```
MINGW64:/c/Users/k1e7l/qbrc ×
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~
$ git config --global init.defaultBranch main
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~
$ git branch -M newBname
fatal: not a git repository (or any of the parent directories): .git
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~
$ git init gbrch
Initialized empty Git repository in C:/Users/kle7l/gbrch/.git/
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~
$ cd gbrch
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git branch -M master
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (master)
$ git branch -M main
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ touch README
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git add README
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git commit -m A
[main (root-commit) c2e70d4] A
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 README
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git log --oneline
c2e70d4 (HEAD -> main) A
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ touch hi.txt
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git add hi.txt
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git commit -m B
[main a569c8d] B
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 hi.txt
<1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)</pre>
$ git log --oneline
a569c8d (HEAD -> main) B
c2e70d4 A
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 MINGW64:/c/Users/k1e7l/qbrc × + v
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git log -p
commit a569c8d38aead2c2288c6cac571412a0e9502183 (HEAD -> main)
Author: jw13k <smilejw13@dongyang.ac.kr>
Date: Sun Dec 10 23:45:46 2023 +0900
    В
diff --git a/hi.txt b/hi.txt
new file mode 100644
index 0000000..e69de29
commit c2e70d4bec6fb4b58a734b92a23e488fb8f6db1d
Author: jw13k <smilejw13@dongyang.ac.kr>
Date: Sun Dec 10 23:45:17 2023 +0900
    Α
diff --git a/README b/README
new file mode 100644
index 0000000..e69de29
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git branch topic
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git branch
* main
  topic
k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (main)
$ git branch -v
* main a569c8d B
  topic a569c8d B
k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (main)
$ git log --oneline --all
a569c8d (HEAD -> main, topic) B c2e70d4 A
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git switch [bname]
fatal: invalid reference: [bname]
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git checkout [bname]
error: pathspec '[bname]' did not match any file(s) known to git
k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (main)
$ git switch -
fatal: invalid reference: 0{-1}
k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (main)
$ git checkout -
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MINGW64:/c/Users/k1e7l/gbrc \times + \vee
 error: pathspec '-' did not match any file(s) known to git
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)</p>
$ git switch topic
Switched to branch 'topic'
 <1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)</pre>
   git switch -
Switched to branch 'main'
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)</pre>
$ git switch -d HEAD~
HEAD is now at c2e70d4 A
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch ((c2e70d4...))
$ ls
README
 <1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch ((c2e70d4...))</pre>
   git switch main
Previous HEAD position was c2e70d4 A
Switched to branch 'main'
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)</pre>
$ git switch topic
Switched to branch 'topic'
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)
$ echo 111 > to.txt
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)
$ git add to.txt
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (topic)</pre>
$ git commit -m TOP1
 [topic 550ad94] TOP1
 1 file changed, 1 insertion(+)
  create mode 100644 to.txt
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)
$ ls
hi.txt README to.txt
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (topic)</pre>
$ git log --oneline --all
    ad94 (HEAD -> topic) TOP1
 569c8d (main) B
 c2e70d4 A
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (topic)</pre>
$ echo main > ma.txt
 <1e7l@BOOK-V2TI50AE9C MINGW64 ~/gbrch (topic)</p>
$ git add ma.txt
```

```
k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)
$ git commit -m C
[topic 06f4c76] C
 1 file changed, 1 insertion(+)
 create mode 100644 ma.txt
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)
$ git log --oneline --all
 06f4c76 (HEAD -> topic) C
550ad94 TOP1
 a569c8d (main) B
 c2e70d4 A
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (topic)
$ git log --oneline --all --graph
* 06f4c76 (HEAD -> topic) C
* 550ad94 TOP1
* a569c8d (main) B
* c2e70d4 A
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)
$ git switch main
Switched to branch 'main'
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git log --oneline
 a569c8d (HEAD -> main) B
 c2e70d4 A
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git log --oneline --all
 96f4c76 (topic) C
550ad94 TOP1
 1569c8d (HEAD -> main) B
 c2e70d4 A
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (main)
$ git log --oneline
 a569c8d (HEAD -> main) B
 c2e70d4 A
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)
$ git log --oneline --graph --all
* 06f4c76 (topic) C
* 550ad94 TOP1
* a569c8d (HEAD -> main) B
* c2e70d4 A
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (main)
$ git switch topic
Switched to branch 'topic'
 k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch (topic)
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    MINGW64:/c/Users/k1e7l/qbrc × + v
  git log --oneline
 6f4c76 (HEAD -> topic) C
 550ad94 TOP1
 .569c8d (main) B
 2e70d4 A
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (topic)</pre>
$ git log --oneline --graph --all
* 06f4c76 (HEAD -> topic) C
 550ad94 TOP1
* a569c8d (main) B
* c2e70d4 A
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (topic)
$ git switch main
Switched to branch 'main'
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (main)</p>
$ git checkout HEAD~
Note: switching to 'HEAD~'.
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 c2e70d4 A
k1e7l@B00K-V2TI50AE9C MINGW64 ~/gbrch ((c2e70d4...))
$ git switch -c hotfix
Switched to a new branch 'hotfix'
k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (hotfix)
$ git checkout -b develop
Switched to a new branch 'develop'
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (develop)</p>
$ git branch
* develop
  hotfix
  main
  topic
 <1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (develop)</pre>
```

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MINGW64:/c/Users/k1e7l/gbrc ×
$ git checkout -b develop
Switched to a new branch 'develop'
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (develop)
$ git branch
* develop
  hotfix
  main
  topic
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (develop)
$ git log --oneline --graph --all
* 06f4c76 (topic) C
* 550ad94 TOP1
* a569c8d (main) B
* c2e70d4 (HEAD -> develop, hotfix) A
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (develop)
$ git branch -d hotfix
Deleted branch hotfix (was c2e70d4).
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (develop)
$ git log --oneline --graph --all
* 06f4c76 (topic) C
* 550ad94 TOP1
* a569c8d (main) B
* c2e70d4 (HEAD -> develop) A
 k1e7l@BOOK-V2TI5OAE9C MINGW64 ~/gbrch (develop)
```