просмотреть существующие ветки

```
Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git branch
* main
```

16. создать новую ветку

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git branch branch1
```

17. переключиться на другую ветку

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git switch branch1
D hello.txt
D hello1.txt
Switched to branch 'branch1'
```

18. создать новую ветку и сразу же переключиться на неё максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1) \$ git switch -c branch2 Switched to a new branch 'branch2'

19. удалить ветку/удалить ветку, даже если она не примержена максим@KOMPUTER MINGW64 /d/лабы/ПООИС/Lab3/work (branch2) \$ git branch -d branch1
Deleted branch branch1 (was 41f3889).

20. примержить изменения из указанной ветки в текущую максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main) \$ git merge branch1

21. в каком случае могут появиться конфликты? сделать конфликт Ошибка может возникнуть, если в двух ветках репозитория была изменена одна и та же часть файла.

```
ER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
  echo "text" >> hello.html
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git add hello.html
warning: in the working copy of 'hello.html', LF will be replaced by CRLF the next time Git touches it
Максим@KOMPUTER MINGW64 /<mark>d/Лабы/ПООИС/Lab3/work (main)</mark>
$ git commit -m "adding conflict"
[main 3fe9c54] adding conflict
 1 file changed, 1 insertion(+)
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git switch branch1
Switched to branch 'branch1'
 Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ echo "conflict" >> hello.html
 аксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git add hello.html
warning: in the working copy of 'hello.html', LF will be replaced by CRLF the next time Git touches it
Максим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git commit -m "conflict"
[branch1 af2e637] conflict
 1 file changed, 1 insertion(+)
 аксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git merge main
Auto-merging hello.html
CONFLICT (content): Merge conflict in hello.html
Automatic merge failed; fix conflicts and then commit the result.
```

22. как посмотреть в каких файлах конфликты

23. как устранить конфликты

```
hello.html + ×
               < <html>
         2
                  <head>
                  </head>
               < <body>
                       conflict
         6
                       text
                  </body>
                  </html>
 |аксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1|MERGING)
$ git add hello.html
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1|MERGING)
$ git commit -m "resolved conflict"
[branch1 cb5504a] resolved conflict
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git status
On branch branch1
nothing to commit, working tree clean
Максим@KOMPUTER MINGW64 /<mark>d/Лабы/ПООИС/Lab3/work (branch1)</mark>
$ git log --all --graph --pretty=format:"%h %ad | %s%d [%an]" --date=short
    cb5504a 2024-10-23 | resolved conflict (HEAD -> branch1) [MaksimDedkov
  * 3fe9c54 2024-10-23 | adding conflict (main) [MaksimDedkov]
  af2e637 2024-10-23 | conflict [MaksimDedkov]
  2aa39d5 2024-10-23 | added hello.html [MaksimDedkov]
```

24. как переключиться на указанный коммит

```
Максим@KOMPUTER MINGW64 /<mark>d/Лабы/ПООИС/Lab3/work (branch1)</mark>
$ git log --all --graph --pretty=format:"%h %ad | %s%d [%an]" --date=short
    cb5504a 2024-10-23 | resolved conflict (HEAD -> branch1) [MaksimDedkov]
  * 3fe9c54 2024-10-23 | adding conflict (main) [MaksimDedkov]
| af2e637 2024-10-23 | conflict [MaksimDedkov]
  2aa39d5 2024-10-23 | added hello.html [MaksimDedkov]
 Таксим@КОМРUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git checkout 2aa39d5
Note: switching to '2aa39d5'.
You are in 'detached HEAD' state. You can look around, make experimental
changes and commit them, and you can discard any commits you make in this
state without impacting any branches by switching back to a branch.
If you want to create a new branch to retain commits you create, you may
do so (now or later) by using -c with the switch command. Example:
  git switch -c <new-branch-name>
Or undo this operation with:
  git switch -
Turn off this advice by setting config variable advice.detachedHead to false
HEAD is now at 2aa39d5 added hello.html
```

25. сделать ребазирование(rebase) текущей ветки

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git add hello.html

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git commit -m "rebased branch"
On branch branch1
nothing to commit, working tree clean

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git switch main
Switched to branch 'main'

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git rebase branch1
Successfully rebased and updated refs/heads/main.
```

26. устранение конфликтов во время ребазирования

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git rebase main
warning: skipped previously applied commit 5da7eb1
hint: use --reapply-cherry-picks to include skipped commits
hint: Disable this message with "git config advice.skippedCherryPicks false"
Auto-merging empty.txt
CONFLICT (content): Merge conflict in empty.txt
error: could not apply d84e10a... conflict
hint: Resolve all conflicts manually, mark them as resolved with
hint: "git add/rm <conflicted_files>", then run "git rebase --continue".
hint: You can instead skip this commit: run "git rebase --skip".
hint: To abort and get back to the state before "git rebase", run "git rebase --abort".
hint: Disable this message with "git config advice.mergeConflict false"
Could not apply d84e10a... conflict
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1|REBASE 1/1)
$ git status
interactive rebase in progress; onto
Last command done (1 command done):
                                              ss: onto 6fffb44
  pick d84e10a conflict
No commands remaining.
You are currently rebasing branch 'branch1' on '6fffb44'.
  (fix conflicts and then run "git rebase --continue")
(use "git rebase --skip" to skip this patch)
(use "git rebase --abort" to check out the original branch)
Unmerged paths:
   (use "git restore --staged <file>..." to unstage)
(use "git add <file>..." to mark resolution)
hoth modified: __empty_tyt
no changes added to commit (use "git add" and/or "git commit -a")
```

empty.txt ⊅ X	
1	<<<<< HEAD
2	empty
3	======
4	text
5	>>>>> d84e10a (conflict)
6	

```
Maxcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1|REBASE 1/1)
$ git rebase --continue
Successfully rebased and updated refs/heads/branch1.

Maxcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git commit -m "rebased txt"
On branch branch1
nothing to commit, working tree clean

Maxcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git log --pretty=format:"%h %ad | %s%d [%an]" --date=short
df2671f 2024-10-23 | rebased (HEAD -> branch1) [MaksimDedkov]
6fffb44 2024-10-23 | added conflict (main) [MaksimDedkov]
0b7fb4b 2024-10-23 | added txt [MaksimDedkov]
c5c9560 2024-10-23 | adding conflict [MaksimDedkov]
621962c 2024-10-23 | adding conflict [MaksimDedkov]
2e02a62 2024-10-23 | resolved conflict [MaksimDedkov]
af2e637 2024-10-23 | resolved conflict [MaksimDedkov]
af2e637 2024-10-23 | adding conflict [MaksimDedkov]
af2e637 2024-10-23 | adding conflict [MaksimDedkov]
3fe9c54 2024-10-23 | adding conflict [MaksimDedkov]
2aa39d5 2024-10-23 | added hello.html [MaksimDedkov]
```

27. отменить ребазирование во время конфликтов

```
Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git rebase branch1
Auto-merging hello.html
CONFLICT (content): Merge conflict in hello.html
error: could not apply f84692b... conflict
hint: Resolve all conflicts manually, mark them as resolved with
hint: "git add/rm <conflicted_files>", then run "git rebase --continue".
hint: You can instead skip this commit: run "git rebase --skip".
hint: To abort and get back to the state before "git rebase", run "git rebase --abort".
hint: Disable this message with "git config advice.mergeConflict false"
Could not apply f84692b... conflict

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main|REBASE 1/1)
$ git rebase --abort

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git status
On branch main
nothing to commit, working tree clean
```

28. пропустить текущий конфликтный коммит и перейти к следующему

```
Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1)
$ git rebase main
Auto-merging hello.html
CONFLICT (content): Merge conflict in hello.html
error: could not apply 96e696b... conflict
hint: Resolve all conflicts manually, mark them as resolved with
hint: "git add/rm <conflicted_files>", then run "git rebase --continue".
hint: You can instead skip this commit: run "git rebase --skip".
hint: To abort and get back to the state before "git rebase", run "git rebase --abort".
hint: Disable this message with "git config advice.mergeConflict false"
Could not apply 96e696b... conflict

Makcum@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (branch1|REBASE 2/2)
$ git rebase --skip
Successfully rebased and updated refs/heads/branch1.
```

29. отправить изменения из локального репозитория для указанной ветки удалённый (дистанционный) репозиторий

```
Maκcum@KOMPUTER MINGW64 /d/Ja6ы/ΠΟΟΝC/Lab3/work (main)
$ git remote add origin https://github.com/MaksimDedkov/MDrep.git

Maκcum@KOMPUTER MINGW64 /d/Ja6ы/ΠΟΟΝC/Lab3/work (main)
$ git push origin main
info: please complete authentication in your browser...
Enumerating objects: 30, done.
Counting objects: 100% (30/30), done.
Delta compression using up to 16 threads
Compressing objects: 100% (21/21), done.
Writing objects: 100% (30/30), 2.55 KiB | 1.28 MiB/s, done.
Total 30 (delta 5), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (5/5), done.
To https://github.com/MaksimDedkov/MDrep.git
* [new branch] main -> main
```

30. забрать изменения из репозитория, для которого были созданы удалённые ветки по умолчанию

```
Максим@KOMPUTER MINGW64 /<mark>d/Лабы/ПООИС/Lab3/work (main)</mark>
$ git fetch origin
```

31. забрать изменения удалённой ветки из репозитория по умолчанию, основной ветки

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git fetch origin main
From https://github.com/MaksimDedkov/MDrep
* branch main -> FETCH_HEAD
```

32. создание копии репозитория

```
Maксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3
$ ls
work/

Maксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3
$ git clone work work1
Cloning into 'work1'...
done.

Maксим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3
$ ls
work/ work1/
```

33. переименовать последний коммит

```
Максим@KOMPUTER MINGW64 /<mark>d/Лабы/ПООИС/Lab3/work (main)</mark>
$ git log --pretty=format:"%h %ad | %s%d [%an]" --date=short
c6acObf 2024-10-23 | new conflict (HEAD -> main) [MaksimDedkov]
840c67d 2024-10-23 | conf [MaksimDedkov]
6fffb44 2024-10-23 | added conflict [MaksimDedkov]
0b7fb4b 2024-10-23 | added txt [MaksimDedkov]
c5c9560 2024-10-23 | adding conflict [MaksimDedkov]
621962c 2024-10-23 | conflict [MaksimDedkov]
2e02a62 2024-10-23 | adding conflict [MaksimDedkov]
cb5504a 2024-10-23 | resolved conflict [MaksimDedkov]
af2e637 2024-10-23 | conflict [MaksimDedkov]
3fe9c54 2024-10-23 | adding conflict [MaksimDedkov]
2aa39d5 2024-10-23 | added hello.html [MaksimDedkov]
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git commit -m "last conflict" --amend
[main e4e110c] last conflict
 Date: Wed Oct 23 22:27:02 2024 +0300
 1 file changed, 1 insertion(+)
Максим@KOMPUTER MINGW64 /<mark>d/Лабы/ПООИС/Lab3/work (main)</mark>
$ git log --pretty=format:"%h %ad | %s%d [%an]" --date=short
e4e110c 2024-10-23 | last conflict (HEAD -> main) [MaksimDedkov]
840c67d 2024-10-23 | conf [MaksimDedkov]
6fffb44 2024-10-23 | added conflict [MaksimDedkov]
Ob7fb4b 2024-10-23 | added txt [MaksimDedkov]
c5c9560 2024-10-23 | adding conflict [MaksimDedkov]
621962c 2024-10-23 | conflict [MaksimDedkov]
2e02a62 2024-10-23 | adding conflict [MaksimDedkov]
cb5504a 2024-10-23 | resolved conflict [MaksimDedkov]
af2e637 2024-10-23 | conflict [MaksimDedkov]
3fe9c54 2024-10-23 | adding conflict [MaksimDedkov]
2aa39d5 2024-10-23 | added hello.html [MaksimDedkov]
```

34. переименовать не последний коммит git rebase -i HEAD~n

35. скрыть изменения по сравнению с последним коммитом

```
Максим@KOMPUTER MINGW64 /d/Лабы/ПООИС/Lab3/work (main)
$ git stash
No local changes to save
```