

Soundar Raja B

1. **Install and verify Git**

- * Use Homebrew to install Git.
- * Confirm installation by checking the Git version.

```
PS C:\Git Practice> git -v
git version 2.50.1.windows.1
PS C:\Git Practice>
```

2. **Configure Git**

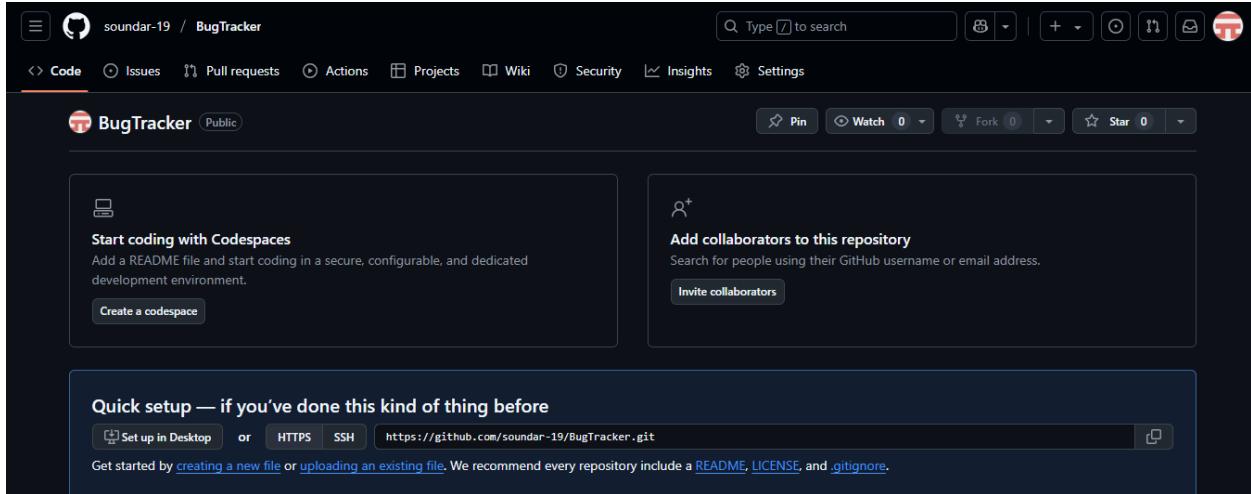
- * Set your global Git username and email to your real or test identity.

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo> git config --global user.name "soundar-19"
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo> git config --global user.email "soundarrajacf@gmail.com"
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo>
```

3. **Create GitHub Repository**

- * Go to GitHub and create a new repo named: `BugTracker`

- * Do **not** initialize with README or license.
- * Keep the repo **private** or **public** as needed.



4. **Clone the Repository**

- * Clone the repo to your local system using HTTPS.
- * Use your **GitHub token** to authenticate.

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo> git clone https://github.com/soundar-19/BugTracker.git
Cloning into 'BugTracker'...
warning: You appear to have cloned an empty repository.
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo>
```

5. **Verify `.` folder**

- * Inside the cloned folder, use the terminal to check if `.` is present.

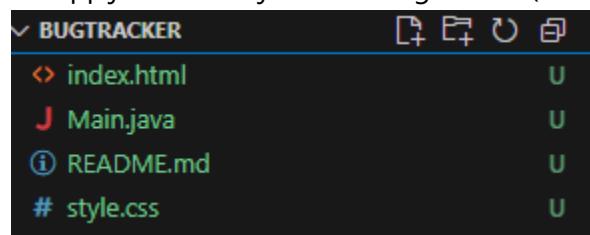
```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo> ls
```

Directory: C:\Users\sounraja\OneDrive - EPS US, LLC\Repo			
Mode	LastWriteTime	Length	Name
dar--l	21-07-2025 14:20		BugTracker

6. **Create Basic Files**

- * Create the following in the root of your repo:

- * `README.md`
- * `index.html` (basic BugTracker layout)
- * `style.css` (simple styles)
- * `app.js` or `main.java` or `Program.cs` (based on backend choice)



7. **Track Your Work**

- * Add and commit the above files using **conventional commits**:

- * `feat: initial layout for BugTracker`
- * `style: basic styles for homepage`

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git add index.html
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git commit -m "feat:Initial layout for BugTracker"
[main (root-commit) 1285d63] feat:Initial layout for BugTracker
 1 file changed, 10 insertions(+)
 create mode 100644 index.html
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git add style.css
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git commit -m "feat:basic styles for homepage"
[main 8cb3fee] feat:basic styles for homepage
 1 file changed, 6 insertions(+)
 create mode 100644 style.css
```

8. **Push Changes to GitHub**

- * Push to the `main` branch using GitHub token if needed.

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git push
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 643 bytes | 71.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/soundar-19/BugTracker.git
 * [new branch]      main -> main
```

9. **Edit File Remotely (Conflict Setup)**

- * On GitHub, open `index.html` and change an `

` tag.
- * Commit the change with: `fix: updated heading remotely`



10. **Change Same File Locally**

- * Locally, change the **same line** in `index.html`.

```
↳ index.html > ...
1   <!DOCTYPE html>
2   <html>
3     <head>
4       <title>BugTracker</title>
5     </head>
6     <body>
7       <h1>Welcome to the BugTracker</h1>
8       <p>Easily Track your Bugs</p>
9     </body>
10    </html>
11
```

11. **Trigger Merge Conflict**

* Try to push your local changes without pulling first.

* Observe the **merge conflict error**.

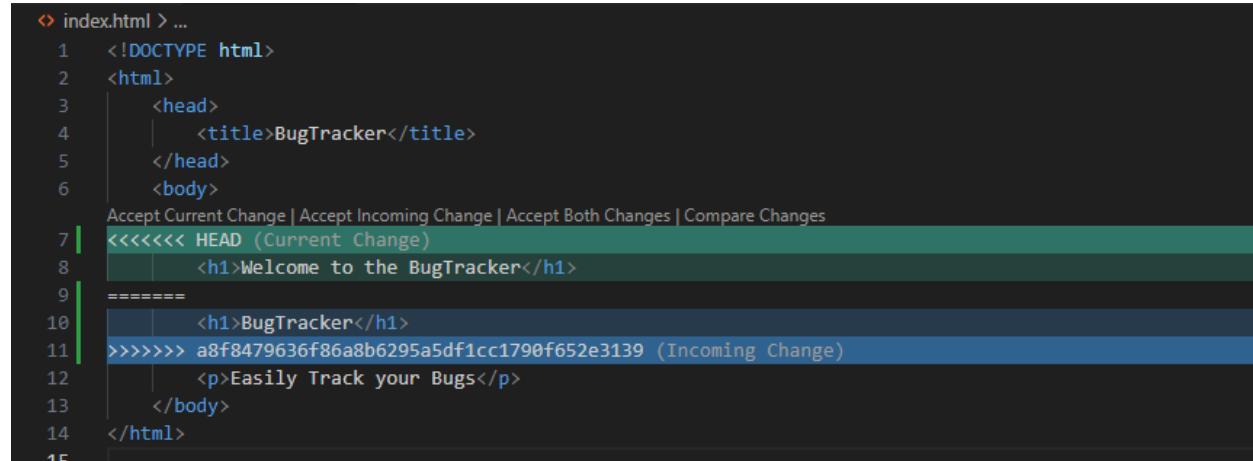
```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git push
To https://github.com/soundar-19/BugTracker.git
! [rejected]      main -> main (fetch first)
error: failed to push some refs to 'https://github.com/soundar-19/BugTracker.git'
hint: Updates were rejected because the remote contains work that you do not
hint: have locally. This is usually caused by another repository pushing to
hint: the same ref. If you want to integrate the remote changes, use
hint: 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
```

12. **Resolve Conflict**

* Pull from GitHub (`git pull origin main`)

* Open conflict in VS Code and manually resolve it.

* Commit the resolved file: `fix: resolved heading conflict`



```
<!DOCTYPE html> ...
<html>
  <head>
    <title>BugTracker</title>
  </head>
  <body>
    <h1>Welcome to the BugTracker</h1>
    <h1>BugTracker</h1>
  </body>
</html>
```

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git add index.html
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git commit -m "fix : heading conflict resolved"
[main a80b685] fix : heading conflict resolved
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git push
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 461 bytes | 153.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 1 local object.
To https://github.com/soundar-19/BugTracker.git
  a8f8479..a80b685  main -> main
```

13. **Branch for Frontend**

- * Create a new branch `frontend`

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git checkout -b "frontend"
Switched to a new branch 'frontend'
```

- * Modify/add to `index.html` and `style.css`

- * Commit your changes with a conventional commit.

- * Push the branch and create a **pull request** to `main`.

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git add index.html
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git add style.css
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git commit -m "refactor:handed over to the front end team"
[frontend f638403] refactor:handed over to the front end team
 2 files changed, 4 insertions(+)
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git push origin frontend
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), 467 bytes | 42.00 KiB/s, done.
Total 4 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
```

14. **Branch for Backend**

- * Switch to `main`, then create a new branch `backend`

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git checkout -b "backend"
Switched to a new branch 'backend'
```

- * Create/modify your backend logic file (`main.java`, `Program.cs`, etc.)

- * Commit and push.

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git add Main.java
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git commit -m "feat:initial backend configuration"
[backend 2834799] feat:initial backend configuration
 1 file changed, 6 insertions(+)
   create mode 100644 Main.java
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git push origin backend
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
```

- * Raise a PR to `main`.

refactor:code from the frontend team #1

Open soundar-19 wants to merge 1 commit into `main` from `frontend`

Conversation 0 Commits 1 Checks 0 Files changed 2

soundar-19 commented now
No description provided.

refactor:handed over to the front end team

No conflicts with base branch
Merging can be performed automatically.

Merge pull request You can also merge this with the command line. [View command line instructions.](#)

feat:initial backend configuration #2

Merged soundar-19 merged 1 commit into `main` from `backend` now

Conversation 0 Commits 1 Checks 0 Files changed 1

soundar-19 commented now Owner ...
No description provided.

feat:initial backend configuration 2834799

soundar-19 merged commit `13122f9` into `main` now **Revert**

Pull request successfully merged and closed **Delete branch**
You're all set — the `backend` branch can be safely deleted.

15. **Create ` `.gitignore`**

- * Add the following:

```
...
node_modules/
*.log
.env
...
```

- * Commit it: `chore: add .gitignore file`

16. **Stash Scenario**

- * Edit any file (e.g., `index.html`) but **don't commit**

- * Try pulling new changes from GitHub — Git should block you

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git pull origin main
From https://github.com/soundar-19/BugTracker
 * branch            main      -> FETCH_HEAD
Updating 2834799..0a28015
error: Your local changes to the following files would be overwritten by merge:
      Main.java
Please commit your changes or stash them before you merge.
Aborting
```

- * Use `git stash`, then `git pull`, then `git stash pop`

- * Resolve any conflict if it appears

```

J Main.java
1 import java.util.*;
2 public class Main{
3     public static void main(String[] args){
Accept Current Change | Accept Incoming Change | Accept Both Changes | Compare Changes
4 <<<<< Updated upstream (Current Change)
5     try{
6         HttpServer server = HttpServer.create(new InetSocketAddress(8000), 0);
7     }
8 =====
9     HttpServer server = HttpServer.create(new InetSocketAddress(8000), 0);
10    HttpServer server = HttpServer.create(new InetSocketAddress(8000), 0);
11    HttpServer server = HttpServer.create(new InetSocketAddress(8000), 0);
12 >>>>> Stashed changes (Incoming Change)
13 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Resolve in Merge Editor

```

3 files changed, 8 insertions(+), 2 deletions(-)
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git stash pop
Auto-merging Main.java
CONFLICT (content): Merge conflict in Main.java
On branch backend
Unmerged paths:
 (use "git restore --staged <file>..." to unstage)
 (use "git add <file>..." to mark resolution)
 both modified: Main.java

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

no changes added to commit (use "git add" and/or "git commit -a")
The stash entry is kept in case you need it again.
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker>

```

17. **Reset and Restore**

- * Add and stage a new dummy file (e.g., `debug.txt`)

- * Then **unstage it** using `git reset`

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git add debug.txt
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git reset
```

- * Restore any accidental local change using `git restore`

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git restore Main.java
```

18. **Rename Branch**

- * Rename the current `main` branch to `dev-main` using Git

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git branch
  backend
* dev-main
  frontend
```

19. **View Commit History**

* Use `git log` and take a screenshot showing at least 5 commits with:

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git log
commit a80b685354a4f9cfc6fed9f075934bb32609bca6 (HEAD -> dev-main, origin/dev-main)
Merge: e49df10 a8f8479
Author: soundar-19 <soundarrajacf@gmail.com>
Date:   Mon Jul 21 15:02:36 2025 +0530

fix : heading conflict resolved

commit e49df1082600d6c75311f674df5ec34aca08f722
Author: soundar-19 <soundarrajacf@gmail.com>
Date:   Mon Jul 21 14:45:27 2025 +0530

fix:updated heading locally

commit a8f8479636f86a8b6295a5df1cc1790f652e3139
Author: Soundar Raja B <142904420+soundar-19@users.noreply.github.com>
Date:   Mon Jul 21 14:43:06 2025 +0530
```

* different commit types ('feat', 'fix', 'chore', etc.)

* merge conflict resolved commit

```
PS C:\Users\sounraja\OneDrive - EPS US, LLC\Repo\BugTracker> git status
On branch dev-main
Your branch is up to date with 'origin/dev-main'.

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

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