```
[bonia@MacBook-Pro-Vadim practice3_2 % git switch mybranch
Already on 'mybranch'
Your branch is up to date with 'origin/mybranch'.
[bonia@MacBook-Pro-Vadim practice3_2 % nano sort.c
[bonia@MacBook-Pro-Vadim practice3_2 % git diff
diff --git a/practice3_2/sort.c b/practice3_2/sort.c
index 1e0c519..bf44d88 100644
--- a/practice3_2/sort.c
+++ b/practice3_2/sort.c
@@ -1,3 +1,5 @@
+#include <stdio.h>
+
 void bubbleSort(int arr[], int n) {
     for (int i = 0; i < n-1; i++) {
         for (int j = 0; j < n-i-1; j++) {
@@ -10,4 +12,13 @@ void bubbleSort(int arr[], int n) {
     }
 }

+int main() {
+    int arr[] = {7, 6, 5, 4, 3, 2, 1};
+    int n = sizeof(arr)/sizeof(arr[0]);
+    bubbleSort(arr, n);
+    printf("Sorted: \n");
+    for (int i = 0; i < n; i++)
+        printf("%d ", arr[i]);
+}
+
 // Add new line
bonia@MacBook-Pro-Vadim practice3_2 %
[bonia@MacBook-Pro-Vadim practice3_2 % git add sort.c
bonia@MacBook-Pro-Vadim practice3_2 %
```

Внесем требуемые изменения в sort.c и сравним. Добавим файл.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git diff --staged
diff --git a/practice3_2/sort.c b/practice3_2/sort.c
index 1e0c519..bf44d88 100644
--- a/practice3_2/sort.c
+++ b/practice3_2/sort.c
@@ -1,3 +1,5 @@
+#include <stdio.h>
+
 void bubbleSort(int arr[], int n) {
     for (int i = 0; i < n-1; i++) {
         for (int j = 0; j < n-i-1; j++) {
@@ -10,4 +12,13 @@ void bubbleSort(int arr[], int n) {
     }
 }

+int main() {
+    int arr[] = {7, 6, 5, 4, 3, 2, 1};
+    int n = sizeof(arr)/sizeof(arr[0]);
+    bubbleSort(arr, n);
+    printf("Sorted: \n");
+    for (int i = 0; i < n; i++)
+        printf("%d ", arr[i]);
+}
+
 // Add new line
bonia@MacBook-Pro-Vadim practice3_2 %
```

Увидим изменения в staged area.

```
[bonia@MacBook-Pro-Vadim practice3_2 % nano sort.c
[bonia@MacBook-Pro-Vadim practice3_2 % git diff
diff --git a/practice3_2/sort.c b/practice3_2/sort.c
index bf44d88..8971cb8 100644
--- a/practice3_2/sort.c
+++ b/practice3_2/sort.c
@@ -13,7 +13,7 @@ void bubbleSort(int arr[], int n) {
 }

 int main() {
-     int arr[] = {7, 6, 5, 4, 3, 2, 1};
+     int arr[] = {7, 6, 5, 4, 3, 1};
      int n = sizeof(arr)/sizeof(arr[0]);
      bubbleSort(arr, n);
      printf("Sorted: \n");
bonia@MacBook-Pro-Vadim practice3_2 % 
```

Удалим число 2 и увидим изменения. Показана измененная строка до и после.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git restore --staged sort.c
[bonia@MacBook-Pro-Vadim practice3_2 % git status
On branch mybranch
Your branch is up to date with 'origin/mybranch'.

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:   sort.c

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

no changes added to commit (use "git add" and/or "git commit -a")
bonia@MacBook-Pro-Vadim practice3_2 % 
```

Говорит что изменен файл sort.c

```
[bonia@MacBook-Pro-Vadim practice3_2 % git add sort.c
[bonia@MacBook-Pro-Vadim practice3_2 % git commit -m "Changed sort.c"
[mybranch 090ef1d] Changed sort.c
 1 file changed, 11 insertions(+)
[bonia@MacBook-Pro-Vadim practice3_2 % git log -n 5
commit 090ef1db4508b72b3b461f96c3d44e68a0d0d268 (HEAD -> mybranch)
Author: vadimpopov <bonia07052006@icloud.com>
Date:   Mon Mar 10 20:50:41 2025 +0700

    Changed sort.c

commit e28d5657cfcb8388a3a08fbe793a95b5aeec364e (origin/mybranch)
Author: vadimpopov <bonia07052006@icloud.com>
Date:   Mon Mar 10 20:41:51 2025 +0700

    Added pdf

commit 7ce5b2dab874fa9322f979ca01eb750dcec665bf
Author: vadimpopov <bonia07052006@icloud.com>
Date:   Mon Mar 10 20:31:47 2025 +0700

    Added file1.txt

commit a5acdba481d4a7962b60024b6993e94ab5137a42 (origin/term-2)
Author: vadimpopov <bonia07052006@icloud.com>
Date:   Mon Mar 10 20:03:10 2025 +0700

    Add new line

commit e6e7086c683d7e5f013fbd288207bd169c58ea61
Author: vadimpopov <bonia07052006@icloud.com>
Date:   Mon Mar 10 19:59:14 2025 +0700

    New file sort.c
bonia@MacBook-Pro-Vadim practice3_2 %
```

Добавим изменения, сделаем коммит и посмотрим журнал. Увидим что изменения приняты.

```
      New file sort.c
[bonia@MacBook-Pro-Vadim practice3_2 % nano sort.c
[bonia@MacBook-Pro-Vadim practice3_2 % cat sort.c
#include <stdio.h>

void bubbleSort(int arr[], int n) {
    for (int i = 0; i < n-1; i++) {
        for (int j = 0; j < n-i-1; j++) {
            if (arr[j] > arr[j+1]) {
                int temp = arr[j];
                arr[j] = arr[j+1];
                arr[j+1] = temp;
            }
        }
    }
}

int main() {
    printf("hello git\n");
    int arr[] = {7, 6, 5, 4, 3, 1};
    int n = sizeof(arr)/sizeof(arr[0]);
    bubbleSort(arr, n);
    printf("Sorted: \n");
    for (int i = 0; i < n; i++)
        printf("%d ", arr[i]);
}

// Add new line
bonia@MacBook-Pro-Vadim practice3_2 %
```

Добавим новую строку в sort.c main(). Выведем содержимое в терминал.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git status
On branch mybranch
Your branch is ahead of 'origin/mybranch' by 1 commit.
  (use "git push" to publish your local commits)

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:   sort.c

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

no changes added to commit (use "git add" and/or "git commit -a")
bonia@MacBook-Pro-Vadim practice3_2 %
```

```
[bonia@MacBook-Pro-Vadim practice3_2 % git restore sort.c
[bonia@MacBook-Pro-Vadim practice3_2 % cat sort.c
#include <stdio.h>

void bubbleSort(int arr[], int n) {
    for (int i = 0; i < n-1; i++) {
        for (int j = 0; j < n-i-1; j++) {
            if (arr[j] > arr[j+1]) {
                int temp = arr[j];
                arr[j] = arr[j+1];
                arr[j+1] = temp;
            }
        }
    }
}

int main() {
    int arr[] = {7, 6, 5, 4, 3, 1};
    int n = sizeof(arr)/sizeof(arr[0]);
    bubbleSort(arr, n);
    printf("Sorted: \n");
    for (int i = 0; i < n; i++)
        printf("%d ", arr[i]);
}

// Add new line
bonia@MacBook-Pro-Vadim practice3_2 %
```

Командой git resotre sort.c восстановим изменения и выведем содержимое. Увидим что новая строка пропала.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git status
On branch mybranch
Your branch is ahead of 'origin/mybranch' by 1 commit.
  (use "git push" to publish your local commits)

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

nothing added to commit but untracked files present (use "git add" to track)
bonia@MacBook-Pro-Vadim practice3_2 %
```

Пропало предупреждение о том что файл sort.c изменен.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git push origin mybranch
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 570 bytes | 570.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/vadimpopov1/C-Programming.git
   e28d565..090ef1d  mybranch -> mybranch
bonia@MacBook-Pro-Vadim practice3_2 %
```

Запушим.

```
[bonia@MacBook-Pro-Vadim practice3_2 % echo "new file" > greeting.txt
[bonia@MacBook-Pro-Vadim practice3_2 % git add greeting.txt
[bonia@MacBook-Pro-Vadim practice3_2 % git commit -m "Add file greeting.txt"
 [mybranch 8e28d09] Add file greeting.txt
  1 file changed, 1 insertion(+)
  create mode 100644 practice3_2/greeting.txt
 bonia@MacBook-Pro-Vadim practice3_2 %
```

Создадим новый файл greeting.txt с содержимым "new file". Добавим в staged area и закоммитим с сообщением "Add file greeting.txt"

```
[bonia@MacBook-Pro-Vadim practice3_2 % echo "hello" > greeting.txt
[bonia@MacBook-Pro-Vadim practice3_2 % git add greeting.txt
 bonia@MacBook-Pro-Vadim practice3_2 % git commit -m "Add content to greeting.txt
"
 [mybranch af5a0bf] Add content to greeting.txt
  1 file changed, 1 insertion(+), 1 deletion(-)
 bonia@MacBook-Pro-Vadim practice3_2 %
```

Добавим слово "hello" и закоммитим.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git branch feature/uppercase
[bonia@MacBook-Pro-Vadim practice3_2 % git switch feature/uppercase
 Switched to branch 'feature/uppercase'
[bonia@MacBook-Pro-Vadim practice3_2 % git status
 On branch feature/uppercase
 Untracked files:
   (use "git add <file>..." to include in what will be committed)
         ../.DS_Store

 nothing added to commit but untracked files present (use "git add" to track)
 bonia@MacBook-Pro-Vadim practice3_2 %
```

Создадим новую ветку, переключимся на нее и выведем git status. Он показывает что мы находимся в ветке feature/uppercase

```
[bonia@MacBook-Pro-Vadim practice3_2 % echo "HELLO" > greeting.txt
[bonia@MacBook-Pro-Vadim practice3_2 % git add greeting.txt
[bonia@MacBook-Pro-Vadim practice3_2 % git commit -m "Convert greeting to upperca
se"
 [feature/uppercase 04de9be] Convert greeting to uppercase
  1 file changed, 1 insertion(+), 1 deletion(-)
 bonia@MacBook-Pro-Vadim practice3_2 %
```

Изменим файл, закоммитим.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git branch
 * feature/uppercase
   mybranch
   term-1
   term-2
 bonia@MacBook-Pro-Vadim practice3_2 %
```

```
[bonia@MacBook-Pro-Vadim practice3_2 % git log --oneline --graph --all
* 04de9be (HEAD -> feature/uppercase) Convert greeting to uppercase
* af5a0bf (mybranch) Add content to greeting.txt
* 8e28d09 Add file greeting.txt
* 090ef1d (origin/mybranch) Changed sort.c
* e28d565 Added pdf
* 7ce5b2d Added file1.txt
| * f5c7c3b (term-2) Added file2.txt
|/
* a5acdba (origin/term-2) Add new line
* e6e7086 New file sort.c
```

```
[bonia@MacBook-Pro-Vadim practice3_2 % git switch mybranch
Switched to branch 'mybranch'
Your branch is ahead of 'origin/mybranch' by 2 commits.
  (use "git push" to publish your local commits)
bonia@MacBook-Pro-Vadim practice3_2 %
[bonia@MacBook-Pro-Vadim practice3_2 % cat greeting.txt
hello
bonia@MacBook-Pro-Vadim practice3_2 %
[bonia@MacBook-Pro-Vadim practice3_2 % git diff mybranch feature/uppercase
diff --git a/practice3_2/greeting.txt b/practice3_2/greeting.txt
index ce01362..e427984 100644
--- a/practice3_2/greeting.txt
+++ b/practice3_2/greeting.txt
@@ -1 +1 @@
-hello
+HELLO
bonia@MacBook-Pro-Vadim practice3_2 %
[bonia@MacBook-Pro-Vadim practice3_2 % git merge feature/uppercase
Updating af5a0bf..04de9be
Fast-forward
 practice3_2/greeting.txt | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)
bonia@MacBook-Pro-Vadim practice3_2 %
```

Переключимся на основную ветку, выведем информацию из greeting.txt, далее сравним и проведем слияние веток mybranch и feature/uppercase

```
[bonia@MacBook-Pro-Vadim practice3_2 % cat greeting.txt
HELLO
bonia@MacBook-Pro-Vadim practice3_2 %
```

Новое содержимое.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git branch -d feature/uppercase
Deleted branch feature/uppercase (was 04de9be).
bonia@MacBook-Pro-Vadim practice3_2 %
```

Удалим ветку.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git switch term-2
 Switched to branch 'term-2'
 Your branch is ahead of 'origin/term-2' by 1 commit.
   (use "git push" to publish your local commits)
[bonia@MacBook-Pro-Vadim practice3_2 % git merge mybranch
 Merge made by the 'ort' strategy.
  practice3_2/file1.txt    |   1 +
  practice3_2/greeting.txt |   1 +
  practice3_2/lab3.pdf     | Bin 0 -> 2795088 bytes
  practice3_2/sort.c       |  11 ++++++++++
  4 files changed, 13 insertions(+)
  create mode 100644 practice3_2/file1.txt
  create mode 100644 practice3_2/greeting.txt
  create mode 100644 practice3_2/lab3.pdf
[bonia@MacBook-Pro-Vadim practice3_2 % git log --oneline --graph --all
 *   934692a (HEAD -> term-2) Merge branch 'mybranch' into term-2
 |\
 | * 04de9be (mybranch) Convert greeting to uppercase
 | * af5a0bf Add content to greeting.txt
 | * 8e28d09 Add file greeting.txt
 | * 090ef1d (origin/mybranch) Changed sort.c
 | * e28d565 Added pdf
 | * 7ce5b2d Added file1.txt
 * | f5c7c3b Added file2.txt
 |/
 * a5acdba (origin/term-2) Add new line
 * e6e7086 New file sort.c
```

Перейдем в главную ветку, сольем с mybranch и изучим git status. Увидим что ветка mybranch слилась с term-2.

```
[bonia@MacBook-Pro-Vadim practice3_2 % git push origin term-2
 Enumerating objects: 23, done.
 Counting objects: 100% (23/23), done.
 Delta compression using up to 8 threads
 Compressing objects: 100% (15/15), done.
 Writing objects: 100% (19/19), 1.56 KiB | 1.56 MiB/s, done.
 Total 19 (delta 8), reused 0 (delta 0), pack-reused 0
 remote: Resolving deltas: 100% (8/8), completed with 1 local object.
 To https://github.com/vadimpopov1/C-Programming.git
    a5acdba..934692a  term-2 -> term-2
 bonia@MacBook-Pro-Vadim practice3_2 %
```

Запушим.