Experiment 3: Branching Development Model-Build a branching model to help your team understand the git workflow for faster work integration.

main branch → Always production-ready.

develop branch → Integration branch for new work.

feature branches → For new features (feature/login-page).

release branches → For preparing releases (release/v1.0).

hotfix branches → For urgent fixes on production (hotfix/fix-bug).

Initialise with first commit(ReadMe.md)

```
Switched to a new branch 'main'
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> echo "# Assignment 3 - Branching Model" > README.md
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git add README.md
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git commit -m "initial commit"
[main (root-commit) ba8c4b5] initial commit
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 README.md
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git push -u origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 16 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 278 bytes | 92.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
```

Create new branches main and develop.

```
(base) PS C:\Users\supi0\Desktop\DevOps 3> git init assignment_3
 Initialized empty Git repository in C:/Users/supi0/Desktop/DevOps 3/assignment_3/.git/
(base) PS C:\Users\supi0\Desktop\DevOps 3> cd .\assignment_3\
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git checkout -b main
 Switched to a new branch 'main'
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git checkout -b develop
 Switched to a new branch 'develop'
```

Push the new branches:

```
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git push -u origin main
 Enumerating objects: 3, done.
 Counting objects: 100% (3/3), done.
 Delta compression using up to 16 threads
 Compressing objects: 100% (2/2), done.
 Writing objects: 100% (3/3), 278 bytes | 92.00 KiB/s, done.
 Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
 To https://github.com/Suprabhat187/Experiment-3.git
  * [new branch]      main -> main
 branch 'main' set up to track 'origin/main'.
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git checkout -b develop
 Switched to a new branch 'develop'
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git push -u origin develop
 Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
 remote:
 remote: Create a pull request for 'develop' on GitHub by visiting:
 remote:      https://github.com/Suprabhat187/Experiment-3/pull/new/develop
 remote:
 To https://github.com/Suprabhat187/Experiment-3.git
```

Starting a feature branch

```
branch 'develop' set up to track 'origin/develop'.
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git checkout -b feature/login-page develop
Switched to a new branch 'feature/login-page'
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git add .
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git commit -m "Added login page feature"
On branch feature/login-page
nothing to commit, working tree clean
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git push origin feature/login-page
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature/login-page' on GitHub by visiting:
remote:      https://github.com/Suprabhat187/Experiment-3/pull/new/feature/login-page
remote:
To https://github.com/Suprabhat187/Experiment-3.git
 * [new branch]      feature/login-page -> feature/login-page
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3>
```

Merging feature to develop:

```
[new branch]      feature/login-page -> feature/login-page
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git checkout develop
Switched to branch 'develop'
Your branch is up to date with 'origin/develop'.
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git merge feature/login-page
Already up to date.
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git push origin develop
Everything up-to-date
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3>
```

Creating a new version and merging with main:

```
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git checkout -b release/v1.0 develop
Switched to a new branch 'release/v1.0'
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git commit -m "Release v1.0 ready"
On branch release/v1.0
nothing to commit, working tree clean
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git merge release/v1.0
Already up to date.
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git tag v1.0
(base) PS C:\Users\supi0\Desktop\DevOps 3\assignment_3> git push origin main --tags
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Suprabhat187/Experiment-3.git
 * [new tag]         v1.0 -> v1.0
```