

1. Repository git

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ echo "# alterra-learningGitGithub-repo" >> README.md

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git init
Reinitialized existing Git repository in C:/Users/alfik/Java/alterra-learningGitGithub-repo/.git/
```

2. Branching

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git branch
* master

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git branch development

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git branch
  development
* master

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git checkout development
Switched to branch 'development'

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git branch featureA

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git branch featureB

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git branch
* development
  featureA
  featureB
  master
```

3. Push, Pull, Stash and Merge

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git commit -m "menambahkan database.txt dan Main app"
[development d263810] menambahkan database.txt dan Main app
5 files changed, 57 insertions(+)
create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/PerpustakaanApp.class
create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/database.txt
create mode 100644 LocalDatabaseIO/src/PerpustakaanApp.java
create mode 100644 LocalDatabaseIO/src/database.txt

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git push origin development
info: please complete authentication in your browser...
Enumerating objects: 14, done.
Counting objects: 100% (14/14), done.
Delta compression using up to 12 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (11/11), 2.37 KiB | 809.00 KiB/s, done.
Total 11 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/alfikamuis/alterra-learningGitGithub-repo.git
c4da42e..d263810  development -> development
```

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git status
On branch development
Your branch is up to date with 'origin/development'.

nothing to commit, working tree clean

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git merge development
Updating c4da42e..d263810
Fast-forward
 .../LocalDatabaseIO/PerpustakaanApp.class      | Bin 0 -> 1735 bytes
 .../out/production/LocalDatabaseIO/database.txt | 5 +++
 LocalDatabaseIO/src/PerpustakaanApp.java        | 46 ++++++
 LocalDatabaseIO/src/database.txt                | 5 +++
 README.md                                       | 1 +
 5 files changed, 57 insertions(+)
 create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/PerpustakaanApp.class
 create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/database.txt
 create mode 100644 LocalDatabaseIO/src/PerpustakaanApp.java
 create mode 100644 LocalDatabaseIO/src/database.txt

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git push origin master
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/alfikamuis/alterra-learningGitGithub-repo.git
 c4da42e..d263810 master -> master
```

3.1 Git clone from github

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git clone -b development https://github.com/alfikamuis/alterra-learningGitGithub-repo.git
Cloning into 'alterra-learningGitGithub-repo'...
remote: Enumerating objects: 30, done.
remote: Counting objects: 100% (30/30), done.
remote: Compressing objects: 100% (20/20), done.
remote: Total 30 (delta 5), reused 29 (delta 4), pack-reused 0
Receiving objects: 100% (30/30), 4.92 KiB | 2.46 MiB/s, done.
Resolving deltas: 100% (5/5), done.

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git branch
* master

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git branch -a
* master
remotes/origin/HEAD -> origin/master
remotes/origin/development
remotes/origin/featureA
remotes/origin/featureB
remotes/origin/master
```

3.2 Push, Pull, Status, Merge FeatureA from development

```

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git checkout featureA
Switched to a new branch 'featureA'
branch 'featureA' set up to track 'origin/featureA'.

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git pull origin development
From https://github.com/alfikamuis/alterra-learningGitGithub-repo
 * branch                development -> FETCH_HEAD
Updating c4da42e..d263810
Fast-forward
 .../LocalDatabaseIO/PerpustakaanApp.class      | Bin 0 -> 1735 bytes
 .../out/production/LocalDatabaseIO/database.txt | 5 +++
 LocalDatabaseIO/src/PerpustakaanApp.java        | 46 +++++
 LocalDatabaseIO/src/database.txt                | 5 +++
 README.md                                       | 1 +
5 files changed, 57 insertions(+)
create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/PerpustakaanApp.class
create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/database.txt
create mode 100644 LocalDatabaseIO/src/PerpustakaanApp.java
create mode 100644 LocalDatabaseIO/src/database.txt

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git push --all
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/alfikamuis/alterra-learningGitGithub-repo.git
 c4da42e..d263810 featureA -> featureA

```

3.3 Push, Pull, Status, Merge FeatureA from FeatureB

```

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git checkout featureB
Switched to a new branch 'featureB'
branch 'featureB' set up to track 'origin/featureB'.

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureB)
$ git pull origin featureA
From https://github.com/alfikamuis/alterra-learningGitGithub-repo
 * branch                featureA -> FETCH_HEAD
Updating c4da42e..735050c
Fast-forward
 .../LocalDatabaseIO/PerpustakaanApp.class      | Bin 0 -> 1735 bytes
 .../out/production/LocalDatabaseIO/database.txt | 5 +++
 LocalDatabaseIO/src/CRUD/Utility.java          | 17 +++++
 LocalDatabaseIO/src/PerpustakaanApp.java        | 48 +++++
 LocalDatabaseIO/src/database.txt                | 5 +++
 README.md                                       | 1 +
6 files changed, 76 insertions(+)
create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/PerpustakaanApp.class
create mode 100644 LocalDatabaseIO/out/production/LocalDatabaseIO/database.txt
create mode 100644 LocalDatabaseIO/src/CRUD/Utility.java
create mode 100644 LocalDatabaseIO/src/PerpustakaanApp.java
create mode 100644 LocalDatabaseIO/src/database.txt

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureB)
$ git add .

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureB)
$ git commit -m "cloning dari featureB"
On branch featureB
Your branch is ahead of 'origin/featureB' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureB)
$ git push --all
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/alfikamuis/alterra-learningGitGithub-repo.git

```

4. Conflict merge featureA and featureB in development

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureB)
$ git status
On branch featureB
Your branch is up to date with 'origin/featureB'.

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)
    modified:   LocalDatabaseIO/src/CRUD/Utility.java

no changes added to commit (use "git add" and/or "git commit -a")

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureB)
$ git commit -am "merubah sout"
[featureB 5afb0b6] merubah sout
 1 file changed, 1 insertion(+), 1 deletion(-)

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureB)
$ git push --all
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 12 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 603 bytes | 603.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/alfikamuis/alterra-learningGitGithub-repo.git
 735050c..5afb0b6 featureB -> featureB
```

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git status
On branch featureA
Your branch is up to date with 'origin/featureA'.

nothing to commit, working tree clean

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git status
On branch featureA
Your branch is up to date with 'origin/featureA'.

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)
    modified:   LocalDatabaseIO/src/CRUD/Utility.java

no changes added to commit (use "git add" and/or "git commit -a")

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git commit -am "merubah sout"
[featureA e888c4f] merubah sout
 1 file changed, 1 insertion(+), 1 deletion(-)

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git push -all
error: did you mean `--all` (with two dashes)?

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git push --all
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 12 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 608 bytes | 608.00 KiB/s, done.
```

4.1 Merge conflicts

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (featureA)
$ git checkout development
Switched to branch 'development'
Your branch is up to date with 'origin/development'.

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git status
On branch development
Your branch is up to date with 'origin/development'.

nothing to commit, working tree clean

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git merge featureA featureB
Fast-forwarding to: featureA
Trying simple merge with featureB
Simple merge did not work, trying automatic merge.
Auto-merging LocalDatabaseIO/src/CRUD/Utility.java
ERROR: content conflict in LocalDatabaseIO/src/CRUD/Utility.java
fatal: merge program failed
Automatic merge failed; fix conflicts and then commit the result.
```

4.2 Resolution

```
String choice = "n";
while(!choice.equalsIgnoreCase("y")){
<<<<<< .merge_file_a10320
    System.out.print("mau dilanjutkan apa tidak?");

=====
    System.out.print("apakah lanjut gan?");
>>>>>> .merge_file_a12524
    choice = scan.nextLine();
    if (choice.equalsIgnoreCase("n")){return false;}
}
```

```
String choice = "n";
while(!choice.equalsIgnoreCase("y")){
    System.out.print("mau dilanjutkan apa tidak?");
    choice = scan.nextLine();
    if (choice.equalsIgnoreCase("n")){return false;}
}
```

```
alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development|MERGING)
$ git status
On branch development
Your branch is up to date with 'origin/development'.

All conflicts fixed but you are still merging.
(use "git commit" to conclude merge)

Changes to be committed:
  modified:   LocalDatabaseIO/src/CRUD/Utility.java

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development|MERGING)
$ git commit -am "merge conflicts dari featureA dan featureB"
[development 408d1c5] merge conflicts dari featureA dan featureB

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (development)
$ git push --all
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 230 bytes | 230.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/alfikamuis/alterra-learningGitGithub-repo.git
  735050c..408d1c5  development -> development
```

5. Merge no fast forward

```

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git log --oneline --graph --all
* 408d1c5 (origin/development, development) merge conflicts dari featureA dan featureB
| \
| * 5afb0b6 (origin/featureB, featureB) merubah sout
* | e888c4f (origin/featureA, featureA) merubah sout
|/
* 735050c menambahkan class util dengan fungsi yes/no? pada packg CRUD
* d263810 (HEAD -> master, origin/master, origin/HEAD) menambahkan database.txt dan Main app
* c4da42e menambahkan struktur project
* 8ae0870 menambah project kosong pertama

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git merge development --no-ff
Merge made by the 'ort' strategy.
 LocalDatabaseIO/src/CRUD/Utility.java | 17 ++++++++
 LocalDatabaseIO/src/PerpustakaanApp.java | 4 +++-
 2 files changed, 20 insertions(+), 1 deletion(-)
 create mode 100644 LocalDatabaseIO/src/CRUD/Utility.java

```

```

alfik@Alfika MINGW64 ~/java/alterra-learningGitGithub-repo (master)
$ git log --oneline --graph --all
* fe3a6c6 (HEAD -> master) Merge branch 'development'
| \
| * 408d1c5 (origin/development, development) merge conflicts dari featureA dan featureB
| | \
| | * 5afb0b6 (origin/featureB, featureB) merubah sout
| * | e888c4f (origin/featureA, featureA) merubah sout
| | /
| * 735050c menambahkan class util dengan fungsi yes/no? pada packg CRUD
|/
* d263810 (origin/master, origin/HEAD) menambahkan database.txt dan Main app
* c4da42e menambahkan struktur project
* 8ae0870 menambah project kosong pertama

```